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Chronic wound intervention with contour-fitting probiotic gauze: Re-establishing the beneficial microbial library within**John G Thomas**

International Educator and Global Microbiologist, USA

Chronic wounds affect 6.5 million patients at an annual cost of US \$25 billion, focusing on a growing, aging population polarized with antibiotic resistance. We have investigated/reported on our use of eco-friendly skin probiotics with a multi-tiered *in vitro* approach integrating: 1) Disruption: Reconstruction; 2) tissue engineering via a SMarT Gauze, 3) contoured to wound 3-D dimensions, while selecting 4) 4 pools of probiotics targeted against common wound pathogens. The recent emergence of the hologenomic Theory of co-evolution catalyzed our theme of dual citizenship and the dual role of re-establishing the skin microbiota and library as a 1) biologic and 2) antimicrobial barrier via restorative microbiology, facilitated by selection using a unique computer supported decision tree analysis (Bac-2-Health) www.globalbugs.com. (Probiotic Solutions), recently enhanced for wounds and aging, an interesting intersection (Partners-4-Life). Here, we expand our wound focus, targeting the elimination of wound gauze colonization (Ping- Pong Hypothesis) which provides a biofilm reservoir for re-inoculation of the wound bed via planktonic metastasis, disruption, while re-establishing the healthy skin architecture reconstruction focusing on fungal pathogenicity. Secondly, we have characterized features of beneficial probiotics as featured in published literature, addressing potential designer, intelligent probiotics as therapeutic bacteria, highlighting a beneficial biofilm based on literature review and our evaluations, perhaps administered simultaneously, GUT and skin, recognizing the dual axial brain link. Our strategy is to implement the 4 Es: ecologically sound, environmentally friendly, engineered intelligently and economically feasible.

Biography

John G Thomas is recognized as an "International Educator and Global Microbiologist"; being lectured in more than 43 countries while 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 8 years. 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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