NEW LINK:

'UPDATE: OCTOBER 2011 - SCIENTISTS CONFIRM ALZHEIMER'S DISEASE (AD) IS A TRANSMISSIBLE, INFECTIOUS, CONTAGIOUS PRION DISEASE - the human strain of Mad Cow Disease.

http://www.youtube.com/watch?v=xtN6hoyTdR4
VIDEO of Claudio Soto, Ph.D., professor of neurology at The University of Texas Medical School at Houston, part of UTHealth, announcing his findings. Dr. Soto says this is a contagious disease which could be transmitted by blood.

Alzheimer's Disease (AD) and sporadic Creutzfeldt Jakob Disease (sCJD) are sister prion diseases, transmissible, infectious by medical equipment, (scopes, etc.) dental and eye equipment, blood, urine, feces, saliva, mucous (aerosols: possibly by coughs & sneezes) Doctors frequently misdiagnose AD and sCJD one for the other. The symptoms and neuropathology are almost identifical.

Right now the US is in the middle of a raging, always fatal, prion disease epidemic: There are over 6 million victims of AD and 1 million Parkinson's Disease victims, with a new AD case every 69 seconds !

TRANSMISSIBLE - CONTAGIOUS - INFECTIOUS

http://www.sciencedaily.com/releases/2011/10/111004113757.htm?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+sciencedaily+%28ScienceDaily%3A+Latest+Science+News%29

"Researchers injected the brain tissue of a confirmed Alzheimer's patient into mice and compared the results to those from injected tissue of a control without the disease. None of

the mice injected with the control showed signs of Alzheimer's, whereas all of those injected with Alzheimer's brain extracts developed plaques and other brain alterations typical of the disease."

http://www.epharmapedia.com/news/details/11/1403/Alzheimer%E2%80%99s_disease_may_be_contagious.html?lang=en

Alzheimer’s disease may be "contagious" ..

The brain damage that characterizes Alzheimer’s disease may originate in a form similar to that of infectious diseases such as bovine spongiform encephalopathy (mad cow) , according to newly published research by The University of Texas Health Science Center at Houston (UTHealth).

“Our findings open the possibility that some of the sporadic Alzheimer’s cases may arise from an infectious process, which occurs with other neurological diseases such as mad cow and its human form, Creutzfeldt-Jakob disease,” said Claudio Soto, Ph.D., professor of neurology at The University of Texas Medical School at Houston, part of UTHealth. “The underlying mechanism of Alzheimer’s disease is very similar to the prion diseases. It involves a normal protein that becomes misshapen and is able to spread by transforming good proteins to bad ones. The bad proteins accumulate in the brain, forming plaque deposits that are believed to kill neuron cells in Alzheimer’s.”

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Some Alzheimers may be infectious in etiology

- 13 Oct 2011 19:49 GMT

http://medicalxpress.com/news/2011-10-alzheimer-transmissible-similar-infectious-prion.html

The brain damage that characterizes Alzheimer's disease may originate in a form similar to that of infectious prion diseases such as bovine spongiform encephalopathy (mad cow) and Creutzfeldt-Jakob, according to newly published research by The University of Texas Health Science Center at Houston (UTHealth).

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http://www.agingresearch.org/content/blog/detail/3779/

November 3, 2011

Is Alzheimer’s disease contagious? [sCJD pathways of risk]

Researchers at the University of Texas injected mice with human brain tissue ravaged by Alzheimer’s and as a result the mice began to exhibit changes characteristic of the disease. A fairly palatable study considering the horror belied in the headline and the study may explain the development of Alzheimer’s in individuals free of genetic and behavioral risk factors. The rodents’ response to the beta-amyloid laden brain matter evoked comparison to the infectious processes of Bovine Spongiform Encephalopathy, better known as Mad Cow disease, and its human counterpart, Creutzfeldt-Jakob disease (CJD). These transmissible disorders result from exposure to blood or tissue contaminated with prions, misshapen proteins that attack and deform the neural tissue of a healthy host leading to amyloid accumulation and neurocognitive decline. CJD infection can result from blood transfusions, organ donations, and surgical equipment as prions are impervious to sterilization processes. This progressive pilot study suggests that Alzheimer’s disease may be transmitted similarly, offering an explanation for the seemingly sporadic development of Alzheimer’s disease.
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http://www.dailymail.co.uk/health/article-2045587/Alzheimers-infectious-like-mad-cow-disease.html

Is Alzheimer's contagious? Condition 'could be infectious like mad cow disease'
By Claire Bates

Last updated at 5:09 PM on 5th October 2011

Read more: http://www.dailymail.co.uk/health/article-

2045587/Alzheimers-infectious-like-mad-cow-disease.html#ixzz1i4Bv6upt

Alzheimer's could in some cases be caused by an infection and the disease could even be contagious, scientists have claimed.

The damage to the brain caused by the neurological condition is similar to that caused by infectious diseases such as mad cow and the human form CJD.
Researchers at the University of Texas Health Science Center at Houston were studying what could cause the build-up of proteins in the brain, which characterises the degenerative condition.
The effect on the brain: This computer graphic compares an Alzheimer's brain (left) with a healthy brain. It is shrunken due to the degeneration and death of nerve cells
In tests on mice, they found that it occurs when a normal protein becomes misshapen and then spreads by turning 'good' proteins into bad ones. A similar process is seen in both mad cow disease and CJD.

"He added: 'Our findings open the possibility that some of the sporadic Alzheimer's cases may arise from an infectious process, which occurs with other neurological diseases such as mad cow and its human form, Creutzfeldt-Jakob disease [CJD].'
The team injected the brain tissue from an Alzheimer's patient into a group of mice and compared the results with a control group of mice injected with brain tissue from a person without the disease.
They found all the rodents injected with the dementia brain extracts developed plaques that are associated with the disease, however, the control group experienced no such changes.

Professor Soto said: 'We took a normal mouse model that spontaneously does not develop any brain damage and injected a small amount of Alzheimer's human brain tissue into the animal's brain.
'The mouse developed Alzheimer's over time and it spread to other portions of the brain.'
The team said their findings could have 'broad implications' for understanding the underlying mechanisms that trigger the devastating disease and may help develop ways to prevent and treat it."
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INFECTIOUS PRIONS TRANSMITTED BY BIOAEROSOLS:

Alzheimer's Disease (AD) and sporadic Creutzfeldt Jakob Disease (sCJD) are sister prion diseases, transmissible, infectious by medical equipment, (scopes, etc.) dental and eye

equipment, blood, urine, feces, saliva, mucous (aerosols: possibly by coughs & sneezes - see
"Aerosol and Nasal Transmission of Chronic Wasting Disease in Cervidized Mice
http://vir.sgmjournals.org/cgi/content/short/vir.0.017335-0v1
"These results demonstrate that CWD can be transmitted by aerosol (as well as nasal) exposure and suggest that exposure via the respiratory system merits consideration for prion disease transmission and biosafety.)" and
http://www.es.landesbioscience.com/journals/prion/article/16851/

Commentary
Aerosols: An underestimated vehicle for transmission of prion diseases?
Volume 5, Issue 3 July/August/September 2011

Lothar Stitz and Adriano Aguzzi

View affiliations

We and others have recently reported that prions can be transmitted to mice via aerosols. These reports spurred a lively public discussion on the possible public-health threats represented by prion-containing aerosols. Here we offer our view on the context in which these findings should be placed. On the one hand, the fact that nebulized prions can transmit disease cannot be taken to signify that prions are airborne under natural circumstances. On the other hand, it appears important to underscore the fact that aerosols can originate very easily in a broad variety of experimental and natural environmental conditions. Aerosols are a virtually unavoidable consequence of the handling of fluids; complete prevention of the generation of aerosols is very difficult. While prions have never been found to be transmissible via aerosols under natural conditions, it appears prudent to strive to minimize exposure to potentially prion-infected aerosols whenever the latter may arise – for example in scientific and diagnostic laboratories handling brain matter, cerebrospinal fluids, and other potentially contaminated materials, as well as abattoirs. Equally important is that prion biosafety training be focused on the control of, and protection from, prion-infected aerosols."
http://www.plospathogens.org/article/info:doi/10.1371/journal.ppat.1001257
"We conclude that aerogenic exposure to prions is very efficacious and can lead to direct invasion of neural pathways without an obligatory replicative phase in lymphoid organs. This previously unappreciated risk for airborne prion transmission may warrant re-thinking on prion biosafety guidelines in research and diagnostic laboratories.
"In summary, our results establish aerosols as a surprisingly efficient modality of prion transmission. This novel pathway of prion transmission is not only conceptually relevant for the field of prion research, but also highlights a hitherto unappreciated risk factor for laboratory personnel and personnel of the meat processing industry. In the light of these findings, it may be appropriate to revise current prion-related biosafety guidelines and

health standards in diagnostic and scientific laboratories being potentially confronted with prion infected materials. While we did not investigate whether production of prion aerosols in nature suffices to cause horizontal prion transmission, the finding of prions in biological fluids such as saliva, urine and blood suggests that it may be worth testing this possibility in future studies." (Aguzzi, et al)

Doctors frequently misdiagnose AD and sCJD one for the other. The symptoms and neuropathology are almost identifical.

http://bacteriality.com/2008/05/05/prions/

Dr. Adriano Aguzzi, University Hospital of Zurich:
Inflammation and prions: an important connection
Author: Amy Proal 5 May 2008

"Further research by the team showed that, if inflammation is induced in any excretory organ of the body, prions are excreted in whatever substance the organ excretes. "

Right now the US is in the middle of a raging, always fatal, prion disease epidemic: There are over 6 million victims of AD and 1 million Parkinson's Disease victims, with a new AD case every 69 seconds !

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ALZHEIMER'S DISEASE = sporadic CREUTZFELDT JAKOB DISEASE (sCJD -human form of Mad Cow Disease) = transmissible, infectious sister prion diseases

http://www.inews880.com/Channels/Reg/LocalNews/story.aspx?ID=1568326

Local researchers make important find
3:00pm
Click here to email Scott Johnston
11/8/2011

Medical researchers at the University of Alberta say they have identified an additional link between two brain diseases.

Jack Jhamandas says there's more than first thought in common between Alzheimer's and prion diseases, like Creutzfeldt-Jakob disease, the human form of mad cow disease.
"Our finding appears to support the notion that indeed there may be some commonality between these conditions," Jhamandas says. "One protein that's abnormal in Alzheimer's disease may actually express its effects through another protein that's found in another disease - both affecting the brain, but in different ways."
The findings are being published in the peer-review publication "Journal of Neuroscience." ***(sj, jk)***
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MEDICAL PERSONNEL ARE WARNED ABOUT PRION DISEASE PATHWAYS OF RISK FROM AD and sCJD patients:
prion survival - you cannot clean (inactivate) prions on metals and glass: "

http://memory.ucsf.edu/cjd/sites/all/files/pdf/MAC_RPD_Primer.pdf
It can be even more difficult to inactivate prions that have come into contact with materials such as metal or glass; when feasible, these instruments should be destroyed.
Autoclaves in medicine http://en.wikipedia.org/wiki/Autoclave

A medical autoclave is a device that uses steam to sterilize equipment and other objects. This means that all bacteria, viruses, fungi, and spores are inactivated. However, prions, like those associated with Creutzfeldt-Jakob disease, may not be destroyed by autoclaving at the typical 134 °C for three minutes or 121 °C for 15 minutes
http://whyfiles.org/012mad_cow/3.html
One Heretical Hypothesis
The rise of mad cow has caused an explosion of research into the TSEs (Want The Why Files guide to mad-cow lingo?). The causative agent has some remarkable properties.

It's tiny, able to pass through a filter that stops most viruses.

It's tough, able to survive thermal, radiation and chemical treatments that kill bacteria and viruses.

It's not a nucleic acid. Nucleic acids are the basic component of DNA and RNA, the chemicals that carry life's genetic code. Viruses, bacteria, and just about every other infectious agent contain either DNA or RNA.
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PATHWAYS OF RISK to medical personnel and caregivers OF BOTH AD & sCJD -

UCSF:

http://memory.ucsf.edu/cjd/sites/all/files/pdf/MAC_RPD_Primer.pdf

Transmissibility
Prions, the causative infectious proteins, are resistant to conventional chemical and physical sterilization and decontamination methods. They can usually be denatured or hydrolyzed, however, by soaking contaminated instruments in 1N sodium hydroxide for an hour or more and then autoclaving them in distilled water at 132-134 °C for at least an hour. It can be even more difficult to inactivate prions that have come into contact with materials such as metal or glass; when feasible, these instruments should be destroyed.

Tissue infectivity. The CNS tissues, specifically brain, dura mater, spinalcord and eye are highly infectious. In vCJD, lymphoreticular tissues are also highly infectious. Cerebrospinal fluid (CSF) and several organs outside the CNS (lung, liver, kidney, spleen and placenta) are considered less infectious but should still be treated with caution Only vCJD has been shown to be transmissible by blood transfusion.
A small percentage of cases (less than 5%) are iatrogenic (resulting from the accidental transmission of the causative agent via contaminated surgical equipment or as a result of cornea or dura mater transplants). It has also been shown that CJD can be transmitted to humans as a result of treatment with natural human growth hormone. Replacement of natural human growth hormone by recombinant growth hormone has alleviated this risk.
http://www.who.int/mediacentre/factsheets/fs113/en/

"from human to human. Although transmission from blood in other human prion diseases (not vCJD) has not been shown, there is a theoretical risk; therefore, any exposure with confirmed or suspected prion disease(or with a relative with CJD) must be considered exposure to prion disease."

RETURNING TO UCSF PRIMER ON PRION RISKS, AD AND SCJD:
http://memory.ucsf.edu/cjd/sites/all/files/pdf/MAC_RPD_Primer.pdf

It is not clear how cautious one needs to be in performing nonneurosurgical invasive procedures on patients with prion disease. Most medical centers treat such procedures and equipment with universal precautions. At our center, due to the high number of patients seen with prion disease, we are more cautious with invasive medical procedures. When working or caring for patients with prion disease, casual and even intimate contact is not considered a risk factor. When dealing with bodily fluids and excretions, such as blood, urine or feces, we recommend universal precautions (disposable gloves and disposing of material thatcomes in contact with such fluids). Route of exposure. Human prion diseases are not known to spread bysocial contact, but transmission can occur during invasive medical interventions, exposure to infected human cadaveric-derived pituitary hormones, dural and cornea grafts, and contaminated neurosurgical instruments.

While there is no evidence of occupational transmission of CJD to healthcare workers, it is prudent to be cautious. The highest potential risk is from transcutaneous exposure to high infectivity tissues (CNS) through needle-sticks, puncture wounds,"sharps" injuries, or contamination of broken skin. Exposure by splashing of the mucous membranes (notably the conjunctiva) must also be avoided. Healthcare personnel who work with patients with confirmed or suspected prion disease, or with their tissues, should be appropriately informed about the nature of the hazard and relevant safety procedures. If you experience a needle-stick or laceration:

1. Wash the affected area with 1N sodium hydroxide solution (household bleach) for 2-3 minutes.

2. Rinse well afterwards with soap and water to neutralize the base. Sodium hydroxide is caustic but relatively slow-acting at room temperature and can be removed from skin or clothing by thorough rinsing with water for 15-30 minutes.

• DO NOT use sodium hydroxide or bleach in eyes or mouth, or on any other mucous membrane. For a splash to the eye or mucous membrane exposure, rinse well with saline or tap water.

3. Cover wound with waterproof dressing to prevent secondary contamination.
4. Report your exposure. For more information. Please see the
• UCSF Infection Control Policies and Procedures for Patients with
Suspected or Confirmed Human Prion Disease at
http://infectioncontrol.ucsfmedical
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What is an infectious prion dose?

(1)
http://www.fsis.usda.gov/OPPDE/Comments/03-025IF/03-025IF-634.pdf

PAGE 7 OF 8 - Dr. Linda Detwiler, DVM, Red Bank ,NJ

"Recent results from the attack rate study, which is still in progress, has found that .001 gr of raw infected brain can transit BSE (1 cow out of 15) through the oral route." [WikiAnswers - How many milligrams are in a gram
How milligrams to a gram?] Answer 1 milligram = 1/1000 gram = 0.001 grams 1000 milligrams = 1 gram. ...

(2) http://www.niaid.nih.gov/topics/prion/Pages/detectingPrion.aspx

"The new detection method is extremely sensitive. One lethal dose of a TSE agent is defined as the amount needed to make 50 percent of injected mammals sick. Dr. Caughey's group detected infectious prion protein equal to a tiny percentage, about 3/1000, of a lethal dose. "

PRIONS CAN INCREASE IN INFECTIVITY:
(1) http://www.plospathogens.org/article/info:doi/10.1371/journal.ppat.0030093

"We establish that prions bound to Mte (soil) are orally bioavailable, and that, unexpectedly, binding to Mte significantly enhances disease penetrance and reduces the incubation period relative to unbound agent. Cox proportional hazards modeling revealed that across the doses of TSE agent tested, Mte increased the effective infectious titer by a factor of 680 relative to unbound agent

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Human prions are more infectious than animal prions:

http://jvi.asm.org/cgi/content/short/80/1/322 January 2006

. The inactivation of prions in brain homogenates and those bound to stainless steel wires was evaluated by using bioassays in transgenic mice. sCJD prions were more than 100,000 times more resistant to inactivation than Sc237 prions, demonstrating that inactivation procedures validated on rodent prions cannot be extrapolated to inactivation of human prions. (Dr. Prusiner, et als) "

"Our studies contend that any prion inactivation procedures must be validated by bioassay against the prion strain for which they are intended to be used."

http://www.sciencealert.com.au/news/20091310-19987-2.html October 2009 Australia
The human prion is resistant to both heat and chemicals and is reported to be up to a hundred thousand times more difficult to deactivate than the animal form of infective agent which causes well known diseases in cattle, such as mad cow disease, and scrapie in sheep. (Dr. Victoria Lawson, University of Melbourne, et al)
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ANOTHER significant pathway of risk is America's food supply which is being "fertilized" with prion infected sewage sludge (biosolids). Millions of AD victims are shedding prions in their urine and feces to public sewers. The wastewater treatment process does NOT inactivate prions - particularly human prions. Sewage treatment reconcentrates them in the sewage sludge spread on crops, grazing lands, hay fields, dairy pastures, and home and school vegetable gardens. Livestock and wildlife ingest prions when they eat dirt (and sludge) with their fodder. Prion infected dirt and sludge can cling to vegetables and plants. It is widely known that plants and vegetation uptake sludge pathogens and pollutants. http://www.sludgevictims.com/plants/uptake.html The unanswered question is whether vegetation can uptake and internalize prions from sewage sludge.

EPA NATIONAL WATER RESEARCH COMPENDIUM 2009-2014 lists PRIONS eight times
as an EMERGING CONTAMINANT of concern in sewage sludge "biosolids" , water and manure:
http://www.sludgevictims.com/prions/PRIONS-EPA-EMERGINGCONTAMINANTSINSLUDGEBIO.pdf