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Defining the dual citizenship with our micro-biota in disease and health using our microbial clock: The good, the bad and the ugly

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Tational and International studies in 2007/8 unmasked the hidden microbial world of Homo sapiens and the partnering of N prokaryotes and eukaryotes, coining the new term "Super Organism". Additional studies highlighted the importance of this balance ("dual citizenship") in disease and health. Recognizing the occurrence of human disease overtime, we constructed a "Microbial Clock", keyed to age and diseases, focusing on organisms associated with these selected diseases highlighting an ageing population, often tumor associated. 10 targeted chronic diseases were selected by economic impact, potential management, infectious disease partnering and age of occurrence. The "microbial clock" was arbitrarily divided into 4 quadrants associated with 4 age groups (0-12yr with a subset of new born; 12-18yr, adolescent; 19-55yr, adult; 56 yr and older, aged, recognized by color and potential consequences targeted diseases could be grouped by age, studying population dynamics, emphasizing the percentage of population at risk; diseases highlighted autism and asthma, diabetes and obesity selected tumors/cancers and Dementia. Shifts in microbial populations could be correspondingly overlaid to these age groups, creating a 4 quad "microbial clock", emphasizing a potential partnering of 26 microbes representing all phyla 6, age and disease in 4 distinct color zones. An example was F. nucleatum, which over the 4 time zones changed from normal flora (Green) to distinct dental pathogen (Orange) to tumor stimulator in colorectal-cancer (Red), highlighting it possible role in tumor genesis in the aged. Selected microbial populations were unbalanced in selected diseases and could pose a unique target and marker in disease progression (bio-marker), highlighting a microbial pathogenecity /trigger and use of ecofriendly "restorative microbiology" (Probiotics) in management, matched to age. The orange and red zone unmasked the potential mutagenesis and tumor marker for selected microbes and the migratory nature of oral micro-biota.

Biography

John G Thomas is recognized as an "International Educator and Global Microbiologist"; being lectured in more than 43 countries whiles a Clinical Microbiologist in Pathology, Dentistry and Medicine for 51 years. His research emphasizes bio-films and medical devices including endotrachs and the connection between oral diseases, VAP and wound infections ("Intellectual Design") with the recent integration of micro 3-D- bio printing using bio-plastics and unique prebiotics (Therapeutic Bacteria) for intervention. He has over 50 publications, multiple book chapters, significant grant support, pending patents and over 100 posters/abstracts at national and international meetings. His sabbatical at Cardiff University, Wales, UK (2007) was a driving influence. He has been a member of the ADA Scientific Advisory Committee for the last 8years. As Faculty at 6 Universities during his career, he has received Alumni and University awards for research and International Student Mentoring; retiring from WVU in 2013 after 23 years as Professor Emeritus, he presently is expanding his research/teaching utilizing the advanced resources of the Allegheny Health Network in Pittsburgh, PA, Carnegie–Mellon University and Mass. Gen. Hospital, Boston, MA.

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