

Meet the Legend**Padma Shri Dr. V. Mohan**
Interviewer: Prof Subir Kumar Das

Renowned diabetologist, Padma Shri Dr. V. Mohan is the Chairman and Chief of Diabetology at Dr. Mohan's Diabetes Specialities Centre, which is an International Diabetes Federation (IDF) Centre of Education and an IDF Centre of Excellence in Diabetes Care. He has started several training courses for diabetes. His rural diabetology service with a fully equipped mobile diabetes van and satellite connection with the initial support of the World Diabetes Foundation (WDF), Denmark, and the Indian Space Research Organization (ISRO) and the National Agro Foundation (NAF), have screened a large number of population in south India and provided free diabetes treatment to hundreds of patients through this service. He is also the President and Director of the Madras Diabetes Research Foundation in Chennai which is an ICMR Center for Advanced Research on Diabetes. Dr V. Mohan candidly shared his thoughts with Prof. Subir Kumar Das.

SKD: Please tell us about yourself?

VM: I am Chairman and Chief Diabetologist of Dr.Mohan's Diabetes Specialities Centre and President and Director of the Madras Diabetes Research Foundation. I was also

the Past President of the Research Society of Study of Diabetes in India (RSSDI), India's national diabetes society.

SKD: What inspired you to take up Medicine as a career?

VM: My father, Prof.M.Viswanathan was one of the first full time Diabetologists of India and is fondly referred to as 'Father of Diabetology in India'. He set up the first diabetic clinic in independent India at the Stanley Medical College and Hospital as early as 1948. When he left the Stanley Medical College and Hospital in the year 1970, he persuaded me to take up medicine so that he could continue his work in the field of diabetes in the private sector. Initially, I wanted to take up English literature and become a writer and a poet, but after my father's request, I changed my plans and decided to take up medicine. Since the whole idea was to help him in his work on diabetes, he and I both agreed that we should not waste time. Hence right from my first MBBS days, i.e. when I was doing Anatomy, Physiology and Biochemistry, I have been working in the field of diabetes, i.e. for almost 48 years now.

Department of Biochemistry, College of
Medicine & JNM Hospital, WBUHS, Kalyani,
Nadia, West Bengal

✉ email: drsubirkdas@gmail.com

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SKD: Please mention those who have influenced your life?

VM: A number of people have influenced my life in many ways. The first of course, is my father, Prof. M. Viswanathan, who was my mentor. Without him, I would not have taken up medicine or come into the field of diabetes.

The second was my wife, Dr. Rema Mohan, who also happened to be my classmate at the Madras Medical College. She was a very strong-willed person and helped me in no small measure to achieve all my dreams. After 20 years of working with my father, in 1991 my wife and I left, almost empty handed, to start our own independent career. It was at this time that my wife stood as a pillar of support to me. Around this time, we both became devotees of Bhagawan Sri Sathya Sai Baba of Puttaparthi and He had a tremendous influence on both our lives. It was He who taught us the eight golden words, "Love All, Serve All, Help Ever, Hurt Never" which were to become the guiding principles of our life. I was subsequently appointed by Bhagawan Baba as a Member of the Sri Sathya Sai Trust in Tamil Nadu. Later, I was elevated as a member of the Board of Trustees of the Sri Sathya Sai Central Trust at Prasanthi Nilayam, Puttaparthi, the highest body in the Sri Sathya Sai Organisation & Trusts.

Apart from these three people, there are many others in the profession and outside, who have had a great influence on me. To mention some, Dr.S.S.Badrinath, Chairman of Sankara Nethralaya, Dr.G. Venkataswamy, Founder of the Aravind Eyecare and Hospitals and Dr. K. Anji Reddy, Chairman of Dr. Reddy's Laboratories, were all a great source of inspiration to me.

SKD: Tell us your important achievements.

Ans: It is difficult and embarrassing for someone to talk about one's own

achievements. Moreover, in my case, I think it was all due to the circumstances that I was placed in, that I was able to achieve so much. Most doctors may not have had the good fortune like I did. My very early start in life working with my father from the age of 18 in a medical specialty (Diabetology), gave me precocious start and took me far ahead of my peers. This helped me not only to learn the subject of Diabetology well, but also, later, establish the largest chain of diabetes centres in the world. Currently we have 48 diabetes centres in 30 cities and in 8 states of India with over 500,000 registered diabetic patients.

I also set up the Madras Diabetes Research Foundation (MDRF) in a single room which has grown to become the largest standalone diabetes research centre in Asia with three separate campuses. We also established Dr.Mohan's Diabetes Education Academy which is a large education academy offering various courses for doctors and paramedical specialists in diabetology and associated sub specialities. Finally, I also run a series of charitable diabetes clinics which offer free diabetes care on a lifelong basis, to thousands of poor patients.

My early start in my research career has helped me to contribute quite significantly in the field of medical research in general and diabetology in particular. Over the last 48 years, I have published a total of 1350 research articles or chapters in text books which have received over 139,000 citations and has a h-index of 139, which I understand is the highest by any medical doctor in India. Recently, I was also very humbled when Stanford University, California ranked me among the top 0.4% of scientists in the world in the speciality of Endocrinology and Metabolism and also No.1 in the country, in this field.

SKD: What are important achievements from your research team?

VM: I am blessed to have a multidisciplinary research team which

works on different aspects of research. Firstly, we have a large clinical team which does various clinical trials related to diabetes. Secondly, the epidemiology department has been growing from strength to strength. Starting with the initial, small, CUPS study (n=1500 individuals) in two parts of Chennai, then to the Chennai Urban Rural Epidemiology Study (CURES) (n=26000 individuals) covering the whole of Chennai and to the ICMR INDIAB study, the largest epidemiological study on diabetes, studying the whole of India (n=124,000 individuals) and finally to the world's largest epidemiological study PURE study (in which we are an important collaborator) which has nearly 200,000 participants from 25 countries.

Based on our Epidemiological research, we have described the Indian Diabetes Risk Score which helps to cost effectively screen for diabetes in our community.

In the area of Genomics, we have been working on the genomics of type 2 diabetes and more recently on the genomics of monogenic forms of diabetes like the Maturity Onset Diabetes of the Young (MODY) and Neonatal Diabetes. We have been recognised as an ICMR Centre for Advanced Research in Diabetes.

Other areas of our research include, Food and Nutrition Research and basic aspects of diabetes including biomarkers, diabetic retinopathy, diabetes and the heart and Fibrocalculus Pancreatic Diabetes (FCPD). With regards to the latter, I am happy to state that the criteria for diagnosing FCPD has been named as 'Mohan's criteria for FCPD' and has been published in several text books.

In Food and Nutrition Research, we have been working on producing healthier food products with lower glycemic index and higher fibre content. We have also produced an Atlas of Indian foods, which is the first of its kind.

In the field of diabetic retinopathy, we have pioneered work in testing of various fundus (retinal) cameras; in the validation of low-cost cameras and in the field of Artificial Intelligence (AI) for the automated diagnosis of diabetic retinopathy.

SKD: What is your opinion about present day medical education?

VM: A lot has changed in the field of medical education since my days. When I was doing MBBS in the early 1970s there was only one private medical college in the whole state of Tamil Nadu and that was the Christian Medical College (CMC), Vellore, which can hardly be considered a private college as it is run by the missionaries and therefore, it was truly an NGO. Hence every medical student in my state was selected on merit. Today, medical education has been completely commercialised and we have large number of private medical colleges, not only in my state, but all over India. While some of them maintain very good quality, many of them are atrocious and turn out doctors who leave a lot to be desired in terms of their knowledge or dedication to the community. This steep fall in the standards of doctors who pass out from such medical colleges is indeed worrying. The standard of teachers has also declined in many of these colleges.

SKD: What are the brighter sides of the present day Medical Research in India?

VM: In 1975, when we applied to the Government to be recognised as a research body, they asked us why should a private institution even do research. Today there are many private institutions like Sankara Nethralaya, Aravind Eye Hospital, LV Prasad Eye Institute, the Adyar Cancer Institute and many others like ours, which contribute significantly to medical research. Many of the top Government institutions like the All India Institute of Medical Sciences (AIIMS), PGI Chandigarh etc are also doing pioneering medical research. However, a lot more needs to be done as only a small

fraction of the medical doctors are taking up research.

SKD: What are the areas that you feel are absent in the present day Medical Research in India?

VM: Unfortunately, most people who do medical research in India today are repeating the research done elsewhere and therefore it has become 'me too' research. Original thinking and creativity is generally missing in research except for some isolated pockets of researchers in the country. We must encourage people to think out of the box, as we have so much of clinical material and resources available in India. The Govt. must also encourage those who are already doing research by giving them funding, resources, man power, and equipment and making them centres of excellence which can be compared to the best in the world. If that is done, I am sure medical research will blossom in India.

SKD: How do you like to train young researchers from Medical Institutes to compete globally?

VM: If we have to encourage medical research in India, it has to start early. Even to undergraduate students doing MBBS, BDS etc., we should offer opportunities for them to do research. Grants and scholarships can be given and special credits should be given for those who undertake research. If we ignite the passion for research at a very early age, that 'fire in the belly' will continue to burn for years to come. I cite this as my personal experience as to why I

am passionate about research. It was only because I started at a very young age (as a teenager) doing medical research that till today, my passion for research has not subsided. We must encourage students to do research. Even if they make mistakes, we should tell them it doesn't matter because failing is part of doing research. Research methodology courses should be taught extensively in all the medical colleges, so that young researchers get attracted to research. Finally, we must encourage our youngsters to ask questions and we should not stifle their interest or enthusiasm.

SKD: What is your message to the students, researchers and faculties?

VM: There is a lot of research potential in India but as Indians, we are generally inhibited and lack self-confidence. There are many burning medical problems in every speciality which need to be researched as they are peculiar to India. We should therefore think globally but act locally. We should start with small projects and then build it up, stage by stage, taking it to a higher and higher level. Finally, modern medical research is all about collaboration. No one institution can do everything and therefore we should trust our peers and collaborate with them by forming networks of research. If necessary, we should even cut across different disciplines as this will help to bring in new ideas and thereby do original research. Why can't India produce a Nobel Prize in Medicine? I am sure we can, if we provide the right climate and incentives, as we have enough bright young minds in India.