



# JK Science

Journal of Medical Education & Research

Editorial Office : Shiv Bhawan, F-4, Kaleeth Nagar, Jammu-180 001 J&K (India)

Tele : 09419195126 (M), 09419123523 (M), Fax : +91-191-2430633

e-mail : jk\_science1999@yahoo.com

## CONSULTANT EDITORS

Ajay Abrol, MCh (Ludhiana)  
 Ajit Avasthi, MD (PGIMER, Chandigarh)  
 Alka Kriplani, MD, FICOG (AIIMS, New Delhi)  
 Anil Thussu, DM (Kuwait)  
 Anuradha Radotra, MD, MRCOG (GMC, Chandigarh)  
 Ashim Sarkar, DVD, FIAMS (Kolkata)  
 Ashok Vaid, DM (New Delhi)  
 Behram Anklesaria, MD (Ahmedabad)  
 B. D. Radotra, MD, PhD (PGIMER, Chandigarh)  
 B. R. Thapa, MD (PGIMER, Chandigarh)  
 Duru Shah, MD, FICOG (Mumbai)  
 H. S. Risam, DM (ESCORT Hospital, New Delhi)  
 K. C. Mohanty, MD (JJ Hospital Mumbai)  
 K. L. Gupta, DM (PGIMER, Chandigarh)  
 Mahendra N. Parikh, MD, FICOG (Mumbai)  
 M. M. Kapoor, DM (Kuwait)  
 M. Y. Nadkar, MD (Mumbai)  
 Nemai C. Nath, MS (Kolkata)  
 P. K. Pispati, MD, FRSM (JASLOK Hospital, Mumbai)  
 P. N. Dogra, MCh (AIIMS, New Delhi)  
 Raj Kumar, MCh (SGPGIMS, Lucknow)  
 Rajesh Gupta, MS (PGIMER, Chandigarh)  
 Rakesh Kapoor, MD (PGIMER, Chandigarh)  
 Rajinder Prasad, MS (AIIMS, New Delhi)  
 Rohit V. Bhatt, MD, FICOG (Baroda)  
 R. N. Misra, MD (SGPGIMS, Lucknow)  
 Sanjay Gupta, MD, FICOG (Pune)  
 Shakti Gupta, MHA (AIIMS, New Delhi)  
 Shashank R. Joshi, DM (Mumbai)  
 Sheila Mehra, FRCOG, FICOG (New Delhi)  
 Shyam V. Desai, MD, MNAMS, FICOG (Mumbai)  
 Subash Koul, DM (NIMS, Hyderabad)  
 Subhadra Jalali, MS (LVPE Institute, Hyderabad)  
 Sukumar Mukherjee, MD, FRCP (Kolkata)  
 T. P. Das, MD (LVPE Institute, Hyderabad)  
 Urvashi P. Jha, MD, FICS (Apollo Hospital, N. Delhi)  
 Vanita Jain, MD (PGIMER, Chandigarh)  
 Vijay Kohli, MCh (New Delhi)  
 Vikas Aggarwal, DM (SGPGIMS, Lucknow)  
 Vineet Kour, MD (Ludhiana)  
 Vishali Gupta, MS (PGIMER, Chandigarh)  
 Y. R. Sharma, MS (AIIMS, New Delhi)

## ADVISORS MANAGEMENT

Dr. G. S. Sainani (Mumbai)  
 Dr. R. L. Gupta (New Delhi)  
 Dr. Rakesh Mahajan (Jammu)  
 Dr. Vijay Mahajan (USA)

## DIRECTOR EXECUTION

Yashpal Sharma, MHA (Jammu)

## OVERSEAS CO-ORDINATORS

Rajesh Gupta, MD (USA)  
 Sanjay Gupta, MD (USA)

**Anni I Mahajan** Editor-in-Chief

MD, Fellow Rheumatology, MAMS, FICP, FIACM

**Sudhaa Sharma** Director Editor

MD, MAMS, FICOG

**S. K. Gupta** (DM)  
 Managing Editor

**Vishal R. Tandon** (MD)  
 Editorial Secretary

**Dinesh Kumar** (MD)  
 Statistical Editor

## ASSOCIATE EDITORS

Bella Mahajan, MD (Jammu)

Gazanfar Ali, MD (Kashmir)

Inder Gupta, DM (Jammu)

Jaipal Singh, MD (Jammu)

Nasib C. Digray, MCh (Jammu)

R. K. Chrungoo, MS (Jammu)

Yudhvir Gupta, MD (Jammu)

## ASSISTANT EDITORS

Ashish Kumar MD (Dehradun)

Ashok Sharma, MS (Jammu)

Ashutosh Gupta, MD (Jammu)

B. Padma Kumar, MD (Alleppey)

Ghulam Hassan, MD (Kashmir)

Hem Chandra, MHA (Lucknow)

Kuldeep Singh, MD (Jammu)

Pawan Suri, MD (Kashmir)

Rahul Sharma, MD (Jammu)

Rashmi Sharma, MD (Jammu)

Ravinder K. Gupta, MD (Jammu)

Shashank Akerkar, MD (Mumbai)

**Aims & Scope :** "JK Science" is a multi-disciplinary, peer reviewed, open access medical journal being published quarterly from Jammu, J&K. It is a step & endeavour to satisfy the professional quest, collect & disseminate medical information & scientific knowledge about various current medical problems, update & increase the interaction among the medical fraternity in the larger interest of the suffering mankind. Besides other medical literature, this journal contains Editorial, Review Articles, Original Articles & various interesting Case Reports. "JK Science" promises to be an important medical communication and journal of scientific excellence in the field of medicine.

**Copyright & Photocopying :** Contents of this journal are protected by copyright. Publication can be reproduced, stored or transmitted in any form or by any means only with written permission of the Editorial Board.

**Subscription & Business Correspondence :** "JK Science" is published four times in a year. Annual subscription rate for individuals is Rs. 450/- (Domestic) and US \$ 80 (for other countries) and for Hospitals/Libraries/Institutions is Rs. 600/- (Domestic) and US \$ 100 (for other countries). Bank Drafts should be sent in the name of "JK Science" payable at Jammu (J&K). Advertisements are welcome, however they will be published subject to the availability of the space.

**Computer Execution & Printing :** Deepak Rattanpal at Durga Printers, 4, Gowshalla Complex, Ambphalla, Jammu-180 001.

"JK Science" is printed, published & edited by Dr. Annil Mahajan at Jammu (J&K) India

**ADVISORY BOARD****Chairperson**

Dr. Rajinder Singh, MD (Jammu)

**Members**

- Adi E. Dastur, MD, FICOG (Mumbai)  
Ajay K. Gupta, MD (Jammu)  
Ajay Wanchu, DM (Chandigarh)  
Alakendu Ghosh, MD (Kolkata)  
Amita Aggarwal, DM (Lucknow)  
Anil Sharma, MCh (Jammu)  
Anniece Chowdhary, MS (Jammu)  
Arup K. Kundu, MD, FICT, MNAS (Kolkata)  
Arvind Chopra, MD, ARACP (Pune)  
Asha Kapadia, MD (Mumbai)  
Ashok Gupta, MD (Jammu)  
Ashok Kumar, MD (New Delhi)  
Ashish Mukherjee, MD (Kolkata)  
Atul K. Patel, MD (Ahmedabad)  
Atul P. Munshi, MD, FICOG (Ahmedabad)  
A. G. Ahangar, MCh (Kashmir)  
Ashis K. Mukhopadhyay, MD (Kolkata)  
A. K. Agarwal, MD (New Delhi)  
A. Mithal, DM (Delhi)  
A. H. Zargar, DM (Kashmir)  
A. K. Debdas, MD, FICOG (Jamshedpur)  
A. K. Khan, MD (Kashmir)  
Bhaskar Dasgupta, MD, FRCP (UK)  
Bhupinder Singh, MD (Jammu)  
Bhupesh Khajuria, MD (Jammu)  
Bikash Medhi, MD (Chandigarh)  
Brinder Vij, MD (Ludhiana)  
B. Gitanjali, MD, PhD (Pondicherry)  
B. B. Rewari, MD (New Delhi)  
B. G. Dharmanand, DM (Bangalore)  
Chander Mohan, MD (Jammu)  
Chandrashekara S., DM (Bangalore)  
D. G. Saple, MD, FCPS (Mumbai)  
D. G. Jain, MD, FICP (New Delhi)  
Dara Singh, MS (Jammu)  
Dilip Mathai MD, FCAMS (Vellore)  
D. J. Borah, MD (Assam)  
Dinesh K. Badyal, MD (Ludhiana)  
Ganshyam Dev, MD (Jammu)  
G. Narsimulu, MD (Hyderabad)  
G. L. Avasthi, MD, FICP (Ludhiana)  
G. N. Qazi, PhD (Jammu)  
H.P. Pattanik, MS, FIMCH (Cuttuck)  
H. Ralph Schumacher, Jr., MD (USA)
- Ira Shah, MD (Mumbai)  
Irfan Robbani, MD (Kashmir)  
I.S. Gilada, DDV, FCPS (Mumbai)  
Jasbir Singh, MHA (Jammu)  
Jaswant Rai, MD (Amritsar)  
Jatinder Singh, MD (Amritsar)  
Jatinder Singh, MD (Jammu)  
J. K. Maniar, DDV, DVD (Mumbai)  
Joy Philip, MD, MNAMS (Trivandrum)  
Jyotsna Oak, MD (Mumbai)  
Kamlesh Tewary, MD, FICP, FIAMS (Bihar)  
Kasturi Lal, MD (Jammu)  
Kaushik Chaudhuri, MD, MRCP (UK)  
Khairat Mohd., MD (Kashmir)  
Kumkum Sharma, MD (Jammu)  
K. L. Gupta, MD, PhD (Jammu)  
K. M. Mahendranath, D.Med (Bangalore)  
K.J.B.S. Gaur, MD, FCCP (Dehradun)  
Leele Kalsotra, MD (Jammu)  
Madhu Nagpal, MD (Amritsar)  
Mandakini Parihar, MD (Mumbai)  
Mandeep Singh, MD (Jammu)  
Manoj Sharma, MD (Jammu)  
Meeta Singh, MD (Hyderabad)  
Monika Mahajan, MD (USA)  
M. A. Kamli, MD (Kashmir)  
Narendra S. Potsangbam, MD (Manipur)  
Neelam Bhardwaj, MD, DRH (Pune)  
Neera Aggarwal, MS, FAGS (New Delhi)  
Nirupa Borges, MD (Mumbai)  
N. S. Pathania, MD, FAMS (Jammu)  
Parveen Kumari, MS (Jammu)  
Paul A. Bacon (UK)  
Pramod Kalsotra, MS (Jammu)  
P. K. Shah, MD, FICOG (Mumbai)  
P. Sadhotra, MD (Jammu)  
Rabinder Rattanpal, MHA (Jammu)  
Rajendra Kapila, MD (USA)  
Rajesh Soneji, MD (Ahmedabad)  
Rajesh, MS (Dehradun)  
Rajiva Gupta, MD (Delhi)  
Rakesh Saraf, MCh (Jammu)  
Ramesh Chander Arora, MRCP (New Delhi)  
Romesh Gupta, MHA (Jammu)
- R. Handa, MD, FAMS, FACR (New Delhi)  
R. Madan, MD, FAMS (Jammu)  
R. K. Arora, MS (Amritsar)  
R. K. Gupta, MD, PhD (Sevagram)  
R. M. Kaushik, MD (Dehradun)  
R. Raveendran MD, Dip Clin Pharma (Pondicherry)  
R. Vaidya, MD (Mumbai)  
Samir Malhotra, DM (Chandigarh)  
Sandeep Garg, MD (New Delhi)  
Sandeep Puri, MD (Ludhiana)  
Sanjay Gupta, MD (Jammu)  
Sanjeev Kapoor, MD (Jammu)  
Saroj Srivastava, MS, FACOG (Lucknow)  
Satya Dev Gupta, MD (Jammu)  
Shashi Gupta, MD (Jammu)  
Shobhana Mohandas, MD (Kochi)  
Showkat H. Khan, MD, DRM (Kashmir)  
Sita Naik, MD, FAMS (Lucknow)  
Sonia Malik, MD (New Delhi)  
Subash Bhardwaj, MD (Jammu)  
Subodh Bhardwaj MD (Pune)  
Sunesh Kumar, MD (New Delhi)  
Sunil Kotwal, MS (Jammu)  
Sunila Khandelwal, MS, FICOG (Jaipur)  
Suniti Solomon MD (Chennai)  
Syed Atiquel Haq MD (Bangladesh)  
S.B. Gupta, MD (Mumbai)  
S. J. Gupta, FRCP (New Delhi)  
S. K. Das, MD (Lucknow)  
S. P. Beyotra, MD (Delhi)  
S. Rajeshwari, DM (Chennai)  
S. Rajasekaran, MD, DTCD (Chennai)  
T. K. Biswas, MD (Kolkata)  
T. K. Shanmugasundaram, MCh (Chennai)  
U. R. K. Rao, MD (Hyderabad)  
Vandhana Berry, MD (Ludhiana)  
Vatsla Dadhwal, MD (Delhi)  
Vijay Khajuria, MD (Jammu)  
V. Krishnamurthy, DM (Chennai)  
V. P. Chaturvedi, DM (Delhi)  
V. R. Joshi, MD (Mumbai)  
V. S. Chopra, MD (Jammu)  
V. Verma, Ph. D. (Jammu)  
Y.K. Gupta, MD (N. Delhi)