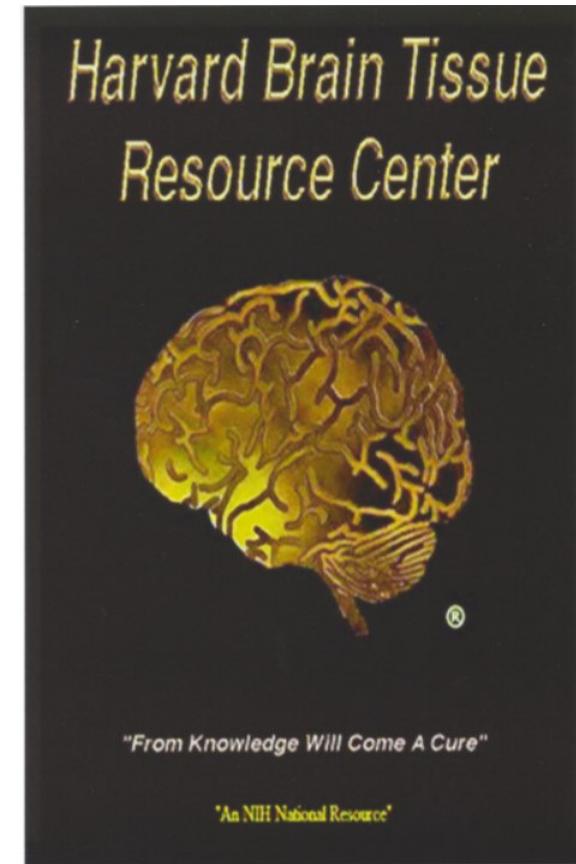
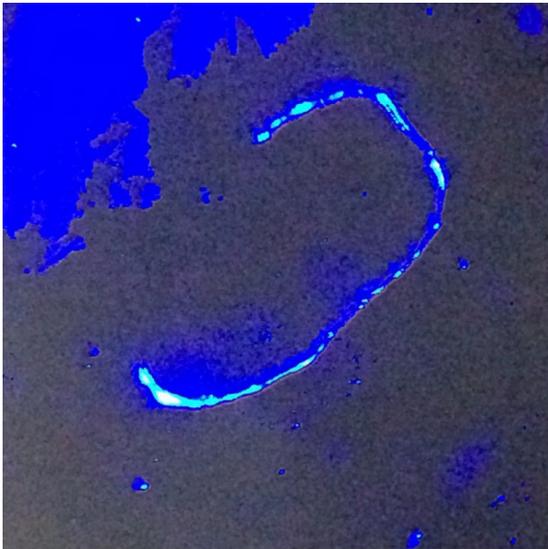


Alzheimer's Disease, Infectious type

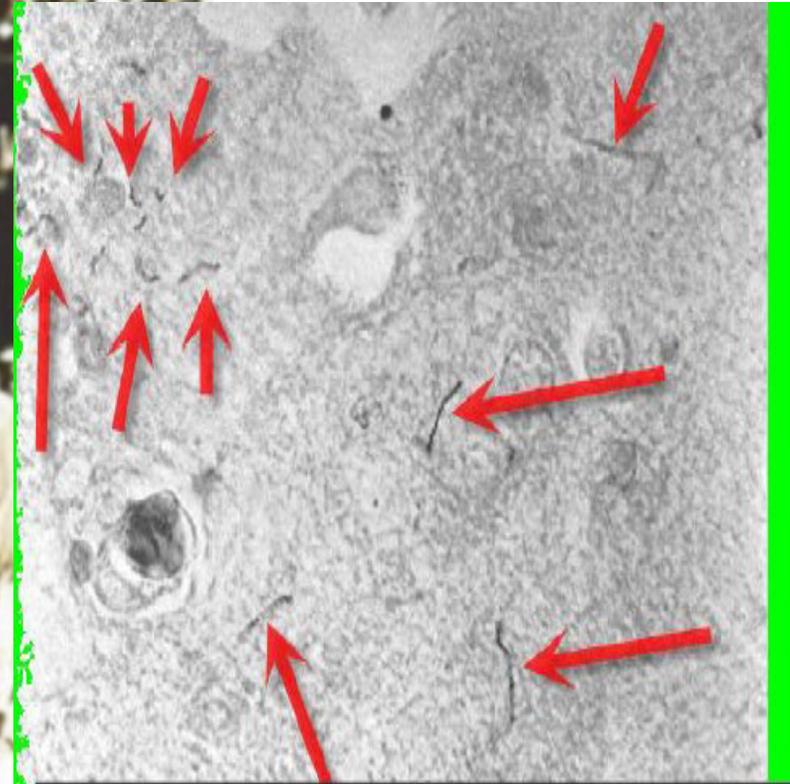
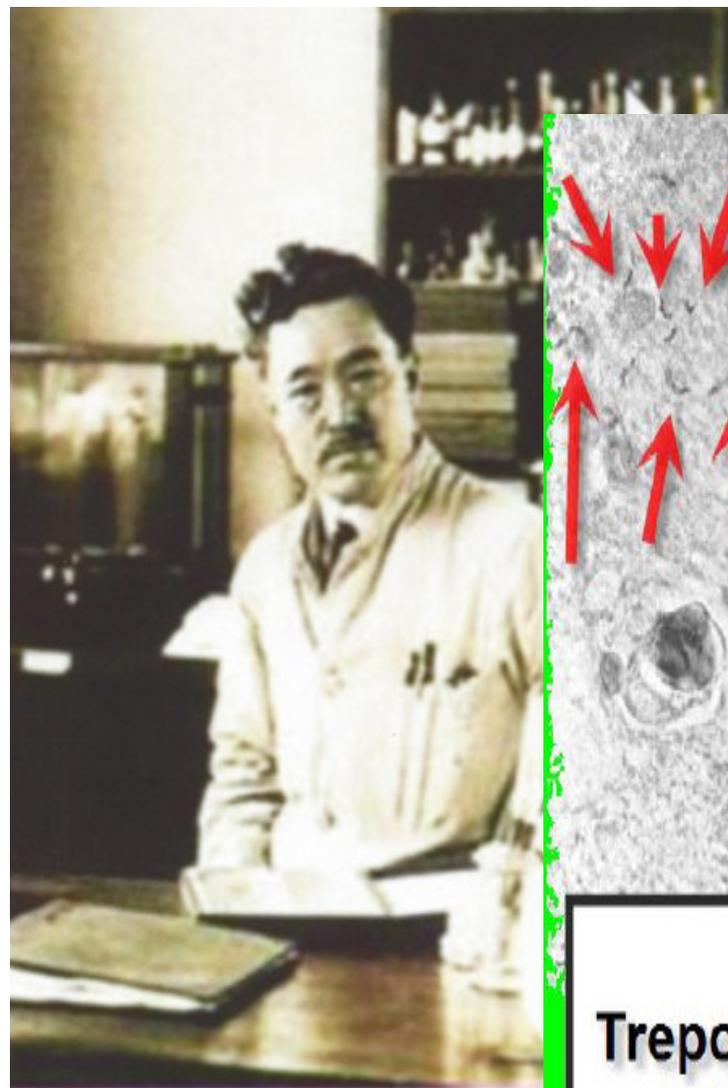
Evidence from Harvard Brain Bank Cases



Alan B. MacDonald, M.D. -November 15, 2015

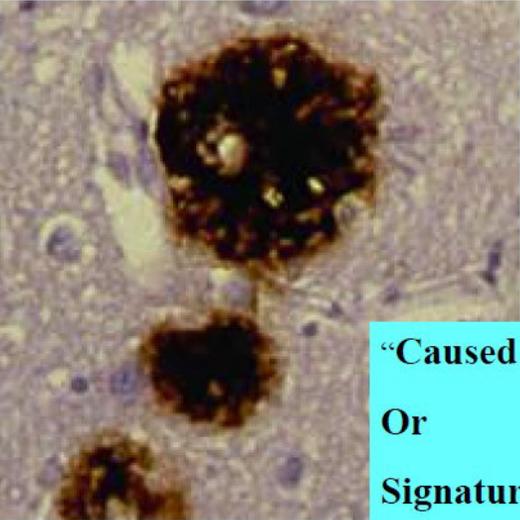
- 1. Comprehend the naissance of the idea that Alzheimer's Disease is the ***Borrelia*** equivalent of:

Dr. Hideyo Noguchi's solution to the etiology of syphilitic Dementia (General Paresis) in very late (Tertiary Syphilis) –
as proven in year 1913



Noguchi 1913
Treponema pallidum in General Paresis autopsy brain

2. Comprehend the historical overview of pathology evidence linking Chronic Deep Brain Borrelia infections with development of future Alzheimer's Disease



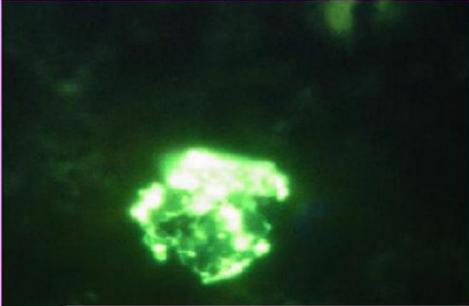
Plaques

“Caused By Amyloid” ???
Or
Signatures of a Microbial
Pathogen??

DNA

in Plaques

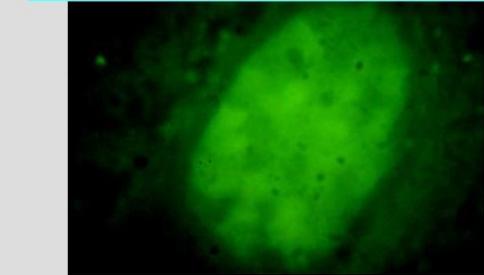
MacDonald 1987
Cyst form H9724 +
Alzheimer Brain



A “water balloon” containing Granules

Monoclonal Antibody for
The Flagellin protein of Borrelia
Developed by Dr Alan Barbour

DNA
Hybridization



3. Comprehend the ancillary research dating from year 1986 :
vis: pure culture of *borrelia* spirochetes from Alzheimer's
Autopsy Fresh Frozen Brain tissues.

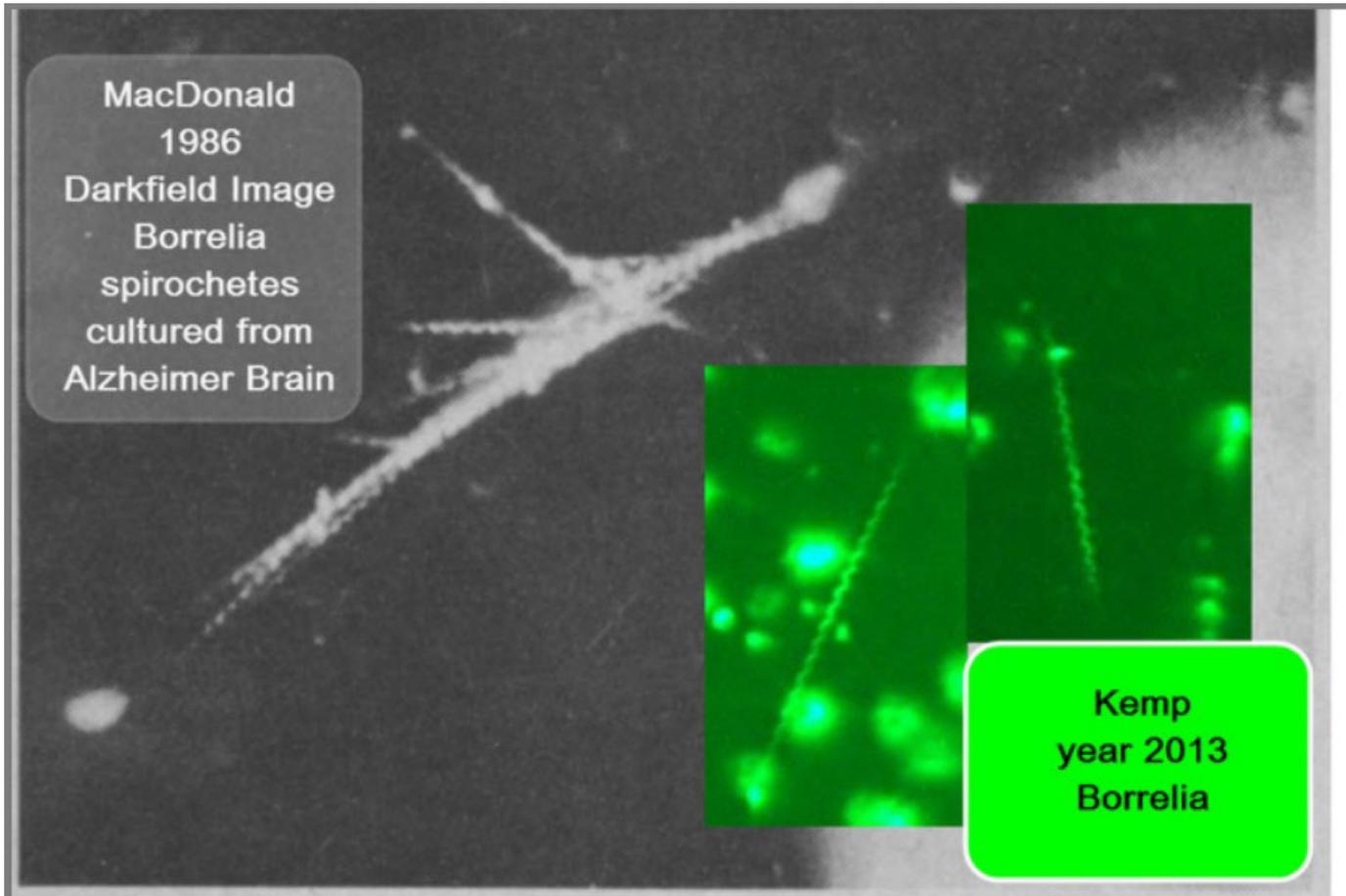


Fig. 4 — Case 1. Spirochetes in subculture

4. Comprehend the evidence for detection of Bacterial cell products in the Alzheimer's Amyloid Plaques by Dr. Judith Miklossy

Beta-amyloid deposition and Alzheimer's type changes induced by Borrelia spirochetes

[Judith Miklossy](#), [Andras Kis](#), [Alexandra Radenovic](#), [Lisa Miller](#), [Laszlo Forro](#), [Ralph Martins](#), [Krzysztof Reiss](#), [Nune Darbinian](#), [Pushpa Darekar](#), [Laszlo Mihaly](#), [Kamel Khalili](#)

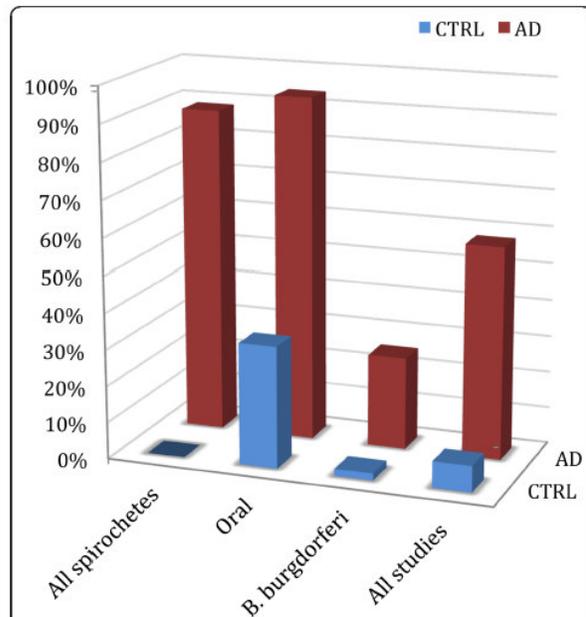


Figure 1 Association of spirochetes with Alzheimer's disease.

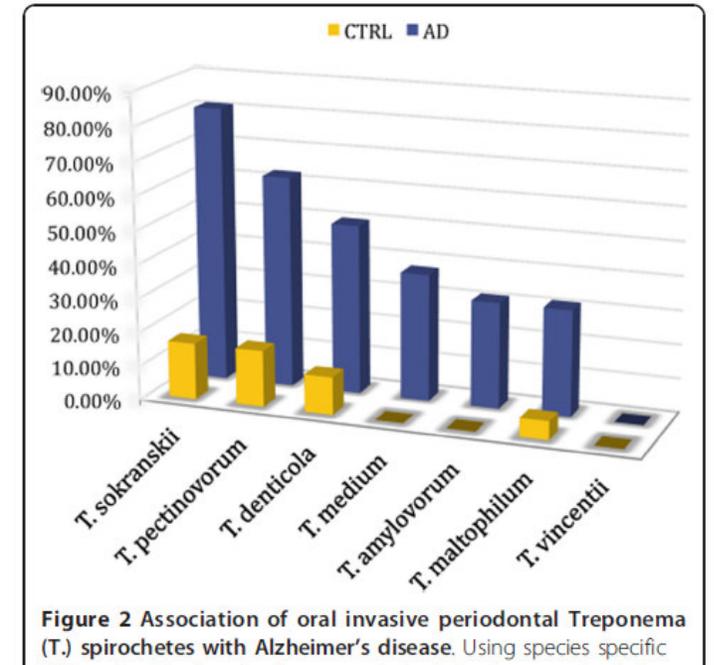


Figure 2 Association of oral invasive periodontal Treponema (T.) spirochetes with Alzheimer's disease. Using species specific

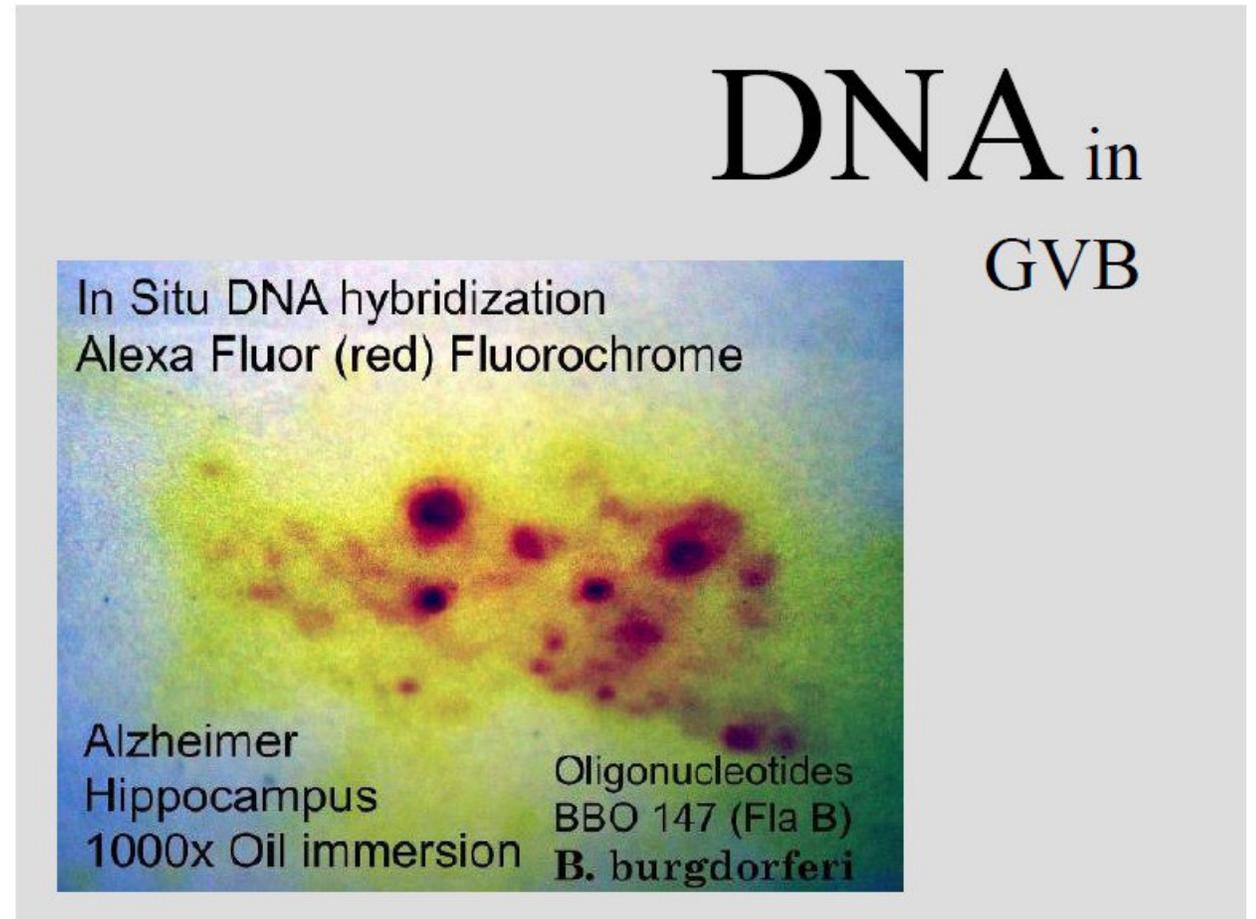
5. Comprehend the evidence for Bacterial produced Amyloid inside of the Amyloid Plaques of Alzheimer's Disease

Beta-amyloid deposition and Alzheimer's type changes induced by *Borrelia spirochetes*

[Judith Mikossy](#) , [Andras Kis](#), [Alexandra Radenovic](#), [Lisa Miller](#), [Laszlo Forro](#), [Ralph Martins](#), [Krzysztof Reiss](#), [Nune Darbinian](#), [Pushpa Darekar](#), [Laszlo Mihaly](#), [Kamel Khalili](#)

host reaction to that occurring in AD could be induced by infectious agents, we **exposed mammalian glial and neuronal cells in vitro to *Borrelia burgdorferi* spirochetes** and to the inflammatory bacterial lipopolysaccharide (LPS). **Morphological changes analogous to the amyloid deposits of AD brain were observed following 2–8 weeks of exposure to the spirochetes.** Increased levels of β -amyloid precursor protein (A β PP) and hyperphosphorylated tau were also detected by Western blots of extracts of cultured cells that had been treated with spirochetes or LPS. These observations indicate that, by exposure to bacteria or to their toxic products, host responses similar in nature to those observed in AD may be induced.

6. Comprehend the linkage Granulo-vacuolar Degeneration products inside of Dying neurons (GVB deposits) by In situ DNA Hybridization using ***Borrelia burgdorferi*** specific Molecular Beacon DNA probes, and also using linear/planar type ***Borrelia*** Flagellin B Dna Probes in Alzheimer's Autopsy Tissues.



7. Review individual Clinical Case studies of Lyme/Borreliosis Dementia which were treated with long term high dose Intravenous antibiotics and which demonstrated objective Return of Dementia patients with Alzheimer's Disease to a normal or much improved Cognitive Status using detailed Neurocognitive Testing of patients before and following Parenteral Antibiotic therapies.

Mr Paul Christensen Alzheimer's at Autopsy
 8 years after Spinal Fluid positive
 for Borrelia burgdorferi Antibodies at SUNY Stony Brook
 School of Medicine

Key points: Infection in Spinal Fluid – Lyme Positive

**Atypical Facial pain at presentation – later
 onset of Normal Pressure Hydrocephalus –**

**Shunt Placement – Shunt Infection – Antibiotics –
 Clinical improvement – Antibiotics discontinued –
 Dementia again develops – Deterioration to Death –
 Alzheimer's Disease at Autopsy**

CERAD criteria satisfied at Medical School SUNY-

**DNA Probes for Flagellin DNA – Positive hybridization
 signals in Alzheimer Plaques**

Fig. 2(a) Schedule use of antibiotics

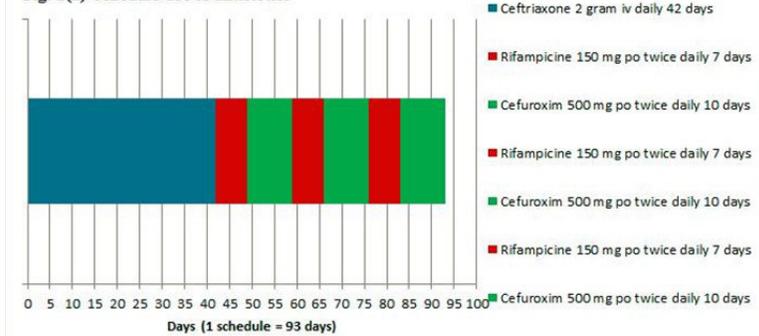
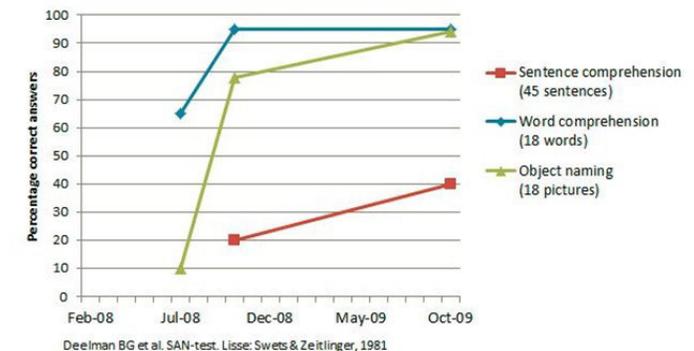


Fig. 2(b) Improvement of aphasy & comprehension during anti-Borreliia therapy



8. Comprehend the Eradication of spirochetal induced dementia due to late Syphilis (General Paresis of the Insane) with High dose Penicillin Therapies after year 1945, and the worldwide eradication of Syphilis Dementias since the end of World War 2, and the release of Penicillin to the civilian physicians who treated Syphilis Dementias with Penicillin.

The Lancet

Volume 292, Issue 7583, 28 December 1968,

Pages 1370–1371

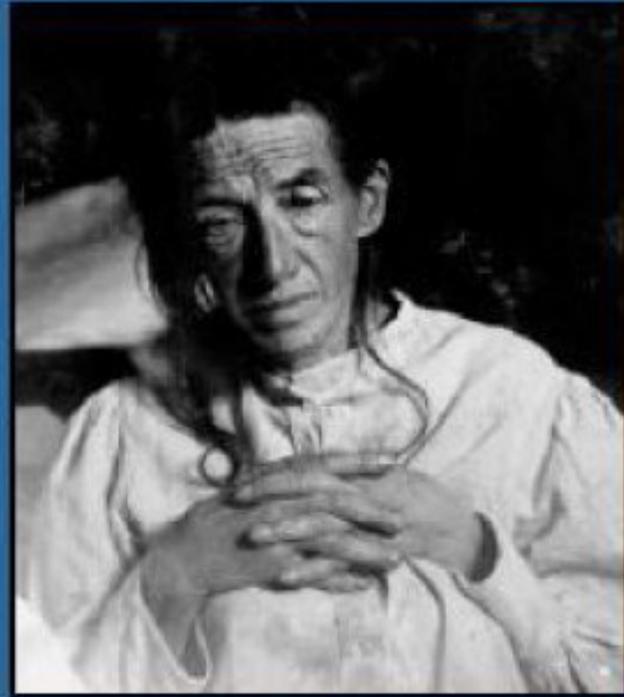
Originally published as Volume 2, Issue 7583

PROGNOSIS OF GENERAL PARESIS AFTER TREATMENT

E Wilner, M.D. George Washington,

J.A Brody, M.D. New York State

Alois Alzheimer



Auguste D. in 1902

An Anecdotal Case Report – Just one !!

Cultures Alzheimer Brain tissue -----**POSITIVE**

Alzheimer Brain tissue – -----**Positive for Borrelia**

Spinal Fluid ----- **Positive for Borrelia Antibodies**

DNA Hybridization – **Positive signals in Specific Brain regions**

Tangles of Alzheimer's Disease – *Infection Connections*

Plaques of Alzheimer's disease –*DNA Probes Borrelia Specific*

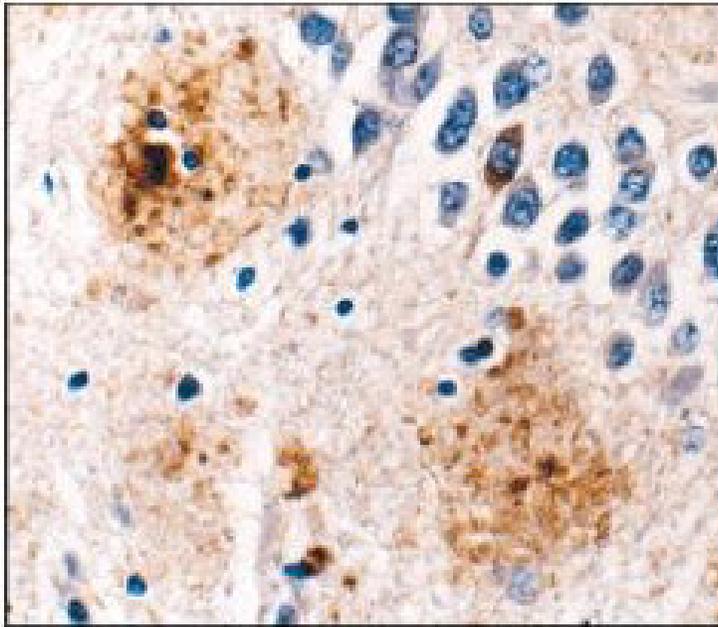
Mutations in Alzheimer's Disease- *Transfection Mechanisms*

Spinal Fluid Testing in Alzheimer's Disease –

Borrelia DNA detection methods

Braak Stages of Alzheimer's Disease-

TransSynaptic spread of Infection in Neural Networks



Neurofibrillary tangle

Normal pyramidal neuron



Figure 1. Amyloid plaques and neurofibrillary tangles at specified densities in sectioned brain tissue constitute the neuropathologic criteria confirming Alzheimer's disease. Here both plaques and tangles appear

Granules vary in size ---little to big

