

24<sup>th</sup> World Congress on

# Dentistry and Oral Health

June 12-13, 2017 London, UK



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### **Spirochetes, Alzheimer's disease and other chronic inflammatory disorders. The importance of periodontal pathogens**

That pathogens suppress, subvert or evade host defenses and establish chronic or latent infection had received little attention in the past. Increasing number of recent observations show the involvement of pathogens in various chronic disorders, including stomach ulcer, atherosclerosis, cardio- and cerebrovascular disorders, diabetes, neurodegenerative disorders, and Alzheimer's disease (AD). Various spirochetes, in an analogous way to *Treponema pallidum*, are involved in the pathogenesis of several chronic disorders including Alzheimer's disease (AD). *Borrelia burgdorferi*, the causative agent of Lyme disease and various periodontal pathogen Treponemes (*T. denticola*, *T. pectinovorum*, *T. amylovorum*, *T. maltophilum*, *T. medium*, *T. socranskii*) persist in the brain and cause dementia and beta amyloid deposition. Spirochetes are able to reproduce *in vitro* and *in vivo* all the pathological and biological hallmarks defining AD. A strong statistically significant association between spirochetes and Alzheimer's disease fulfills Hill's criteria and confirm a causal relationship. Validation of these observations by historic and recent reports further confirm that senile plaques are made up by spirochetes and correspond to biofilms. That host pathogen interactions in chronic spirochetal infection are identical to those occurring in AD indicates that escaping host immune reactions, spirochetes sustain chronic infection and cause dementia and amyloid deposition. Association of co-infecting pathogens and formation of multi-bacterial biofilms further aggravate the degenerative process and the outcome of dementia. These observations indicate that Alzheimer's dementia and other chronic inflammatory disorders might be prevented. The impact on health care and the role of dentistry in prevention is enormous.

### **Biography**

Judith Miklossy received the MD, PhD degrees and Board certificates of Neurology, Psychiatry, Psychotherapy (EU&AELE conform) from the University of Debrecen and National Board of specialization in Hungary and the university degrees PD (DSc), MER and Board certificate in Neuropathology in University of Lausanne and Swiss Medical Federation in Switzerland. She headed the Neurodegeneration research group in the University Institute of Pathology in Lausanne and was head of neuropathology laboratory (Kinsmen Laboratory of Neurological Research, British Columbia University, Vancouver, Canada). She is founder and presently Director of the Alzheimer's Prevention International Foundation, International Alzheimer Research Center, Switzerland.

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