The VDR Nuclear Receptor is Key to Understanding 'Diseases of the Aging'

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In 2006 we reported routinely inducing recovery from chronic inflammatory disease, including 'autoimmune' syndromes[1]. In 2008 we additionally reported inducing recovery from chromic neurological disease, including neuropathies, cognitive and memory deficiencies, depression, Bipolar and Obsessive Compulsive Disorders[2]. These chronic diseases are all caused by an intraphagocytic biofilm-like metagenomic microbiota which has apparently been part of the human experience since Neolithic times, but which, due to changes in lifestyle and medicine during the 20th century, has expanded into epidemic prominence over the last three decades. Located in the phagocyte cytoplasm, this microbiota has direct access to both the transcription and translation machinery of *Homo sapiens*. We have demonstrated that the intraphagocytic pathogens have evolved a survival mechanism whereby VDR transcription is inhibited[3,4]. Transcription of a minimum 913 genes is thus directly affected by the pathogens, notably including MTSS1. Life Extension research can derive much from our observations on this cohort, as they transition to recovery. Firstly, we now have objective data showing that chronic organ damage, including fibrotic tissue deposition, can be reversed, even in patients who are beyond middle-age. Further, we have shown that neurological damage can be reversed, and that neurological recovery appears complete. After recovery, patients are left re-invigorated, and report levels of cognition and memory often described as "feeling 20 years younger." Recovery is induced by activation of the VDR Nuclear Receptor with Olmesartan, an agonist, and long-term (3-6 years) administration of low-dose sub-inhibitory antibiotics which target protein synthesis by the bacterial 70S ribosome. Aging-related diagnoses already shown to be reversible include: osteoporosis, periodontal disease, uveitis, arthritis, hypertension and cardiovascular disease. It should be noted that as the pathogens are killed, the infected cells often undergo apoptosis. This immunopathology manifests itself as an exacerbation of symptoms, and can make the patient quite ill. It is therefore important to start therapy early. A small German pilot study in Dementia had to be terminated, even though the subjects were responding to therapy as expected, because subjects were too ill to rationalize what they were experiencing. We propose that further studies of individuals recovering from chronic illness will quickly yield insight into not only the ***diseases*** of the aging, but also into the ***processes*** of aging.

1. Marshall TG: VDR Nuclear Receptor Competence is the Key to Recovery from Chronic Inflammatory and Autoimmune Disease. Abstract presentation, *Days of Molecular Medicine,* Karolinska Institutet, Stockholm, May 2006.
Copy available from URL http://autoimmunityresearch.org/karolinska-handout.pdf

2. Marshall TG: VDR Nuclear Receptor is key to Recovery from Cognitive Dysfunction. Abstract presentation, *Days of Molecular Medicine,* Karolinska Institutet, Stockholm, April 2008.
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3. Marshall TG: Bacterial Capnine Blocks Transcription of Human Antimicrobial Peptides. Abstract presentation, *Metagenomics 2007*, San Diego, July 11-13, 2007.
Available from URL http://autoimmunityresearch.org/transcripts/metagenomics2007pdf

4. Marshall TG: Vitamin D discovery outpaces FDA decision making. *Bioessays*. 2008 Feb;30(2):173-82. Preprint available at http://TrevorMarshall.com/BioEssays-Feb08-Marshall-Preprint.pdf

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