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Multiple sclerosis patients benefit from diabetes drug

A drug currently FDA-approved for use in diabetes shows some protective effects in the brains of patients with relapsing remitting multiple sclerosis, researchers at the University of Illinois at Chicago College of Medicine report in a study currently available online in the *Journal of Neuroimmunology*.

In a small, double-blinded clinical trial, patients with relapsing remitting multiple sclerosis were assigned to take pioglitazone (a drug commercially known as Actos used to treat type-2 diabetes) or a placebo. Patients continued their normal course of therapy during the trial. Standard neurological tests were done initially, as were MRI scans to provide baseline values for lesions typically seen in MS patients. The patients were evaluated every two months, and blood samples were taken. Repeat MRI scans were done after five months and again after one year.

Patients taking pioglitazone showed significantly less loss of gray matter over the course of the one-year trial than patients taking placebo. Of the 21 patients who finished the study, patients taking pioglitazone had no adverse reactions and, further, found taking pioglitazone, which is administered in an oral tablet, easy.

"This is very encouraging," said Douglas Feinstein, research professor of anesthesiology at UIC. "Gray matter in the brain is the part that is rich in neurons. These preliminary results suggest that the drug has important effects on neuronal survival."

Feinstein's lab has been interested in the class of drugs called thiazolidinediones, or TZDs. Several TZDs have been approved for use in the treatment of type-2 diabetes because of the drugs' effect on the body's response to insulin.

The researchers focused on pioglitazone because of its known anti-inflammatory effects, Feinstein said. They used primary cultures of brain cells to show that pioglitazone reduced the production of toxic chemicals called cytokines and reactive oxygen species. These molecules are believed to be important in the development of symptoms in MS.

Feinstein's lab proceeded to test pioglitazone in an animal model of MS. They and others showed that pioglitazone and other TZDs "can significantly reduce the clinical signs in mice with an MS-type disease," said Feinstein.

"More importantly, when mice who are already ill are treated with pioglitazone, the clinical signs of the disease go away," he said. "We were able to induce almost complete remissions in a number of mice."

"We are now working to determine the mechanisms to explain the protective effect on neurons that we see in our studies," said Feinstein. "We hope to expand into a larger trial to confirm these preliminary results."

Claudia C Kaiser, who was a post-doctoral student at UIC, is first author on the paper. Other authors are Dinesh Shukla and Demetrios Shias of UIC; Glen Stebbins, Dusan Stefanoski and George Katsamakias of Rush University Medical Center; and Douglas Jeffrey of Wake Forest University School of Medicine. Takeda Pharmaceuticals funded the study and provided the drug but had no other involvement in the study.

Author: Medical News Today

High doses of vitamin D cut relapse rate amongst MS sufferer's

Powerful new evidence about the ability of vitamin D to stem a wide range of diseases has brought the prospect of a nationwide programme to prescribe it in Scotland as a dietary supplement significantly closer.

Reports at the weekend suggested that experts were increasingly convinced that the so-called sunshine drug — whose significance was first revealed in detail by The Times last year — could make a difference to the country's appalling health record.

New research suggests that high doses of vitamin D could dramatically cut the relapse rate in people with multiple sclerosis. According to scientists in Canada, more than a third of sufferers taking high levels of supplementation did not fall ill during the period of the trial, representing a marked change in the pattern of their disease.

Like Scotland, Canada has a high rate of MS and there is growing evidence that this is connected to a cloudy climate that inhibits the natural uptake of vitamin D through the skin. Several studies have found vitamin D deficiency in people suffering from the disease.

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- [Is vitamin D the new wonder supplement?](#)
- [Boy petitions MSPs for action on vitamin D](#)
- [Vitamin D deficiency link to multiple sclerosis in children](#)

Fears that not enough is known about the possible side effects of vitamin D supplements were countered by evidence presented at the annual meeting of the American Academy of Neurology.

Dr Jodie Burton, a neurologist at the University of Toronto, studied 25 people with relapsing-remitting multiple sclerosis. During the year of treatment 40 per cent of patients on the low dose of vitamin D (1,000 international units daily) experienced a relapse compared to only 16 per cent of those in the high dose (14,000 IU daily) group.

People taking the high dose of vitamin D suffered 41 per cent fewer relapses than the year before the study began, compared with 17 per cent of those taking typical doses.

Dr Burton found that those taking high doses of vitamin D did not suffer any significant side effects.

A recent online paper for the Journal of Neurology states that, from a medical point of view, vitamin D supplementation for MS patients "appears unavoidable".

Charles Pierrot-Deseilligny, a neurologist from Salpêtrière Hospital, Paris, says in the paper that vitamin D deficiency is "potentially the most promising" new clinical implication for MS.

He writes that most MS patients have low or insufficient levels of vitamin D compared to the international norm. "It can no longer be ignored that many MS patients have a lack of vitamin D which could be . . . corrected using an appropriate vitamin D supplementation."

Dr Pierrot-Deseilligny says that giving supplements to MS patients at all stages of the disease appears useful.

The best results in the Canadian study were observed only in those who took the high dose. People in that group were given escalating doses of the vitamin for six months, to a maximum of 40,000 IU daily. Doses were then gradually lowered over the next six months, averaging out to 14,000 IU daily for the year. Dr Burton advised MS patients to talk to their doctors before beginning vitamin D supplements, noting that too much of the vitamin can be harmful for people with certain medical conditions, including kidney disease.

Data was also presented in the Canadian study demonstrating that high dose vitamin D appears to suppress the auto-immune responses thought to cause MS. In patients given high doses, T-cell activity was shown to drop significantly. It is these T-cells that malfunction and attack the myelin sheaths that surround and protect nerve cells in both peripheral nerves and the brain.

Two gene locations linked to multiple sclerosis discovered

Australian and New Zealand researchers have accelerated research into Multiple Sclerosis by discovering two new locations of genes which will help to unravel the causes of MS and other autoimmune disease.

Their findings will be published today in the journal *Nature Genetics*.

"For decades the cause of MS has remained a mystery. This discovery reveals important new insights into the genetic susceptibility to the disease," says Professor Trevor Kilpatrick, Director for Neurosciences at the University of Melbourne, who with Dr Justin Rubio of Florey Neurosciences Institutes coordinated the international study.

"The newly discovered gene locations in chromosomes 12 and 20, offer very promising targets which indicate susceptibility to MS," says Professor Kilpatrick.

"They also reveal a link between genetic susceptibility to MS and other autoimmune diseases including Type 1 diabetes, Rheumatoid Arthritis and Graves' Disease and also the potential involvement of Vitamin D metabolism in the risk of developing these diseases."

"These results are like the key in the door - leading us to where to look for MS susceptibility," explains Professor Trevor Kilpatrick.

The research was conducted by members of the ANZgene consortium, more than 40 investigators from 11 institutions in Australia and New Zealand.

The three year study utilized the MS Research Australia (MSRA) Gene Bank and involved scanning the DNA of 1,618 people with MS and 3,413 people without MS (controls).

Using a genome-wide association scan (GWAS), researchers scanned the entire human genome in broad brushstrokes; looking at genetic landmarks in the genome and then progressively narrowing down their search to individual genes.

Dr Justin Rubio who coordinated the GWAS says these genetic discoveries are a major advance for the field.

"We expect that within one to two years we will be able to fine map these new regions and identify the genetic changes that underpin these findings," says Dr Rubio.

"Our next steps include studying how changes in these target genes might influence the development of MS. This work could provide insight into the development of novel therapeutics," says Dr Rubio.

MS affects some 2.5 million people worldwide and almost 20,000 in Australia. It is a devastating autoimmune disease as it occurs at the prime of life and mostly in young Caucasian women.

"This Australasian team is competing on a global scale to unravel the complex genetics of MS. This is a significant discovery" says Professor Jim Wiley, Chairman of the ANZGene consortium.

Mr Jeremy Wright, Executive Director of MS Research Australia, says: "We are thrilled to have been funding this study with the Australian Research Council and helping in its coordination. It is central to our mission of accelerating MS research to identify susceptibility in individuals so that we can potentially prevent the onset of the disease, and develop better ways to treat it".

Author: [Science Daily](#)

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Struck down by the curse of MS - at age FIVE: Little Lucy reveals childhood toll of incurable disease

Lucy Wood is much like any other little girl. She adores Disney princesses and looking at her pony story books. Everyone knows her for her love of cuddles, and she dreams of being a pop star when she grows up.

But last summer, just a few days after her fifth birthday, she became one of the youngest people in Britain to be diagnosed with Multiple Sclerosis, the progressively disabling neurological condition.

For an adult such a diagnosis would be a dreadful blow, for a child it is unbearably cruel.

'Hearing the diagnosis was like being in a head-on car crash,' says her mother Sharon, 39. 'We already had a pretty good idea of what was wrong with Lucy, but having it confirmed was horrific.'

Their heartbreak was compounded by the fact the Woods are no strangers to the ravages of MS. Lucy's father, Stuart, was diagnosed with the disease aged 27.

Now 40, he is on the drug Rebif which has slowed the condition's progress, but his fine motor skills - the skills you need for writing - are deteriorating and he struggles to walk a few hundred yards.

Before Lucy's birth in August 2003 it was his drug regimen, rather than MS, that Stuart feared might have affected his unborn child.

'When they put this little baby in my arms and I could see she was perfect I broke down,' he recalls.

Like older sister, Katie, 12, Lucy initially thrived. But, at 18 months, as she spoke her first words, she developed a stammer.

'For a while she had speech therapy,' says Sharon, a housewife. 'We were told that she was a bright girl racing to get her words out and as her speech improved her stammer would disappear. But now I wonder if that was the first sign something was wrong.'

Then in June 2007, when Lucy was nearly four, disaster struck after she developed conjunctivitis.

'I realised her eye affected with conjunctivitis wasn't responding to anything,' says Sharon.

'In a panic I covered her right eye and asked what she could see. She said, "all black mummy."

A ray of hope

Sharon immediately took Lucy to an optician who explained there was pressure building at the back of her left eye and referred them to the local hospital in Sunderland.

After a CT scan came back clear, Lucy was transferred to Newcastle General Infirmary, the children's specialist centre for the north-east of England. She was put under a general anaesthetic while doctors carried out a lumbar puncture, blood tests and an MRI scan.

'A few days later the paediatric neurologist explained they suspected Lucy had Acute Disseminated Encephalomyelitis (ADEM),' says Sharon. 'We'd never heard of it but were just relieved it wasn't life threatening.'

ADEM is an auto-immune disorder which is more common in children. Like MS, it attacks the myelin sheaths that surround and protect the nerves. Without this protection, the nerves, which are the crucial pathways along which the brain sends messages out to the body, start to deteriorate. This can lead to MS symptoms such as clumsiness, lack of motor skills, or even blindness.

However unlike MS, ADEM is usually temporary. There is a brief but intense swelling in the brain, usually following an infection - in Lucy's case possibly the conjunctivitis - and it is this swelling which causes the damage to the myelin sheath.

In 80 per cent of cases the child will only suffer one attack and few long-term side effects. 'Lucy was put on a high dose of steroids and miraculously, within hours, her sight was back,' says Sharon. But the respite was short lived. Six weeks later, as Lucy played with her toys, Sharon noticed that Lucy was blind, this time in her right eye.

'My heart hit my boots,' says Sharon. 'We had been told ADEM was unlikely to reoccur but it seemed Lucy was one of the unlucky ones.'

After a third attack when she collapsed at school and began vomiting, her parents began to fear the worst. Sharon accompanied Lucy in the ambulance.

'I thought I was going to lose her. The left side of her face was twisting as if she was suffering a massive stroke and she was unable to swallow and was virtually paralysed.'

Symptoms like her sick father's

At the hospital, Lucy received high doses of steroids and again her condition improved. But an MRI scan picked up scarring on Lucy's brain called lesions. (These occur when there is nerve damage and can indicate MS.)

'Lucy's blindness in one eye and slurred speech - all seemed identical to Stuart's early MS symptoms,' says Sharon. 'Deep down I think we knew.'

We did ask if Lucy had MS, but the neurologist felt unable to make that diagnosis after just a couple of episodes. He later told us he needed absolute proof before giving such a lifechanging verdict.'

It was only after the fourth attack that Lucy was finally diagnosed. 'It was her birthday party and Lucy lay down on the kitchen floor exhausted, but then couldn't get up,' says Sharon. 'When she began vomiting, I put her to bed hoping it was a tummy bug.' But two days later, Lucy started dragging her left leg, just as her father had done before he was diagnosed.

'I felt sick,' says Sharon. 'This time, her neurologist confirmed MS. We were inconsolable; it just seemed so cruel.'

Research shows that having a parent with MS increases your likelihood of getting the disease from one in 800 to one in 40.

As Dr Evangeline Wassmer, a paediatric neurologist at Birmingham Children's Hospital, explains: 'If your parent has MS you have a predisposition, but it's still fairly unlikely you'll get it. There are many other possible causes such as lack of vitamin D, smoking and the hygiene theory, where people are just too clean.'

The concern for children with the disease is that it is not diagnosed early enough. About 85,000 Britons suffer from MS and research shows that in 10 per cent of cases, the onset occurs before the age of 16.

However, most of these children go undiagnosed until adulthood and the symptoms such as clumsiness and tiredness are simply put down to growing pains.

'One of the problems is that some health professionals are not aware that MS can affect children,' says Dr Wassmer, who is leading an MS Society research project into the disease in UK children.

Blaming himself

This why the MS Society has just launched a campaign to raise awareness of MS in young people, with Lucy featuring in the nationwide advertising campaign.

In some ways, Lucy is lucky because her family history meant doctors always considered MS as a possible diagnosis.

When the diagnosis was finally confirmed, Stuart was particularly distraught, blaming himself. 'Rationally I know it isn't my fault,' he says. 'But that hasn't stopped the guilt - I am the one who has passed this disease on to my beautiful little girl.'

There are two main types of MS. Lucy has the relapsing/remitting type which affects about 65 per cent of sufferers.

These patients have episodes of symptoms, followed by periods of normality. Most will eventually develop secondary progressive, when symptoms are constant and deteriorating. This is similar to the other form of MS which is known as primary progressive. Here there are no periods of respite.

During her bad days, Lucy suffers from slurred speech and blurred sight, and has to use a buggy for trips out. In between she is like any normal child, apart from tiring easily and occasionally dragging her left leg. She takes the same immune suppressant drug as her father - Sharon gives her the daily injections.

'She is such a brave girl, she never complains,' says her mother.

Because there is so little research into children's MS, it is difficult to work out a definitive prognosis for Lucy. However experts believe she will experience significant neurological deterioration before her 21st birthday.

'Who knows what the future may hold?', says Sharon. 'There could easily be a new drug or even a cure for MS. We have been unlucky. But we are a strong and loving family. We have a lot to be thankful for.'

www.mssociety.org.uk 12 June 2009

Numbers of people with MS higher than previously estimated

New research released by the MS Society has for the first time revealed an accurate estimate of the number of people living with a diagnosis of multiple sclerosis (MS) in the UK.

The results show that there is likely to be around 100,000 people with MS in the UK - a 20 per cent increase on previous estimates.

The new study of GP records - funded by the MS Society - was carried out by the London School of Hygiene and Tropical Medicine and updates previous estimates of 85,000.

The revised figure has major implications for health and social services and the study is a precursor to a pilot MS Register, which will provide much more information on exactly how MS affects individuals.

MS Society Chief Executive, Simon Gillespie, said: "For the first time, we have the right information on the numbers of people with MS. Based on this information, we will seek to work with local health and social services across the UK to improve services for people with MS.

"This is just the beginning. As part of its leadership of a European initiative, the MS Society will now fund a pilot MS Register, which will provide much more information on how MS affects individuals.

"If this pilot proves successful, we hope the governments in all four nations of the UK will support the introduction of a complete register."

The study was brought about following work carried out by MS Society members in Hampshire, who found that in their local area, the previous estimated prevalence rate was inaccurate.

Knowing how many people have MS is important so that health and social services can provide the right types of care and support.

In many areas of the country people do not currently have access to all the nursing care, drugs and treatment regime that they so desperately need.

Secretary of State backs MS Society work retention project

Secretary of State for work and pensions James Purnell MP is lending his support to an MS Society-led project designed to help people with chronic and fluctuating health conditions remain in work.

Mr Purnell joins the MS Society and a range of charities, work organisations and leading UK employers and trade unions at a round table event at the Work Foundation in London today (2 June).

Also attending is Dame Carol Black, author of 'Working for a healthier tomorrow' – the influential report that prompted the DWP to support the MS Society in setting up the project: 'Work retention for people with chronic and fluctuating health conditions'.

Simon Gillespie, chief executive of the MS Society, said: "All too often, people with multiple sclerosis (MS) and other fluctuating health conditions say they left work too soon, either voluntarily or due to pressure from an employer. We want to provide an information resource that can act as a safety net at the point at which someone's working life may be about to fall off a cliff.

"We also hear positive stories from employers who have invested in keeping on an employee with a chronic or fluctuating health condition. In many cases, they have benefited from keeping experienced staff on board, and have avoided the costs of recruiting anew. This information needs to be shared and we welcome the support of the Secretary of State and Dame Carol in pushing this up the work agenda."

This working group will act as the starting point for a project supported by the DWP, designed to bring together an online resource for employees and employers, raising awareness of the support available to help people to stay in work. The site is due to be launched by the end of 2009. The conditions specifically covered by the project are MS, diabetes, rheumatoid arthritis, HIV and cancer.

New Pathways Issue 55

Myelin can regenerate in cats

Scientists have discovered that myelin can be restored and nerve function re-established in cats with severe neurological illness. The finding is important because it shows the possibility of restoring myelin in humans with MS.

A research team from the university of Wisconsin Madison discovered that cats which had been fed on irradiated pet food went on to develop severe neurological problems, including movement disorders vision loss and paralysis. The cats suffered severe and widely distributed demyelination, similar to what happens in MS.

Taken off the irradiated food, all previously demyelinated axons became re-myelinated and the cats recovered, although their myelin sheaths were not as thick as healthy myelin.

"The fundamental point of the study is that it proves unequivocally that extensive remyelination can lead to recovery from a severe neurological disorder," said Ian Duncan, the UW-Madison neuroscientist who led the research. "It indicates the profound ability of the central nervous system to repair itself."

YOUR JOKES

Wit and Wisdom from Military Manuals

"A slipping gear could let your M203 grenade launcher fire when you least expect it. That would make you quite unpopular in what's left of your unit." - Army's magazine of preventive maintenance

"Aim toward the Enemy" - Instructions printed on U.S. Rocket Launcher

"When the pin is pulled, Mr. Grenade is not our friend." - U.S. Marine Corps

"Cluster bombing from B-52s is very, very accurate. The bombs are guaranteed always to hit the ground." - USAF Ammo Troop

"If the Enemy is in range, so are you." - Infantry Journal

"It is generally inadvisable to eject over the area you just bombed" - U.S. Air Force Manual

"Whoever said the pen is mightier than the sword obviously never encountered automatic weapons." - General MacArthur

"Try to look unimportant; they may be low on ammo." - Infantry Journal

"You, you, and you. Panic. The rest of you come with me." - U.S. Marine Gunnery Sgt.

"Tracers work both ways." - U.S. Army Ordnance

"Five second fuses only last three seconds" - Infantry Journal

"Don't ever be the first, don't ever be the last, and don't ever volunteer to do anything." - U.S. Navy Swabbie

"Bravery is being the only one who knows you're afraid." - David Hackworth

"If your attack is going too well, you're walking into an ambush." - Infantry Journal

"No combat-ready unit has ever passed inspection." - Joe Gay

"Any ship can be a minesweeper. Once." - unknown

"Never tell the Platoon Sergeant you have nothing to do." - Unknown Marine Recruit

"Don't draw fire; it irritates the people around you."

"If you see a bomb technician running, follow him and try to keep up." - USAF Ammo Troop

"You've never been lost until you've been lost at Mach 3." - Paul F. Crickmore (test pilot)

"The only time you have too much fuel is when you're on fire."

"Blue water Navy truism: There are more planes in the ocean than submarines in the sky."
- From an old carrier sailor

"If the wings are traveling faster than the fuselage, it's probably a helicopter -- and therefore, unsafe."

"When one engine fails on a twin-engine airplane, you always have enough power left to get you to the scene of the crash."

"Without munitions, the USAF would be just another expensive flying club."

"What is the similarity between air traffic controllers and pilots? If a pilot screws up, the pilot dies; if ATC screws up...the pilot dies."

"Never trade luck for skill."

The three most common expressions (or famous last words) in aviation are... "Why is it doing that?" "Where are we?" And "Oh Sh*t!"

"Weather forecasts are horoscopes with numbers."

"Airspeed, altitude and brains. Two are always needed to complete the flight successfully."

"Mankind has a perfect record in aviation; we've never left one up there!"

"Flashlights are tubular metal containers kept in a flight bag to store dead batteries."

"Flying the airplane is more important than radioing your flight to a person on the ground who is incapable of understanding or doing anything about it."

"The Piper Cub is the safest airplane in the world; it can just barely kill you." - Attributed to Max Stanley (Northrop test pilot)

"A pilot who doesn't have any fear probably isn't flying his plane to its maximum." - Jon McBride, astronaut

"If you're faced with a forced landing, fly the thing as far into the crash as possible." - Bob Hoover (renowned aerobatic and test pilot)

"Never fly in the same cockpit with someone braver than you."

"There is no reason to fly through a thunderstorm in peacetime." - Sign over squadron ops desk at Davis-Monthan AFB, AZ, 1970

"If something hasn't broken on your helicopter, it's about to."

Basic Flying Rules: "Try to stay in the middle of the air. Do not go near the edges of it. The edges of the air can be recognized by the appearance of ground, buildings, sea, trees and interstellar space. It is much more difficult to fly there."

"You know that your landing gear is up and locked when it takes full power to taxi to the terminal."

As the test pilot climbs out of the experimental aircraft, having torn off the wings and tail in the crash landing, the crash truck arrives, the rescuer sees a bloodied pilot and asks, "What happened?" The pilot's reply, "I don't know, I just got here myself!" - Attributed to Ray Crandell (Lockheed test pilot)

MEMBERS COMPETITION

A £5 prize will be given to the member whose entry has the most correct answers. Even if you can't answer all the questions, send in those you have answered – you could still win!

The first letter of each answer will spell out the name of a London Underground line

- 1/ Who is the prime minister of Italy?
- 2/ If litmus paper turns red when dipped in fluid what does denote?
- 3/ What do Americans call the large green grasshoppers Common to central and Eastern states which can be heard on warm evenings?
- 4/ How many triple word score squares is there on a scrabble board?
- 5/ Joanne Kathleen are the first names of which author?
- 6/ Which city was besieged by the Germans from August 1941 to January 1943?
- 7/ On which D-Day beach did Private Ryan land?
- 8/ The plot of which James Bond film centres around a stolen Faberge egg?

Name:

Address:

Send Completed Forms To:
Mr D Henderson
74 Windermere Road
Stockton-on-Tees
Cleveland TS18 4LY

All entries to be received by the next social. The winner will be drawn from entries received with the highest number of correct answers.

Answers to last quiz:

1/Nick Leeson 2/Osmosis 3/Robin Cook 4/Trafalgar Square 5/Tom Hanks 6/ Easter Island
7/Reflexology 8/Nepal