

BIOGRAPHICAL SKETCH

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NAME: Raj, Tony D. S.

eRA COMMONS USER NAME (credential, e.g., agency login): tonyraj

POSITION TITLE: Dean, St. John's Research Institute (SJRI) | Professor of Physiology, St John's Medical College | Head, Division of Medical Informatics (SJRI) | Director, St Johns Health Innovation Foundation

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
St John's Medical College, Bangalore, India	MBBS	10/1993	Medicine
St John's Medical College, Bangalore, India	MD	10/1997	Physiology
London School of Hygiene and Tropical Medicine, London, UK	Fellowship	06/2002	Health Informatics

A. Personal Statement

I'm a Physician by training and have completed my post-graduation in Human Physiology. In my current roles, I'm involved in teaching and mentoring undergraduates and postgraduates, research, health innovation and research administration. My early career research work focused on metabolic physiology, nutrition and clinical trials where I've contributed to understanding essential amino acids requirements in adults and Insulin sensitivity in Indians. My current research interests are in Digital Health Interventions and Health Informatics research where I'm interested to evaluate the use of Digital Health Technologies in medical education, healthcare delivery and healthcare research. My earlier work as part of an NIH funded collaborative study was the use of e-learning and mhealth technology to study the intervention in HIV stigma and discrimination from student nurses and ward staff towards people living with HIV. I have worked in this area of Medical Informatics for over 20 years and have been responsible for setting up the Information and Communication Technology (ICT) infrastructure at St. John's. I have been on the advisory working group for the Ministry of Health, Government of India to architect the National Health Portal and have served as a member of the Content advisory committee for the health portal. More recently as the Dean of St. John's Research Institute, I've been interested in initiating research mentorship awareness and activities at St. John's in close collaboration with the University of California's Global Health Institute and the GloCal fellowship program. I've have served initially as a steering committee member from 2013 – 2016 and currently as a member of the leadership group of the GloCal fellowship program for 8 years. I can provide mentorship and guidance in the areas that are associated with digital health, Health Technology Innovations, mHealth, public health informatics and Clinical Informatics. I was a co-investigator to the NIH R21 grant titled "Mobile Mental Health in Community-Based Organizations: A Stepped Care Approach to Women's Mental Health. In this study, we developed and tested the feasibility of deploying a mobile-based app - Multi user Interactive Health Response Application (MITHRA) in community-based organizations (CBOs) in rural India to screen, track, and treat depression using a stepped care algorithm in order to address the treatment-gap in LMIC, especially focusing on mild to moderate depression. In summary, I have the expertise, leadership, training, experience, and motivation necessary to successfully support and carry out the proposed grant objectives.

Ongoing and recently completed projects that I would like to highlight include:

GODFT5420-2021
Raj, T (PI)

03/03/2021-03/02/2024 Beth Israel Deaconess Medical Center – Harvard University | Dell Incorporation
Evaluation and Optimization of the NCD Screening and Management tool – A three arm quasi-experimental
study in selected Talukas of Karnataka.

23610/R0

Raj, T (PI)

07/09/2019-07/08/2024 International Atomic Energy Agency, UN, Vienna

Accurate estimation of changes in body composition. energy balance and nutritional status of Indian children
with acute Lymphoblastic Leukemia during cancer treatment.

1R21MH124073

Bhat, Amritha Subray (PI) Role: CO-I National Institute of Mental Health (NIMH)

06/07/2021-06/06/2024

Mobile Mental Health in Community-Based Organizations: A Stepped Care Approach to Women's Mental
Health.

D43TW009343

Craig, C (PI) Role: CO-I National Institutes of Health – Fogarty

07/01/2021—06/30/2027

University of California Launching Future Leaders in Global Health Research Training Program.

Citations:

1. Ramakrishnan G, Unni US, **Raj T**, Thomas T, Vaz M, Kurpad AV. A pilot study on hyperinsulinaemic euglycaemic clamp based insulin sensitivity in young adult Indian males with low body mass index. Indian J Med Res. 2009 Apr;129(4):409-17. PubMed PMID: 19535836.
2. Radhakrishna K, Goud BR, Kasthuri A, Waghmare A, **Raj T**. Electronic health records and information portability: a pilot study in a rural primary healthcare center in India. Perspect Health Inf Manag. 2014;11:1b. eCollection 2014. PubMed PMID: 25214819; PubMed Central PMCID: PMC4142510.
3. Lescano AG, Cohen CR, **Raj T**, Rispel L, Garcia PJ, Zunt JR, Hamer DH, Heimbürger DC, Chi BH, Ko AI, Bukusi EA. Strengthening Mentoring in Low- and Middle-Income Countries to Advance Global Health Research: An Overview. Am J Trop Med Hyg. 2019 Jan;100(1_Suppl):3-8. doi: 10.4269/ajtmh.18-0556. Review. PubMed PMID: 30430982; PubMed Central PMCID: PMC6329352.
4. Bhat A, Goud BR, Kalidindi B, Ruben JP, Devadass D, Waghmare A, Collins PY, **Raj T**, Srinivasan K. Mobile Mental Health in Women's Community-Based Organizations: Protocol for a Pilot Randomized Controlled Trial. JMIR Res Protoc. 2023 Feb 8;12:e42919. doi: 10.2196/42919. PMID: 36753310;

B. Positions, Scientific Appointments, and Honors

Positions and Scientific Appointments

2021 – Present	Member of the Steering Committee, NASSCOM Centre of Excellence IoT & AI
2019 – Present	Member of the Scientific Advisory Board, Pushpagiri Medical College, Kerala
2018 – 2020	Member of the Scientific Advisory Board, Jawarlal Nehru Institute of Post Graduate Medical Education and Research, Tamil Nadu.
2018 – Present	Chairman, Institute Biosafety Committee (IBSC), St. John's Research Institute.
2018 – Present	Director. St. John's Health Innovation Foundation.
2017 – 2022	Member of the Scientific Advisory Board, Ramaiah Medical College, Bangalore.
2017 – Present	Dean, St. John's Research Institute
2016 – Present	Advisor, International Finance Corporation (World Bank Group), Techemerge, Health Technology Innovation program.

2016 – Present	Leadership Group Member, GloCal Health Fellowships, University of California- Global Health Institute.
2013 – Present	Adaptation Editor, Guyton & Hall: Textbook of Medical Physiology – A South Asian Edition
2013 – 2018	Advisor, Content Advisory Committee (CAC), National Health Portal, Ministry of Health and Family Welfare, Government of India.
2013 – 2016	Steering Committee Member, GloCal Health Fellowships, University of California- Global Health Institute.
2011 – 2016	Vice Dean, St. John's Research Institute.
2010 – 2015	Head, Department of Information Technology, St. John's Medical College Hospital.
2007 – Present	Professor, Department of Physiology, St John's Medical College, India
2003 – Present	Head, Division of Medical Informatics, St. John's Research Institute, India
2003 – 2007	Associate Professor, Department of Physiology, St John's Medical College, India.
2002	Fellowship in Health Informatics, London School of Hygiene and Tropical Medicine, University of London, UK.
1999 – 2003	Assistant Professor, Department of Physiology, St John's Medical College, India.
1998 – 1999	Lecturer, Department of Physiology, St John's Medical College, India.
1995 – 1998	Tutor, Department of Physiology, St John's Medical College, India.
1993 – 1994	Clinical rotating internship, St John's Medical College Hospital, India.

C. Contributions to Science

1. My earlier work in metabolic physiology was focused on determining the essential amino acid requirement in healthy human subjects as the earlier published figures by the FAO/WHO were based on older methods. I was involved in studies that used a different approach using stable isotopes techniques to determine amino acid oxidation. This work along with other similar studies helped in re-establishing the essential amino acid requirements in young adults. I served as a co-investigator in all these studies.
 - a. Kurpad, A. V., **Raj, T.**, El-Khoury, A., Beaumier, L., Kuriyan, R., Srivatsa, A., Borgonha, S., Selvaraj, A., Regan, M. M., & Young, V. R. (2001) Lysine requirements of healthy adult Indian subjects, measured by an indicator amino acid balance technique. *Am J Clin Nutr* 73: 900-907.
 - b. Kurpad, A. V., **Raj, T.**, Regan, M. M., Vasudevan, J., Caszo, B., Nazareth, D., Gnanou, J., & Young, V. R. (2002) Threonine requirements of healthy Indian men, measured by a 24-h indicator amino acid oxidation and balance technique. *Am J Clin Nutr* 76: 789-797.
 - c. Kurpad, A. V., Regan, M. M., **Raj, T.**, & Gnanou, J. V. (2006) Branched-chain amino acid requirements in healthy adult human subjects. *J Nutr* 136: 256S-263S.
2. While working in metabolic physiology, I was interested to understand the pathophysiology of diabetes mellitus and was keen to measure insulin sensitivity in Indians. I was involved in setting up and performing studies that measured insulin sensitivity in human subjects using the hyperinsulinemic euglycemic clamp method. I've served as a co-investigator in all these studies
 - a. Chaya MS, Ramakrishnan G, Shastry S, Kishore RP, Nagendra H, Nagarathna R, **Raj T**, Thomas T, Vaz M, Kurpad A.V. (2008) Insulin sensitivity and cardiac autonomic function in young male practitioners of yoga. *Natl Med J India*;21(5):217-21.
 - b. Ramakrishnan G, Unni US, **Raj T**, Thomas T, Vaz M, Kurpad A.V. (2009) A pilot study on hyperinsulinaemic euglycaemic clamp based insulin sensitivity in young adult Indian males with low body mass index. *Indian J Med Res.*129(4):409-17.
 - c. Unni US, Ramakrishnan G, **Raj T**, Kishore RP, Thomas T, Vaz M, Kurpad AV (2009). Muscle mass and functional correlates of insulin sensitivity in lean young Indian men. *Eur J Clin Nutr.* 63(10):1206-12. Epub 2009 May

- d. Vaz M, Sucharita S, Srivatsa DV, Unni US, **Raj T**, Kurpad AV (2010) Cardiac autonomic responses to hyperinsulinemia are associated with skeletal muscle function in healthy human subjects. *Auton Neurosci.* Jan 15;152(1-2):96-100. Epub 2009 Nov 2
3. My interest in digital health began in the late 90's and this interest led me to complete a Fellowship in Health Informatics at the London School of Tropical Medicine and Hygiene in 2002. Subsequently, on my return to India, I was invited to start the Division of Medical Informatics in the year 2003 at the Research Institute. I have worked in the area of Medical Informatics for over 20 years and have been responsible for setting up the Information and Communication Technology (ICT) infrastructure at St. John's as the Head of Information Technology between 2010 to 2015. I have been on the advisory working group for the Ministry of Health, Government of India to architect the National Health Portal and have served as a member of the Content advisory committee for the health portal. In these 20 years, I have helped develop several digital solutions, mHealth applications and research databases as well as innovative digital health platforms within St. John's. My core interest area in digital health has been to explore innovative interventions and Health Informatics research and promote the use of Health Technologies in medical education, healthcare delivery and healthcare research to ultimately provide affordable, accurate and accessible care in resource constrained settings. I've served as an advisor, co-investigator and mentor in all these studies.
 - a. Shet A, Arumugam K, Rodrigues R, Rajagopalan N, Shubha K, **Raj T**, D'souza G, De Costa A. Designing a mobile phone-based intervention to promote adherence to antiretroviral therapy in South India. *AIDS Behav.* 2010 Jun;14(3):716-20. doi: 10.1007/s10461-009-9658-3. PubMed PMID: 20054634.
 - b. Radhakrishna K, Waghmare A, Ekstrand M, **Raj T**, Selvam S, Sreerama SM, Sampath S. Real-time feedback for improving compliance to hand sanitization among healthcare workers in an open layout ICU using radiofrequency identification. *J Med Syst.* 2015 Jun;39(6):68. doi: 10.1007/s10916-015-0251-1. Epub 2015 May 10. PubMed PMID: 25957165; PubMed Central PMCID: PMC4545832.
 - c. Joglekar A, Rawat A, Rajaraman V, Amrutur B, Mony P, Thankachan P, **Raj T**, Rao S. A Wearable Sensor for Monitoring Kangaroo Mother Care Treatment for Premature Neonates. 2018 IEEE Sensors Proceedings. *IEEE Sensors 2018*; 2018 October 28; New Delhi, India. IEEE; c2018.
 - d. Bhat A, Goud BR, Kalidindi B, Ruben JP, Devadass D, Waghmare A, Collins PY, **Raj T**, Srinivasan K. Mobile Mental Health in Women's Community-Based Organizations: Protocol for a Pilot Randomized Controlled Trial. *JMIR Res Protoc.* 2023 Feb 8;12:e42919. doi: 10.2196/42919. PubMed PMID: 36753310; PubMed Central PMCID: PMC9947759.
 4. In addition to my core interest in Digital Health interventions and Health Informatics, more recently I've been interested to promote research mentorship in LMIC's and in St. John's. I've worked closely with University of California's Global Health Institute and have recently published a few manuscripts in a supplement for mentorship in LMIC's.
 - a. Gandhi M, **Raj T**, Fernandez R, Rispel L, Nxumalo N, Lescano AG, Bukusi EA, Mmbaga BT, Heimburger DC, Cohen CR (2019). Mentoring the Mentors: Implementation and Evaluation of Four Fogarty-Sponsored Mentoring Training Workshops in Low-and Middle-Income Countries. *Am J Trop Med Hyg.* 2019 Jan;100(1_Suppl):20-28.
 - b. Chi BH, Belizan JM, Blas MM, Chuang A, Wilson MD, Chibwesha CJ, Farquhar C, Cohen CR, **Raj T** (2019) Evaluating Academic Mentorship Programs in Low- and Middle-Income Country Institutions: Proposed Framework and Metrics. *Am J Trop Med Hyg.* 2019 Jan;100(1_Suppl):36-41.
 - c. Noormahomed E, Williams P, Lescano AG, **Raj T**, Bukusi EA, Schooley RT, Cohen CR (2019). The Evolution of Mentorship Capacity Development in Low- and Middle-Income Countries: Case Studies from Peru, Kenya, India, and Mozambique. *Am J Trop Med Hyg.* 2019 Jan;100(1_Suppl):29-35.

Complete List of Published Work in MyBibliography:

<https://www.ncbi.nlm.nih.gov/myncbi/123wqOO-819k-/bibliography/public/>