

# 62<sup>nd</sup> ANNUAL ISAM CONFERENCE

23-25 NOV 2023

## SCIENTIFIC PROGRAMME



## AEROSPACE MEDICINE



STRENGTH  
SUPPORT  
SOLUTIONS

Institute of Aerospace Medicine, Indian Air Force  
Bangalore - 560017



## Day 1: 23 Nov 23 (Thursday)

### Registration of Delegates (0800 h onwards)

#### AVM Srinagesh Auditorium

#### Scientific Session 1: Military Medicine: New Horizons & Challenges (0845 - 1000 h)

*Chairpersons: AVM Shankar S, Gp Capt Rahul Pipraiya (Retd)*

Navigating the World of Aviation Dentistry: New Horizons & Challenges  
*Air Cmde M Panwar VSM*

Social Media Engagement and Well-being Among Military Aviators  
*Lt Col Srihari Iyer*

A Case Study on Rapid Action Medical Team Deployment in Northern Part of West Bengal in a Military Exercise  
*Wg Cdr Suraj Giri*

Thromboembolic Disorder in High Altitude Area  
*Flt Lt Hardik Sahi*

Accelerated Rehabilitation after Anterior Cruciate Ligament Reconstruction – Blood Flow Restriction, Normobaric Hypoxia vs Standard Exercise Therapy : A Protocol for Randomized Study  
*Wg Cdr Anjan Prabhakara*

#### Engineer Auditorium

#### Scientific Session 2: Field Experience: Mixing Science and Administration (0845 - 1000 h)

*Chairpersons: Surg Capt PD Ayengar, Col Saurabh Bhardwaj*

A Field Study to Evaluate Need for Re-design of Flying Overalls for Female Fighter Pilots  
*Lt Col Urmimala Bhattacharya*

Ejection Procedure Simulator Training at 2AMTC - A Retrospective Analysis of Training Imparted to Flt Cadets and Aircrew  
*Wg Cdr Omesh Nath*

Incidence of Physical Symptoms & Disorientation in Apache 64E Aircrew  
*Wg Cdr Sushree Sangita Khutua (Retd)*

Poland Syndrome in a Civil aircrew: Aeromedical Decision Dilemma  
*Sqn Ldr Anubhav Upadhyay*

Lessons Learnt from the USAF During a Joint Exercise at a Transport Base of the IAF  
*Sqn Ldr Mohin Sakre*

**Tea: 1000 - 1030 h**

### Plenary Session (AVM Srinagesh Auditorium): 1100 h onwards

#### Air Marshal Subroto Mukerjee Memorial Oration (1210 h)

**Playing International Sports for two decades – What it takes!**  
**by Padma Shri Dr Syed Mujtaba Hussain Kirmani**

**Chairperson: Lt Gen Daljit Singh AVSM VSM PHS, DGAFMS**

**Lunch: 1300 – 1400 h**

#### Scientific Session 3: Cut-Off Point: Science behind Crew-Cockpit-Compatibility (1400 - 1500 h)

*Chairpersons: Gp Capt YS Dahiya, Col S Venkatesh*

Comparison of 3D Laser Scanning Anthropometric Technique with Conventional Direct Method for Head and Facial Parameters  
*Wg Cdr V Raghunandan*

Aircrew Selection for an Advanced Fighter Jet - An Anthropometric Standpoint  
*Wg Cdr Biplob Bhowmick*

Bayesian Instrument for Spinal Disability (Bis) - A Predictive Model for Aircrew Flying Fitness  
*Gp Capt P Biswal*

To Be Seated or Not - Maximum Permissible Sitting Height for Garud Microlite Aircraft  
*Wg Cdr Avinash BK*

#### Scientific Session 5: Space Medicine: When Man Matters (1500 - 1600 h)

*Chairpersons: Air Cmde Vipin Sharma, Gp Capt P Biswal*

Space and Entry Motion Sickness in Short Duration Spaceflight: Challenges and Way Forward for India's Maiden Human Spaceflight Mission - *Wg Cdr Polash Sannigrahi*

Design, Development, and Fabrication of a Comprehensive Health Care Kit for Indian Astronauts  
*Dr Ratnesh Singh Kanwar Sc 'F'*

Blood Clot in Spaceflight could be Catastrophic: Requisite for Risk Assessment and Countermeasures - *Dr. Iti Garg Sc 'E'*

Enhancing Exploration Platforms and Analog Definition: The Future of Commercial Spaceflight (online)  
*Dr Emmanuel Urquieta*

#### Scientific Session 4: Aeromedical Stressors: Understanding the Core Issue (1400 - 1500 h)

*Chairpersons: Gp Capt PC Ghosh (Retd), Gp Capt P Rastogi*

Combined Altitude Depleted Oxygen vis-à-vis Hypobaric Hypoxia: Efficacy in Hypoxia Indocination  
*Flt Lt Sanjay P*

Incidence of Otitic Barotrauma during Decompression Test in Indian Armed Forces between 2019-2022  
*Sqn Ldr Avishek Sharma*

Aeromedical Aspects in a Canopy Burst Incident - A Case Report  
*Sqn Ldr HS Harshith*

Study of Combat Aircraft Cabin Pressurization and Occupant Physiology During Cabin Air Supply Failure  
*A Sathiyaseelan*

#### Scientific Session 6: Aviation Physiology: Back to Basics (1500 - 1600 h)

*Chairpersons: Maj Gen Vanamalini Tewari, Gp Capt HMK Murthy*

Head-up Tilt Test in Cases of Unexplained Syncope  
*Maj Savina O George*

A Comparative Study of Utricular Function Between Healthy Aircrew and Groundcrew Using Subjective Visual Vertical  
*Surg Lt Cdr Karthikeyan S*

Prolonged Stay at HA & its Effect on Persistence of High BP  
*Lt Col Srinivasa AB*

A Comparative Study to Evaluate Aerobic and Anaerobic Capacity in Mild Anaemic Individuals (as per WHO criteria) with their Healthy Counterparts  
*Wg Cdr Ashwini Kumar*

**Society Banquet at Sterlings Mac Hotel (1930 h onwards)**

## Day 2: 24 Nov 23 (Friday)

### Scientific Session 7: G Tolerance: From Strength (Training) to Support (Operations) (0830 - 0930 h)

*Chairpersons: AVM Anupam Agarwal VSM, Gp Capt MS Nataraja*

Changes in +Gz Endurance After a G warm-up Maneuver and the Duration for which this Change in +Gz Endurance Persists

*Wg Cdr Sneha Dinakar*

Postural Dysautonomia in Response to Head-Up Tilt in a Military Pilot Aspirant - Aeromedical Considerations

*Sqn Ldr Gaurab Ghosh*

Study of Heart Rate Changes and Relaxed +Gz Tolerance Levels in Correlation with Different BMI Levels on Exposure to GOR Profile and ROR Profile in DFS Among IAF Aircrew

*Sqn Ldr SP Singh*

Phase Angle from Bioelectrical Impedance Analysis Correlates with Gravitational Blood Pooling in the Human Leg

*Dr Munna Khan*

### Scientific Session 8: Fitness for Flying: Aeromedical Decision Making (0830 - 0930 h)

*Chairpersons: AVM Tanmoy Roy VSM, Air Cmde P Ghana VSM*

Liver Histopathology in Healthy Aircrew - An Insight into Aetiopathology of Incidental Abnormalities Found During Routine Medical Examinations

*Wg Cdr Neha Gupta*

Gender Based Difference in Computerized Dynamic Visual Acuity

*Sqn Ldr Anitha T*

A Study of Platewise Probability of Errors While Reading 38 Plate Ishihara Chart Among Colour Normal Individuals

*Wg Cdr Sridhara Reddy*

A Case Report on Obstructive Sleep Apnea (OSA) in a Non-Obese Aviator with Resistant Hypertension: Screening Policies and Future Recommendations

*Wg Cdr Snehangsh Dash*

### AVM MM Srinagesh Memorial Oration (0930 - 1030 h)

**Patient Safety: Drawing Lessons from Aviation Safety  
by Air Marshal (Dr) Pawan Kapoor AVSM VSM & Bar (Retd)**

***Chairperson: Air Marshal Rajesh Vaidya VSM, DGMS (Air)***

**Tea: 1030 – 1100 h**

### JHF Manekshaw Panel (1100 - 1200 h)

**‘OPTRAM – The Evolution of a Revolution’ by AVM (Dr) Deepak Gaur AVSM (Retd)  
‘Psychological Warfare of China’ by Prof Srikanth Kondapalli**

***Chairpersons: Air Marshal CK Ranjan AVSM VSM (Retd), AVM MS Sridhar***

### Scientific Session 9: Cognitive Integration in Flying Ops (1200 - 1300 h)

*Chairpersons: Surg R Adm R Ravi, Gp Capt Ranjan Sarkar*

Effects of Sleep Inertia post a Short Nap on Cognition and Psychomotor Task

*Lt Col Binu Sekhar M*

Effect of Noise on Visuo-spatial Working Memory: An Aviation Perspective

*Sqn Ldr Devdeep Ghosh*

Assessing and Predicting Mental Workload using Affective Computing: An Explorative Conceptual Approach

*Mr Sibin Raj K Sc ‘C’*

Decoding Air Sickness: Predictive Factors and Psychological Insights

*Ms Saroja Roy Grandhi, Sc Asst*

### Scientific Session 10: Residents in Aerospace Medicine (RAM) Session (1200 - 1300 h)

*Chairpersons: Gp Capt SS Mohapatra, Wg Cdr Ajay Kumar*

Comparison of Range of Movements of Spine vis-à-vis IAM-EMP Protocol: A Retrospective Analysis

*Dr Ruchika Rana*

MTHFR Gene Mutation and Risk of Venous Thrombosis: Aeromedical Decision Making

*Maj Jeya Karthik*

A Case Study of Non-specific Tinnitus in a Helicopter Pilot: Aeromedical Perspective

*Dr Preethi R*

A Retrospective Study on the Effect of Hyperbaric Oxygen Therapy on Hearing Outcome in Idiopathic Sudden Sensorineural Hearing Loss

*Sqn Ldr BN Bhowmick*

**Lunch: 1300 - 1400 h**

### Scientific Session 11: Commercial Aviation: Carrying the 'Health' Along (1400 - 1500 h)

*Chairpersons: AVM Pankaj Tyagi VSM (Retd), Gp Capt MPS Marwaha*

Prediction of Non-Communicable Disease (NCD) Among Civil Pilots Based on Lifestyles

*Gp Capt Rahul Pipraiya (Retd)*

Vitamin D Deficiency in Commercial Airline Pilots

*Dr Swathy Kuppala*

Self-Medication in Civil Aviation

*Sqn Ldr E Srihari*

In-Flight Thrombosis: Risks and Prevention

*Dr Swati Srivastava Sc ‘E’*

### Scientific Session 12: Closed Door Session 1 - Human Factors in Aircraft Accident (1400 - 1500 h)

*Chairpersons: Air Cmde Rajesh Kumar, Gp Capt Mona Dahiya*

Human Factors in Aircraft Accident

*Air Cmde Sharad Pasricha*

Subjective Assessment of Sleep Pattern among Aircrew

*Gp Capt MS Nataraja*

Integrating Human Factors into Investigation of a Fatal Aircraft Accident - Lessons Learnt

*Sqn Ldr Gaurab Ghosh*

<p><b>Scientific Session 13: Innovation: Where Life Matters!</b> (1500 - 1600 h)</p> <p><i>Chairpersons: Maj Gen VV Joshi VSM, Wg Cdr MD Sharma</i></p> <p>Assessment of Mass Properties of an Indigenous Fighter Helmet: IAM Experience <i>Wg Cdr BN Vasudev</i></p> <p>Integration Testing and Flight Evaluation of ILS (Tejas) <i>Dr AA Bhat</i></p> <p>Man Rating of Normobaric Hypoxia Enclosure at IAM: Our Experience in Pilot Study <i>Gp Capt Ranjan Sarkar</i></p> <p>Application of Moment of Inertia in Helmet Mass Property Assessment for Improving Aviation Safety <i>Mr Sabyasachi Nayak</i></p>	<p><b>Scientific Session 14: Closed Door Session 2 - Mental Health and Psychological Support</b> (1500 - 1600 h)</p> <p><i>Chairpersons: AVM Kaushik Chatterjee, Brig Amit Khurana</i></p> <p>Psychological Stress Among the Service Personnel at Andaman and Nicobar Command: A Cross-sectional Survey <i>Gp Capt SS Mohapatra</i></p> <p>Post Accident Support System (PASS): Supporting Aircrew to Safely Return to Cockpit <i>Gp Capt P Biswal</i></p> <p>Post Accident Support System (PASS): Implementation: A Field Experience <i>Gp Capt P Rastogi</i></p> <p>Post Accident Support System (PASS): Supporting Aircrew Safely Back into the Cockpit – A New Perspective <i>Dr Sowgandhi Chaturvedula Sc 'F'</i></p>
<b>ISAM General Body Meeting (1615 h) (Srinagesh Auditorium)</b>	
<b>ISAM Fellow's Night (for Fellows only) at Vayu Vihar Officer's Mess, Challaghatta (1915 h onwards)</b>	
<b>Day 3: 25 Nov 23 (Saturday)</b>	
<b>SMO's Conference (on AFNET platform):</b> (0830 – 1030 h)	<b>DGCA's Workshop for Medical Examiners</b> (0915 -1430 h)
<b>Tea: 1030 - 1100 h</b>	<b>Tea: 1100 - 1130 h</b>
<p><b>Continuing Medical Education:</b> (1100 - 1300 h)</p> <p>Common Errors in Medical Board Procedures <i>Gp Capt Pius Renjhen</i></p> <p>Sample Collection and Disposal for DNA Profiling Using FTA card <i>Wg Cdr KK Singh</i></p> <p>Disposal of Fatal Case Document (FCD) - A Practical Guide for Medical Officer <i>Gp Capt MB Suja</i></p> <p>Sleep Alertness Management in Aircrew in the IAF <i>Wg Cdr V Raghunandan</i></p>	<p><i>Chairpersons: Air Cmde Mukul Bhatia, Gp Capt NK Tripathy</i></p> <p>Ejection: Pre-hospital Management of Aircrew <i>Wg Cdr MD Sharma</i></p> <p>Role of Medical Officer in Aircraft Accident with a Special Emphasis on Sample Collection <i>Dr Santhosh SR Sc'F'</i></p> <p>Common Errors in Medical Stores Management at SMC <i>Wg Cdr Shailendra Singh</i></p>
<b>Poster Sessions (Anteroom)</b>	
<p><b>Session 1 (23 Nov 23 1400 - 1500 h)</b></p> <ul style="list-style-type: none"> <li>Cardiovascular Deconditioning on Orthostatic Challenge After Exposure to Exposure to Microgravity Simulation in the form of Dry Supine Thermoneutral Water Immersion for Eight Hours Among Sports Personnel: Endurance Trained vs Resistance Trained Participants – <i>Col N Suhasini Reddy</i></li> <li>Screening of Haemoglobinopathies using HPLC among Candidates aspiring for Induction in Armed Forces at an IAF Boarding Centre: A Retrospective Analysis – <i>Wg Cdr Smita Rani Borgohain</i></li> <li>Photo Dermatitis and High UV Index in Jorhat (Northeast India) due to Single Time Zone – A Study - <i>Wg Cdr Chetan Patil</i></li> <li>Lab in Space: Point of Care Testing for Astronauts in Space Missions of Emerging Economies – <i>Dr Saswati Das</i></li> <li>Renewing the Understanding of Aviation and Aerospace Medicine with Substitutive Physiological Adaptations to Weightlessness: Beyond Boundaries of Earth Environments – <i>Dr Jayashri D Sharma</i></li> <li>Suicide Prevalence &amp; Cause Analysis in One of the Commands of IAF – <i>Wg Cdr Vijay S</i></li> </ul> <p><b>Session 2 (23 Nov 23 1500 - 1600 h)</b></p> <ul style="list-style-type: none"> <li>Same Diagnosis, Different Story: First case of Holme's Adie Syndrome in Current Epidemic of Viral Conjunctivitis – <i>Dr Agrima Bhatia</i></li> <li>Mil- Air Evacuation - A Case Report – <i>Sqn Ldr Anurag Singh</i></li> <li>Comparison of Outcome of Simulated Ejections Among Trained and Under-trainee Aircrew During the Training on Ejection Procedure Simulator – <i>Gp Capt HMK Murthy</i></li> <li>Report on Subject Matter Expert Exchange (SMEE) to Republic of Korea – <i>Sqn Ldr B Nanda Kishore</i></li> <li>Aerodontalgia – A Case Report – <i>Wg Cdr Jaipreet Singh Joneja</i></li> </ul> <p><b>Session 4 (24 Nov 23 1200 - 1300 h)</b></p> <ul style="list-style-type: none"> <li>To Study the Changes in Pulmonary Volumes, Flow Rates and Capacities Following 12 hours Dry Supine Immersion – <i>Maj Hemant KA</i></li> <li>Unexplained Physiological Event: A Case Report – <i>Lt Col Srihari Iyer</i></li> <li>Outbreak of Food Poisoning at Military Establishment – <i>Wg Cdr Aniket Kulkarni</i></li> <li>Space Medicine: Pharmacokinetic, Pharmacodynamic and Formulation perspectives to Provide Safe and Effective Therapy – <i>Dr Priti J Mehta</i></li> <li>Android Phone Based Audiometry for Screening of Hearing Loss – <i>Wg Cdr Sunil Mathews</i></li> <li>KAP of Armed Forces Personnel in an Air Force Station regarding Obesity – <i>Sqn Ldr A Shukla</i></li> </ul>	<p><b>Session 3 (24 Nov 23 0830 - 0930 h)</b></p> <ul style="list-style-type: none"> <li>Sports Injuries in Aircrew: Prevention – <i>Gp Capt Pallavi Goswami</i></li> <li>Recurrent Bilateral Nasal Polyp - A Case Report – <i>Lt Col TS Rana</i></li> <li>Normal Digital Contribution to grip Strength Assessed by Digital Hand Grip Dynamometer – <i>Wg Cdr V Raghunandan</i></li> <li>Accidental Exposure to Cyanide in an Occupational Setting: A Case Report – <i>Sqn Ldr Abhay Singh Tomar</i></li> <li>Retrospective Audit of Medical Evacuations in the IAF in Recent Past – <i>Wg Cdr V Raghunandan</i></li> <li>Otolaryngological Challenges in Prolonged Spaceflight Assessing and Addressing Vestibular and Auditory Changes in Zero Gravity – <i>Wg Cdr Sanjay Kumar</i></li> </ul> <p><b>Session 5 (24 Nov 23 1345 - 1445 h)</b></p> <ul style="list-style-type: none"> <li>Adult onset Myopia – A Case Study of Flight Cadets in Indian Air Force – <i>Sqn Ldr Sourav Gain</i></li> <li>A Case of Guillain Barre Syndrome in a Fighter Pilot: Aeromedical Decision Making – <i>Surg Lt Cdr Shireen Deepthi</i></li> <li>Psoriatic Arthritis in Military Flying: Aeromedical Concerns &amp; Disposal – <i>Sqn Ldr BN Bhowmick</i></li> <li>Tele-mental Health Care: An Effective Alternative Way to Psychological Well-being for Aircrew in IAF – <i>Dr Akanksha Gautam Sc 'E'</i></li> </ul>
<div> <div>Sessions at AVM Srinagesh Auditorium</div> <div>Sessions at Engineer Auditorium</div> <div>Orations and Panel Discussion</div> <div>Poster Sessions</div> </div> <p><b>Organising Secretary:</b> Gp Capt SS Mohapatra (+91 9531936804)  <b>Assistant Organising Secretaries:</b> Wg Cdr Biplab Bhowmick (+91 9482609151) and Wg Cdr BN Vasudev (+91 9449764568)</p>	