

**12TH INTERNATIONAL ADT CONFERENCE
ON
INNOVATION AND INTEGRATION:
THE LATEST TRENDS IN DIAGNOSTICS**

ADVANCED
DIAGNOSTIC TECHNIQUES
2024



DATE: 15TH -16TH MARCH, 2024

CONFERENCE SOUVENIR

ORGANIZED BY

DEPARTMENT OF ALLIED HEALTH SCIENCES

CHITKARA SCHOOL OF HEALTH SCIENCES

CHITKARA UNIVERSITY

PUNJAB-140401, INDIA

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ABOUT THE UNIVERSITY



Establishment

- In the year 2002, Chitkara Educational Trust established its Punjab campus 30 kilometres from Chandigarh, on the Chandigarh–Patiala National Highway.
- In the year 2010, Chitkara University was established by the Punjab State Legislature under “The Chitkara University Act”.
- Chitkara University, the best university in Punjab is a government-recognized university with the right to confer degrees as per the Sections 2(f) and 22(1) of the UGC Act, 1956.

Teaching & Activities

- The University offers multi-disciplinary programs, all of which are designed to be industry-relevant. From business management programs to programs in nursing and medical laboratory technologies; and from computer science, electronics and mechanical engineering programs, to hotel management and architecture.
- The Curriculum is delivered in spacious, amphitheatre-style classrooms—fitted with modern information and communication technology (ICT) equipment—and in well-equipped, modern laboratories. Additionally, students are encouraged—and provided relevant facilities—to participate in co-curricular and extra-curricular activities through various clubs and societies on the campus.

Vision

- To be a globally recognized organization promoting academic excellence through interdisciplinary applied research and to expand realms of knowledge through innovation.

Mission

- To carry out the academic processes in accordance with global standards through active teacher-student-industry participation.
- To promote research, innovation and entrepreneurship in collaboration with industry, research laboratories and academic institutions of global repute.
- To inculcate high moral, ethical and professional values amongst our students, faculty & staff.

- To contribute in building skilful society.

CHITKARA SCHOOL OF HEALTH SCIENCES



- Established in 2011, Chitkara School of Health Sciences is exclusively dedicated to the education of health care professionals. We envision training and developing health care professionals who can create a difference in the quality of life of all those who require healthcare. Our course curriculum is a blend of theory, practical and clinical exposure. Our esteemed faculty and our strong collaborations with industry leaders are the pillars of our successful journey through these 11 years.
- The training with the industry helps to develop high degree of conceptual skills, analytical skills and quality technical knowledge base and prepare our students for hospitals and related healthcare domains. We offer more than 14 UG/PG programmes in different domains including Allied Healthcare, Optometry, Physiotherapy, Nutrition Dietetics and Nursing. We also offer doctoral programmes in several domains of Health Sciences.

ABOUT THE CONFERENCE

- Chitkara School of Health Sciences, Chitkara University has been organizing the Advanced Diagnostic Techniques (ADT) Conference every year, since its inception in 2012. This Conference encourages young and innovative minds pursuing careers in science and technology by providing a suitable platform to present their research work and enhance their scientific acumen through interactions with eminent scientists and field experts. This year again, we proudly invite applications for the 12th edition of the International ADT Conference.
- The theme of the 12th International ADT Conference is “Innovation and Integration: The Latest Trends in Diagnostics”, which aims to bring together leading academic scientists, researchers, scholars and students to exchange and share their experiences and research results on various aspects of Advances and Innovations in Diagnostics. The conference aims to bring together both national and international researchers, health practitioners, educators, and students to deliver papers and spark debates about recent trends and breakthroughs in the field of diagnostics, and will include a variety of presentations, discussions and keynote addresses.

CONFERENCE COMMITTEE

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DR. ASHOK K. CHITKARA
(Chancellor, Chitkara University)



DR. MADHU CHITKARA
(Pro-Chancellor, Chitkara University)

CO-PATRON



DR. ARCHANA MANTRI
(Vice Chancellor, Chitkara University, Punjab)

ORGANIZING CHAIRPERSON



DR. SONIKA BAKSHI BHANDARI
(Dean, CSHS, Chitkara University, Punjab)

ORGANIZING SECRETARY'S



DR. NAVITA GUPTA
(Associate Professor, CSHS, Chitkara University, Punjab)



DR. ABHILASHA SOOD
(Assistant Professor, CSHS, Chitkara University, Punjab)



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MESSAGES FROM CONFERENCE COMMITTEE



Dr. Ashok K. Chitkara
(Chancellor, Chitkara University)

It gives me great pleasure to announce that the 12th International ADT Conference on "Innovation and Integration: The Latest Trends in Diagnostics" (ADT-2024) will be held at Chitkara University in Punjab, India, from March 15th –16th. The conference is being organised by the department of Allied Health Sciences at the Chitkara School of Health Sciences.

The primary focus of the conference will be on “Advances and Innovations in Diagnostics”. This event aims to facilitate the gathering of prominent academic scientists, researchers, scholars and students to exchange insights and present their research findings on various aspects of current advances and innovations in diagnostics. It will serve as a platform for global experts to engage in intensive discussions regarding recent trends and breakthroughs in the diagnostic field.

I anticipate that distinguished speakers will offer diverse perspectives on the conference theme. I am confident that this conference will provide valuable solutions to global challenges. The success of this event is attributed to the dedication and efforts of numerous individuals who have been tirelessly working on its preparation for almost a year. I extend my gratitude to our industry partners for their support. Lastly, I express my heartfelt thanks and appreciation to everyone involved in making the conference a great success.



Dr. Madhu Chitkara
(Pro-Chancellor, Chitkara University)

I extend a warm welcome to all our esteemed delegates and speakers to the 12th International ADT Conference on “Innovation and Integration: The Latest Trends in Diagnostics”, scheduled to take place from March 15th to 16th, 2024, hosted by Chitkara University, Punjab, India.

The Chitkara University Campus embodies a treasure trove of knowledge, innovation, and technology. It serves as a hub of opportunities for aspiring Health Science faculties and researchers. The conference events are tailored to engage researchers, practitioners, professionals, educators, and students, providing a platform to share experiences, innovative ideas, challenges, recent trends, and future directions in the field of Health Science and Technology.

This conference stands as a distinctive platform for the exchange of innovative ideas and technical expertise, driving advancements in this enduring field. The program will feature keynote addresses from esteemed academicians and paper presentations by researchers and scholars. It fills us with joy to welcome participants to this enriching conference.

In essence, this conference pledges to elevate to new heights of excellence, serving as the pinnacle where information and skills converge with opportunities and guidance. It represents a milestone that should not be overlooked. I extend my best wishes for the resounding success of ADT - 2024.



Dr. Archana Mantri
(Vice-Chancellor, Chitkara University, Punjab)

It brings me great joy to be part of the hosting team for the 12th International ADT Conference on “Innovation and Integration: The Latest Trends in Diagnostics”. This conference aims to unite scientists, academics, researchers, and practitioners from various fields to address concerns related to different techniques in Health Science and Technology.

I seize this opportunity to extend a warm welcome to all the delegates attending the conference. On behalf of the entire ADT team, I extend heartfelt thanks to all the authors, sponsors and keynote speakers for their invaluable support and cooperation. The rapid advancements in technology and lifestyle changes present various challenges in many countries. The ADT - 2024 conference has been meticulously designed to confront these obstacles and we are fortunate to have esteemed speakers sharing their experiences and insights to pave the way for innovative solutions. I trust that the conference will serve as a hub for interdisciplinary collaboration and meaningful discourse.

My sincere appreciation goes to the organizing committee for their unwavering dedication in bringing this conference to fruition. Lastly, I extend my congratulations to the Deans, Secretaries, faculties, student representatives and participants for their commendable efforts in organizing and contributing to this conference, and I extend my best wishes for its success.



Dr. Sonika Bakshi Bhandari
(Organizing Chairperson)
(Dean, CSHS, Chitkara University, Punjab)

It gives me great pleasure to extend a warm invitation to all the esteemed colleagues & delegates to the 12th International ADT Conference on “Innovation and Integration: The Latest Trends in Diagnostics” on 15th-16th March 2024, at Chitkara University, Punjab, India. This event promises to be a unique gathering of experts, researchers, and industry leaders in the field of diagnostics. We have curated a diverse program that encompasses a wide range of topics including but not limited to: Advancements in diagnostic technologies; Molecular diagnostics and personalized medicine; Point-of-care diagnostics; Advances in medical imaging techniques; Integrative approaches in disease diagnosis; challenges & opportunities in diagnostics research. Our lineup of speakers comprises of renowned professionals who will share their insights, research findings, and innovative approaches to diagnostics. There will be ample opportunities for networking and collaboration. We believe that the exchange of ideas and experiences among participants will contribute significantly to the advancement of diagnostics



Dr. Navita Gupta
(Organizing Secretary)

(Associate Professor, CSHS, Chitkara University, Punjab)

It gives me immense pleasure to welcome all the delegates to the 12th edition of the International ADT conference. The theme of the conference is very contemporary and includes technologies blooming in the field of diagnostics. There has been a surge of advancements in diagnostics utilizing various new trends such as artificial intelligence, augmented and extended reality, telemedicine, nanotechnology, precision medicine etc. These have been called as the healthcare transformers which will be shaping the future of healthcare. The conference includes expert talks from renowned academicians and researchers as well as scientific presentations which represent a realm of upcoming integrative and innovative approaches to diagnostics. The organizers are extremely grateful to all the delegates and members of the team for this successful endeavour. We are extremely thankful to conference partners and sponsors for their support which added a silver lining to this International Conference. We also hope that this conference has given an excellent chance for researchers from various domains of healthcare to exchange ideas and useful collaborations.



Dr. Abhilasha Sood

(Organizing Secretary)

(Assistant Professor, CSHS, Chitkara University)

The two-day international conference on "Innovation and Integration: The Latest Trends in Diagnostics" being held at Chitkara University in Punjab on March 15th –16th, 2024, is truly a memorable event. Its goal is to successfully set up an important milestone by utilizing activities that include expert lectures from exceptional achievers and presentations of researchers in relevant fields in a setting that encourages healthy interaction and sharing.

The organizers extend heartfelt gratitude to our event partners for their invaluable support, which has transformed this conference into a grand platform for the Allied Health Sciences community. The diverse range of topics covered will illuminate the latest technologies and facilitate our growth by tapping into the vast reservoirs of knowledge and expertise offered by esteemed academicians.

I am highly grateful to the dedicated team members whose painstaking efforts have been instrumental in ensuring the success of this conference.

INVITED SPEAKERS PROFILE



Dr. Rajat Sandhir

(Panjab University, Chandigarh, India)

Dr. Rajat Sandhir has received his M.Sc and Ph.D. degree in Biochemistry from the Postgraduate Institute of Medical Education and Research, Chandigarh. He has been at the Department of Biochemistry, Panjab University for more than 20 years. He has 30 years of teaching and research experience. His research interests are to understand the biochemical and molecular mechanisms involved in development of neurodegenerative conditions like metabolic encephalopathies, dementia's and brain injury with a particular interest to investigate the role of oxidative stress, mitochondrial dysfunctions and alterations in permeability of Blood-Brain-Barrier. In addition, his interest is also to identify neuroprotective strategies that could ameliorate neurodegenerative conditions. He has over 200 papers to his credit and has mentored over three-dozen students for Ph.D. He has an h-index of 52 and i10 index of 154. He was been awarded with 'KT Shetty Memorial Oration (2021)' by the Indian Academy of Neurosciences. He has recently been conferred with "Mrs. Abida Mahdi Award-2022" by the Indian Academy of Biomedical Sciences for outstanding contributions in the field of Neurosciences. He is also Fellow of Indian Academy of Neurosciences and Indian Association of Biomedical Scientists. He is also a recipient of 'INSA Best Teacher Award 2022'. He has been listed among the World 2% Scientists for the year 2020 & 2023 released by the Stanford. He is on the editorial board of many international journals. He is also the Principal Investigator of Northern Region S&T Cluster (PI-RAHI) sanctioned by the o/o PSA, Govt. of India.

Expert Talk on “**Advancements in Molecular Diagnostics: Pioneering Early Disease Detection Strategies**”



Dr. Uma Kanga

(All India Institute of Medical Sciences, New Delhi, India)

Dr. Uma Kanga did her PhD at the All India Institute of Medical Sciences (AIIMS), New Delhi, India. She is presently Faculty-In-charge of the Clinical Immunogenetics Laboratory that provides clinical services for transplantation program at AIIMS, New Delhi. Her research is focused on HLA diversity in Indian populations and Transplant Immunology and she has around 100 peer-reviewed publications to her credit. She has received several research grants from ICMR, DST, DBT, Inserm (France) and JDRF (USA). She is a recipient of the Mentor-Mentee award by The Transplantation Society. She has been awarded academic fellowships from the Commonwealth Scholarship Commission and the Japanese Society for Promotion of Science. In 2021, she was inducted as a Fellow of the European Board of Surgery (Transplant Immunology). Dr. Kanga is a member of the International HLA and Immunogenetics Council and Founder Secretary of the Indian Society for Histocompatibility and Immunogenetics (ISHI). She has also served on executive committees of several national and international scientific organizations, namely as: Vice President-Asia Pacific Histocompatibility & Immunogenetics Association (APHIA), Chair: International Committee of the American Society for Histocompatibility & Immunogenetics (ASHI), and also as Treasurer- Indian Immunology Society.

Expert Talk on **“Catch the Devil in the Details: Innovative Immunological & Immunogenetic Assessment For Superior Transplantation Outcome”**



Dr. Sandeep K. Vashist
(Fapon Biotech Inc., Germany)

Dr. Sandeep K. Vashist is the Senior Global IVD Product Director at Fapon Biotech Inc., Germany, Chief of the Research Advisory Board at Sensing Self Pvt. Ltd., Singapore, and, Advisory Board Member at Calciscon AG, Switzerland. He has held senior management roles in large IVD companies, such as Perkin Elmer (IDS), LabSystems Diagnostics, and Bristol-Myers Squibb. Sandeep invented and pioneered many FDA-approved and CE-certified IVD products, devices, and technologies. He has 12 international patents, over 300 publications, 3 books, and ~8450 international citations. He is the Editor and Reviewer of several journals, funding agencies, and international organisations, and has led many international initiatives in IVD and healthcare. Sandeep is an IVD veteran with over two decades of rich global experience.

Expert talk on “**Innovative solutions for disease diagnosis using in vitro diagnostic (IVD) technologies: Current perspectives and challenges**”



Dr. Anita Sharma
(Fortis Hospital, Mohali Punjab, India)

Dr. Anita Sharma is a qualified Clinical Microbiologist and is presently working as Head Department of Laboratory Medicine & Infection Control Program, at Fortis Hospital (a tertiary care NABL, NABH & JCI accredited corporate hospital) in Mohali, Punjab, India. Her areas of research interests are HCAI epidemiology, patient safety & Antimicrobial stewardship. Dr. Sharma is serving as an active member of the various committees in the present hospital that includes: safety committee, quality assurance & patient safety committee and pharmacotherapeutics committee. She is collaboratively working with the local community and several government authorities on diseases of public health importance.

Expert Talk on “**Decoding Infections: Advancements in Diagnostics for Precision Identification and Management of Infectious Diseases**”



Dr. Gurbir Singh

(Chitkara School of Health Sciences, Chitkara University, Punjab, India)

Dr. Gurbir is working as Professor Emeritus Chitkara School of Health Sciences, Chitkara University, Punjab, India. He is highly commended Medical Administrator with 43 years of illustrious experience in the medical field. After putting in 28 years of meritorious service in the Air Force and holding important positions, ranging from Senior Medical Officer, Registrar of a 400 bedded hospital, specialist medical officer (pathologist) & Commanding officer of a 78 bedded hospital he joined Fortis Healthcare Limited – one of the leading hospital chains in India. He is presently working as Regional Medical Director – North, and has contributed immensely over the 15 years of his stay with Fortis as Facility Director of a number of Fortis Hospitals across India and provided expertise for accreditations, setting up Greenfield Multi-Specialty Hospitals, preparing SOPs and heading various committees & CMEs.

Expert Talk on “**Advances in Medical Imaging**”



Dr. Deepander S. Rathore

(Homi Bhabha Cancer Hospital & Research Centre, Mullanpur, Punjab)

Dr. Deepander S. Rathore is working as an Assistant Professor at Homi Bhabha Cancer Hospital & Research Centre, at Mullanpur, Punjab. He is a qualified Onco-Radiologist, with special interest in Genitourinary, Colorectal and Breast disease management. He has more than 7 years of experience in teaching DNB students and has 12 National and International publications.

Expert Talk on “**Emerging Technologies in Mammography**”



Mr. Santosh Kumar

(University College Hospital, London, United Kingdom)

Mr. Santosh Kumar is a certified Nuclear Medicine Physicist/Technologist with extensive clinical background in general nuclear medicine, nuclear cardiology, PET/CT, PET/MR diagnostic medical imaging and targeted radionuclide therapy. He holds a certification as a radiation safety officer from Bhabha Atomic Research Centre (Mumbai, India). His areas of interest are radiation protection, clinical research and quality control of medical equipment. He is currently working as senior nuclear medicine technologist at University College Hospital in London (United Kingdom), which is one of the largest nuclear medicine departments in UK, performing 15000 studies every year.

Expert talk on “**Radiation Protection Measures in Imaging**”



Dr. Kamaljeet Singh Randhawa

(Department of Radiodiagnosis, Fortis Hospital, Punjab, India)

Dr. Kamaljeet Singh Randhawa is a consultant radiologist at the Department of Radiodiagnosis, Fortis Hospital, Punjab, India. He has been awarded with Invest in Youth Programme Award by European Society of Radiology in 2020) and Young Professional Award at the Amputation Prevention Symposium, in USA (2022). He has over 5 publications and has co-edited a book (An Atlas of Signs in Neuroradiology). He has been presenting his research findings at European Congress of Radiology (ECR), in Vienna (Austria – 2018, 2020, 2021), International Symposium on Endovascular Therapy (ISET), in Hollywood, (USA – 2019), and IRIA Annual Conference, in Ahmedabad, (India – 2020).

Expert talk on “**Insights into Radiology: Navigating Modalities, Approaches, Challenges, and Procedures in Modern Medicine & Diagnostics**”



Dr. Vishavdeep Goyal

(Zonal Director, Fortis Hospitals, Ludhiana & Amritsar, India)

A National Award winning healthcare professional, with more than 16 years of experience in Hospital and Healthcare industry, Dr. Vishavdeep Goyal with his Medical background and past experience in Public Healthcare system, brings in a strong focus on clinical governance and patient safety to the Hospital Industry. With his training in Management and Finance he has developed expertise in managing P&L, strategic planning and business growth. With strong analytical skills, people management skills & expertise in cost optimization and customer service delivery, he has the experience of working with Hospitals in different stages of the Business Life Cycle to drive higher profitability through process re-engineering and building operational efficiencies.

He is a graduate in Medicine from Calicut Medical Calicut, Kerala and then followed up with the Post Graduate Program in Management from the Indian School of Business, Hyderabad. He has also done a Certificate Executive Program in Managerial Excellence in Healthcare from Indian Institute of Management, Ahmedabad.

Besides holding prominent positions in the private sector, he also has considerable experience of Public Health Systems as well and handled diverse roles including Clinical, Managerial and Administrative in nature. He has worked as Medical Officer and Nodal Officer, RSBY Insurance Project at Employee State Insurance Healthcare, Government of Haryana from July 2006 until April 2012 and handled key responsibilities which included managing a mass Public Health Insurance scheme, devising papers and recommendations for policy decisions at the State level, organizing state and national level conferences, managing National and International Auditors and Surveyors and representing the State at various other forums.

He is a recipient of National Award for ‘Outstanding Individual Contribution in Program Implementation of RSBY in the state of Haryana by Union Ministry of Labour & Employment (Government of India), and was awarded the Top Manager Of The Year in 2019 by Standard Chartered Rating GmbH and International Rating Association (Hong Kong) for impeccable business reputation. As a guest speaker, Dr. Goyal has delivered several talks on healthcare & its management.

Expect Talk on “**Introduction to AI & Health Diagnostics**”



Dr. Nitin Kumar Singhal

(National Agri Biotechnology Institute, Punjab, India)

Dr. Nitin Kumar Singhal is a distinguished scientist whose academic journey has been marked by excellence and innovation. With a Ph.D. from IIT Bombay and an MSC from IIT Roorkee, his foundation in nano-biotechnology was set early on. Presently serving as a Scientist E at the National Agri-Food Biotechnology Institute, Mohali, Dr. Singhal contributes significantly to cutting-edge research. His accolades speak volumes about his expertise and commitment to advancing scientific frontiers. He was honored with the Best Paper Award from IIT Bombay and was a proud recipient of the prestigious Fulbright Fellowship, an accomplishment that underlines his global recognition and impact.

Dr. Singhal's scholarly contributions are prolific and impactful, evidenced by his extensive publication record. His research, spanning areas like nanobioscience and sensor development, has been published in esteemed journals such as Bioconjugate Chemistry, Biosensors and Bioelectronics, and ACS Applied Materials & Interfaces. Moreover, his role as an Associate Editor at Frontiers of Nanotechnology and membership in the National Academy of Sciences reflect his standing in the scientific community, where he plays a pivotal role in shaping the discourse and direction of groundbreaking research. Dr. Singhal's dedication to pushing the boundaries of knowledge in biotechnology, nanotechnology, and related disciplines inspires fellow researchers and aspiring scientists worldwide.

Expect Talk on “**Aptamers: Revolutionizing bacteria detection and diagnostics through advanced biosensing technologies**”



Dr. Ashok Rattan
(Redcliffe Labs, Delhi, India)

Prof. Ashok Rattan is a medical microbiologist by profession and is presently working as a Chairman, Medical Committee and Quality at Redcliffe Labs, Delhi, India. He was conferred with APJ Abdul Kalam Award for Lifetime Contribution to Medical Sciences in 2018 and Shrinivas Oration in 2021 by Indian Association of Microbiologists for his contribution to laboratory diagnosis of Tuberculosis. He was also conferred KGMU Foundation day oration by Department of Microbiology in 2022. He served as an advisor in Pathkind Laboratories and has been delivering regular online lectures as a Professor and Mentor for African Health Research Organization University being run from Glasgow, Scotland.

Prof. Rattan has held chief positions in academics, such as: Additional Professor (All India Institute of Medical Sciences, New Delhi), Demonstrator and Lecturer (JN Medical college, Aligarh, Professor & Head (Mahatma Gandhi Medical University, Jaipur), Professor (Hamdard Institute of Medical Sciences and Research, New Delhi), and Visiting Professor (Sharjah Medical College, UAE).

Prof. Rattan has a vast industrial research experience working as a: Director (Ranbaxy New Drug Discovery), CEO (Fortis Clinical Research Ltd), Director (Religare SRL Diagnostics), Medical Director and COO (Star Metropolis), Advisor (Pathkind Labs), Chairman, Laboratory Medicine (JN Medical College, AIIMS and Medanta the Medicity), Medical Microbiologist and Lab Director (CAREC, PAHO/WHO), and Consultant (Public Health Technology Transfer of PHFI).

Prof. Rattan has published over 100 research papers in peer reviewed international journals, guided over 40 students for their MD/MS/PhD, conducted several workshops and has over 30 international patents. He is also the author of NBT sponsored book published by Churchill Livingstone, Antimicrobials in Laboratory Medicine (2000) and has contributed more than a dozen chapters in different books.

Expert talk on “**Enhancing Efficiency and Precision: Exploring the Benefits of Automation in Microbiology Laboratories**”



Dr. Kris See
(Osel Group, Kuala Lumpur, Malaysia)

Dr Kris See is the Medical Director, Chief Clinical and Innovative Scientist of Osel Group, a private healthcare organisation with an extensive presence in therapeutics and collaborative innovative research in Malaysia, Hong Kong, Singapore and US. Under Dr Kris' leadership, Osel Diagnostic Lab was the first to be conferred the prestigious "Asian Halal Brands Awards" in ASEAN. Although a medical professional with a background in neurosurgery by training, Dr Kris also holds a Master of Science in International Public Health, (Liverpool John Moores University, UK), Master of Artificial Intelligence, (IUBH University of Applied Sciences, Germany) and HMS- SEAL, Harvard University, USA.

He is a recipient of the Malaysia "Top 100 Most Influential Young Entrepreneur" award (2017), Malaysia "Top 100 Most Influential Sustainable Entrepreneur" (2018) by United Nations Global Impact, a subsidiary of United Nations Organization, as well as "JCI Peace Angel Award Malaysia" (2018) for his role in transformative work in Nepal Earthquake Relief Program.

Expert talk on "**Revolutionizing Diagnostics: Unleashing the Power of Artificial Intelligence for Healthcare Transformation**"



Dr. Shikha Gupta

(Neelam Hospital, Punjab, India)

Dr. Shikha Gupta is presently working as the Director, Infertility & High Risk Pregnancy unit at Neelam Hospital, Rajpura, Punjab, India. She did her MBBS & MD (Obstetrics and Gynae) from All India Institute of Medical Sciences, New Delhi (Gold Medal in Gynae). She completed her MBA in Health care management from IIM Indore and holds a Fellowship in IVF-ICSI from IRRH, Kolkata, India. She is also serving as the: Chairman of the Ethical committee (Chitkara University, Punjab), Executive member of Patiala Obs Gynae society and Chandigarh Menopausal society (Patiala, Punjab). She is also the course co-director for M.Sc. in Clinical Embryology program being run in collaboration with Chitkara University, Punjab.

Expert talk on “**Innovations in the field of Reproductive Medicine and IVF- gimmicks or necessity**”



Dr. Anish Bhattacharya

(Department of Nuclear Medicine, PGIMER, Chandigarh, India)

Dr. Anish Bhattacharya is presently working as a Professor in the Department of Nuclear Medicine, at PGIMER, Chandigarh. He has over 25 years of teaching & research experience in the field of Nuclear Medicine. He was awarded with Prof. D Subrahmanyam Gold Medal (2014) for his recognition in the field of Biomedical Sciences and Homi Bhabha Memorial Oration Award (2016) in recognition of significant contribution for the promotion & growth of nuclear medicine, teaching and outstanding research. Dr. Bhattacharya is serving as the Editor for the Indian Journal of Nuclear Medicine and is a distinguished member of several National & International societies. He has guided & co-guided over 85 MD/MSc/PhD thesis, published more than 345 research papers in journals of repute and has delivered more than 70 talks at several National & International meetings.

Dr. Bhattacharya's major translational research contribution includes: UDCA pre-treatment for improving specificity of diagnosis of EHBA in neonatal jaundice, Standardization of F-18 FDG labeled leucocyte PET-CT imaging for infection imaging and its application in infected pancreatitis, orthopedic infections, inflammatory bowel disease & diabetic foot osteomyelitis, and Triphasic & SPECT-CT bone scintigraphy in the management of skull base osteomyelitis and plantar fasciitis. He is the principal investigator in several research projects funded by the Department of Biotechnology (Ministry of Science & Technology, New Delhi) and in intramural research projects funded by PGIMER, Chandigarh.

Expert talk on **“Unveiling the Invisible: The Crucial Role of Molecular Imaging in Modern Diagnostics”**



Dr. Shweta Prabhakar
(Fortis Hospital, Punjab, India)

Dr. Shweta Prabhakar is presently working as Head, Quality & Patient Safety at Fortis Hospital Mohali, Punjab. She has over 22 years of experience in the area of Medical operations, Clinical quality, Accreditation (NABH & JCI) & Hospital management at several tertiary care hospitals (Apollo, Dr. RML Hospital & Fortis Hospital). She is also an expert in Lean & Risk Management and has worked as Patient safety officer. Dr. Prabhakar is a recipient of ACHS International 2023 award in Quality & safety. She has keen interests in academics, Challenges in Medical Operations and Clinical Quality Initiatives. Her other achievements and roles includes: NABH Principal Assessor, AHA Certified ACLS/BLS Instructor, Holds Green Belt certification in LEAN SIX Sigma from Varsigma-Exemplar Global, CAHO-GC Member & Punjab State Chairman, Chairperson–Caho student research Mentoring program, Qimpro Certified Level -3 Qualitist, Advance CPQIH–CAHO & HSSC Certified, ISQUA Fellowship & Specialist in Fundamentals of External evaluation, Risk Management Expert–ASQUA & CAHO, Faculty Expert at Leads Canada Program On International Leadership and Problem Solving Pro Expert From QIMPRO. She has also worked as a Medical Process Assurance lead (Pan Fortis), Internal JCI Auditor (Fortis Group) and Regional Quality Head. She has been publishing actively International & National Journals.

Expert talk on “**Interdisciplinary Approaches In Diagnostics**”

SESSION CHAIRPERSONS



Dr. Rajat Sandhir (Professor)
Department of Biochemistry
Panjab University, Chandigarh, India



Dr. Gurbir Singh (Professor Emeritus)
Chitkara School of Health Sciences
Chitkara University, Punjab, India



Dr. SC Bansal
(Former Assistant Professor, Department of
Radiodiagnosis & Imaging PGIMER,
Chandigarh)



Dr. Deepander S. Rathore
(Assistant Professor), Homi Bhabha Cancer
Hospital & Research Centre, Mullanpur, Punjab



Dr. Shivani Malhotra
(Dean, Department of Electronics and
Communications, Chitkara University, Punjab)



Dr. Vishavdeep Goyal
(Zonal Director, Fortis Hospitals, Ludhiana &
Amritsar, India)



Dr. Shweta Prabhakar
(Head, Quality & Patient Safety at Fortis
Hospital Mohali, Punjab)



Dr. Shikha Gupta
(Director, Infertility & High Risk Pregnancy
unit, Neelam Hospital, Punjab, India)

PRE-CONFERENCE WORKSHOPS

ADT-2024 endeavours to provide holistic learning experience to its participants through interactive engaging expert sessions, scientific paper presentations, competitive activities and hands on workshops for the students, researchers and budding professionals. IADT 2024 presents a series of preconference workshops catering to various specialisations, led by eminent industry experts. Different hands-on workshops are being organized related to the theme of 12th ADT conference on **14th March 2024** at Chitkara University in **Offline mode**. All those who are interested in participating are requested to contact the organisers or send email at radt@chitkara.edu.in , mentioning their area of interest along with registration ID for further details by 10th March 2024.

Workshop-I

"Augmenting nutritional disease diagnosis using machine learning and design thinking"

Resource Persons:

Dr. Poonam Khanna, Additional Professor of Nutrition, School of Public Health, PGIMER, Chandigarh.

Dr. Rachana Srivastava, Scientist, School of Public Health, PGIMER, Chandigarh.

Mr. Savitesh Kushwaha, Research Associate, School of Public Health, PGIMER, Chandigarh.

Moderator:

Dr. Shweta Sharma, Assistant Professor, Department of Allied Health Sciences, CSHS, Chitkara University, Punjab.

Introduction: The complexity of the different disease mechanisms and underlying symptoms of the patient population presents massive challenges in developing the early diagnosis tool and effective treatment. Machine learning (ML), an area of artificial intelligence (AI), enables researchers, physicians, and patients to solve some of these issues. The approaches in machine-learning-based disease diagnosis (MLBDD) are slowly gaining popularity. It includes the use of algorithm, disease types, data type, application, and evaluation metrics.

Objectives: The workshop would focus on:

- a. Precision nutrition and current trends of AI in nutrition.
- b. Planning precision nutrition in Diabetes
- c. Nutritional Diagnosis using ML: Development and Deployment of Models

Outcomes: ML learns from the data using various algorithms and is a self-improving process in terms of performance as adjusting during the learning process. ML has been successfully applied to practically every domain such as robotics, education, travel to health care. In the healthcare domain, the ML approaches are mainly used for the purpose of disease diagnosis.

Target Audience: Professionals from industry, faculty members, clinicians, research scholars, and UG/PG students from the field of nutrition and dietetics, public health, nursing and machine learning.

Workshop-II

"Innovations in diagnostics using machine learning in radiology and imaging technology"

Resource person:

Dr. Vinay Kukreja, Director (Research), Chitkara University Research and Innovation Network (CURIN), Chitkara University, Punjab.

Dr. Yogesh Kumar, Research Scientist, Department of Radiation Oncology, University of Alabama at Birmingham, USA.

Moderator:

Dr. Ayush Dogra, Assistant Director (Research), Chitkara University Research and Innovation Network (CURIN), Chitkara University, Punjab

Ms. Nidhi Goswami, Assistant Professor, Department of Allied Health Sciences, CSHS, Chitkara University, Punjab.

Introduction: Radiology, centres on the utilisation of imaging modalities to diagnose and treat diseases. It extends beyond mere disease detection, to encompass treatment guidance and ongoing disease management. Expertise in diagnostic modalities such as Computed Tomography (CT), Magnetic Resonance Imaging (MRI), Positron Emission Tomography (PET), Ultrasound and X-rays guide immediate clinical interventions, treatment monitoring, and chronicle a visual narrative of a patient's health. From the discovery of X-rays to the subsequent integration of artificial intelligence (AI) and machine learning (ML), radiology is continually evolving.

Objectives: This workshop will be targeting audience from radiology background and will provide insights into Machine learning in radiology modalities. This hands-on workshop

- a. Aims to exemplify from the analysis of observations or data to identify patterns and make informed future decisions based on these observations.
- b. Provide the basics of machine learning for predicting or classifying data from pre-established outputs of different modalities.

Outcomes: The future of radiology is guided by the integration of AI and ML. AI algorithms process and interpret data, performing tasks that emulate or even surpass human cognitive capabilities. ML, through exposure to labelled examples, is capable of extracting complex, high-level data, even from unlabelled datasets.

Target Audience: Professionals from industry, faculty members, clinicians, research scholars, and UG/PG students from the field of radiology and imaging technology and AI.

Workshop-III

"Applications of Real-Time PCR for Research & Development in Clinical laboratory Diagnostics"

Resource Person:

Mr. S Shirish Kumar, Manager - Sales Applications, QIAGEN India Pvt. Ltd.

Facilitator:

Mr. Anurag Kanwal, Accounts manager (Chandigarh), QIAGEN India Pvt. Ltd.

Moderator: Ms. Pallavi Aggarwal, Assistant Professor, Department of Allied Health Sciences, CSHS, Chitkara University, Punjab.

Introduction: The polymerase chain reaction (PCR) has become one of the most important tools in molecular diagnostics, providing exquisite sensitivity and specificity for detection of nucleic acid targets. Real-time monitoring of PCR has simplified and accelerated PCR laboratory procedures and has increased information obtained from specimens including routine quantification and differentiation of amplification products. Clinical diagnostic applications and uses of real-time PCR are growing exponentially and real-time PCR is rapidly replacing traditional PCR.

Objectives: The Hands-on workshop would include:

- a. Isolation of DNA from blood and tissue
- b. Step by step protocol for real time PCR (hands on)
- c. Interpretation of CT value
- d. Importance of real time PCR in Disease diagnosis

Outcomes: Real-time PCR is rapidly becoming the “gold standard” of nucleic acid sequence detection and quantification. The strengths of this technology are manifold: ease and speed of assay execution for large batches of samples; highest sensitivity (single targets can be detected in a 10¹²-fold excess of unrelated nucleic acids); wide dynamic range (at least six orders of magnitude) of detection and quantification with a linear relation between log target to detection threshold cycle; highest specificity approaching 100% in well-designed assays with hybridization probes; and differentiation of detected nucleic acid sequences. These advantages ensure that real-time PCR will continue to replace ever more diagnostic assays in the clinical laboratory.

Target Audience: Professionals from industry, faculty members, clinicians, research scholars and UG/PG students from the field of medical laboratory sciences, life sciences, infection control etc.

12th International ADT Conference
Innovation and Integration: The Latest Trends in Diagnostics
Date: 15th & 16th March, 2024

Day-1
15th March 2024

9:00 AM to 9:30 AM

Registration of Delegates & High Tea

9:30 AM to 9:45 AM

Introduction to The 12th ADT Conference & Welcome of the Delegates
Welcome note by **Dr. Sonika Bakshi**
(Dean, Chitkara School of Health Sciences)

Session-I

Track-1: Innovations in Lab Diagnostics
(Expert Talks)

9:45 AM to 10:05 AM	Advancements in Molecular Diagnostics: Pioneering Early Disease Detection Strategies	Dr. Rajat Sandhir Professor Dept. of Biochemistry Punjab University Chandigarh
10:10 AM to 10:30 AM	Catch the devil in the details: Innovative immunological and Immunogenetic assessment for superior transplantation outcome	Dr. Uma Kanga Additional Professor AIIMS Hospital New Delhi
10:35 AM to 10:55 AM	Innovative solutions for disease diagnosis using in vitro diagnostic (IVD) technologies: Current perspectives and challenges	Dr. Sandeep K. Vashist Senior Global IVD Product Director Fapon Biotech Inc. Germany
11:00 AM to 11:20 AM	Decoding Infections: Advancements in Diagnostics for Precision Identification and Management of Infectious Diseases	Dr. Anita Sharma Head Department of Laboratory Medicine & Infection Control Program Fortis Hospital, Mohali
11:00 AM Onwards	Poster Presentation Judgement	Exploretorium Lobby

Session Chairpersons

Dr. Rajat Sandhir, Professor, Department of Biochemistry, Punjab University, Chandigarh

Dr. Gurbir Singh, Professor Emeritus, Chitkara School of Health Sciences, Chitkara University, Punjab

11:20 AM to 12:20 PM

Paper Presentations (Oral)

ADT 101

DNA profiling from eyewear for personal identification

Priyanka Verma* and Reshita

Department of Forensic science, Chandigarh university, Gharuan, Punjab

ADT 105

Detection of Expired and Counterfeit Medicines by using Oximeter and Machine Learning

Vijay Kumar Sinha*, Manish Mahajan, Srikanta Mallik, Ashok Sahoo, Nisha Kumari, Fitri Yakub

ADT 108

Nanoparticles for Malaria Treatment: An Alternative Treatment Modality

Sunil Kumar*, Asifkhan Shanavas, Jyoti Das, Kamran Zaman, Rajni Kant

Department of Clinical Embryology and Reproductive Genetics, Rayat Bahra University, Mohali Kharar, Punjab 140103.

12:25 PM to 12:45 PM

Lamp Lighting & Souvenir Release

Dr. Madhu Chitkara

Pro-Chancellor, Chitkara University

12:45 PM to 12:55 PM

Felicitation of Guest Speakers

12:55 PM to 1:30 PM

Lunch break

Session-II

Track II: Advances in Medical Imaging
(Expert Talks)

1:30 PM to 1:40 PM	Introduction of Track-II: Advances in Medical Imaging	Dr. Gurbir Singh Professor Emeritus, Chitkara School of Health Sciences Chitkara University, Punjab
1:40 PM to 2:00 PM	Insights into Radiology: Navigating Modalities, Approaches, Challenges, and Procedures in Modern Medicine & Diagnostics	Dr. Kamaljeet S Randhawa MD, DNB Consultant radiologist Fortis Hospital, Mohali
2:00 PM to 2:20 PM	Radiation Protection Measures in Imaging	Mr. Santosh Kumar Sr. Nuclear Medicine Technologist University College Hospital 235 Euston Road London
2:20 PM to 2:40 PM	Emerging Technologies in Mammography	Dr. Deepander S Rathore Assistant Professor Dept. of Radiodiagnosis Homi Bhabha Cancer Hospital and Research Centre, Punjab

Session Chairpersons

Dr. Subhash Chand Bansal, Former Assistant Professor, Department of Radiodiagnosis & Imaging, PGIMER, Chandigarh.

Dr. Deepander S Rathore, Assistant Professor, Dept. of Radiodiagnosis, Homi Bhabha Cancer Hospital and Research Centre, Punjab

2:40 PM to 3:20 PM

Paper Presentations (Oral)

ADT 201

Straightening out the comparison: lumbar spine imaging in upright and supine MRI systems

Manpreet Singh

Department of Radio-Diagnosis and Imaging, PGIMER, Chandigarh - 160012

ADT 202

Revolutionizing Breast Cancer Detection: Harnessing Artificial Intelligence in mammography Screening

Nikita

Community Hospital Centre, Bharatgarh, Rupnagar, Punjab

ADT 203

Dose Optimization and Diagnostic Reference Levels in Computed Tomography Imaging - Comprehensive Global Perspective

Man Singh Hada* and Srishti Bhardwaj

Department of Allied Sciences, Chitkara School of health sciences, Chitkara University, Punjab

3:20 PM to 3:30 PM

Felicitation of Guest Speakers

Closing of Day 1

Day -2

16th March, 2024

9:30 AM to 10:30 AM

**Judgement for Working Model Competition
(Venue: Outside Sportorium, Chitkara University)**

Session-I

**Track-III: AI and Digital Health Diagnostics
(Expert Talks)**

9:30 AM to 9:40 AM	Introduction to Track III: AI and Digital Health Diagnostics	Dr. Vishavdeep Goyal Zonal Director Fortis Hospitals Ludhiana & Amritsar
9:40 AM to 10:00 AM	Expert talk- Aptamers: Revolutionizing bacteria detection and diagnostics through advanced biosensing technologies	Dr. Nitin Kumar Singhal Scientist E, National Agri Biotechnology Institute, Mohali
10:00 AM to 10:20 AM	Expert talk- Enhancing Efficiency and Precision: Exploring the Benefits of Automation in Microbiology Laboratories	Dr. Ashok Rattan Chairman Medical Committee and Quality Redcliffe Labs, Delhi
10:20 AM to 10:40 AM	Expert talk- Revolutionizing Diagnostics: Unleashing the Power of Artificial Intelligence for Healthcare Transformation	Dr. Kris See Medical Director, Chief Clinical and Innovative Scientist, Osel Group. Federal Territory of Kuala Lumpur, Malaysia,

Session Chairpersons

Dr. Vishavdeep Goyal, Zonal Director, Fortis Hospitals, Ludhiana & Amritsar

Dr. Shivani Malhotra, Dean Department of Electronics and Communications, Chitkara University, Punjab

Dr. Sonika Bakshi, Dean Chitkara School of Health Sciences, Chitkara University, Punjab

10:40 AM to 11:40 AM

Paper Presentations (Oral)

ADT 301

Development of Augmented Reality (AR) Based Multi-Parameter Monitor for Early Clinical Exposure of Healthcare Students and its Learning Outcome: A Pilot Study

Zeenal Punamiya*, Navita Gupta, Supriya Kulkarni, Amanpreet Kaur

Department of Allied Health Science, Chitkara School of Health Sciences, Chitkara University, Punjab.

ADT 302

Optimizing Radiation Safety in Pediatric DSA: Leveraging Artificial Intelligence for Dose Reduction and Image Quality Enhancement

Aditya Nagrath

Department of Radio-diagnosis and Imaging, PGIMER, Chandigarh-160014

ADT 304

Role of artificial intelligence in the early detection of iron deficiency and vitamin b12: An approach to improve health of pregnant women

Sakshi Jaswal*, Shanoo Sharma, Neha Parihar

Department of Medical Lab Technology, University School of Allied Science, Chandigarh University, Punjab, India

ADT 305

Revolutionizing Healthcare Diagnostics: Integrating Extended Reality, Artificial Intelligence, and Digital Health in the MediXR Insight App

Shivam Sharm*, Archana Mantri

Chitkara University Institute of Engineering & Technology, Chitkara University, Punjab, India

11:40 AM to 11:50 AM

Felicitation of Guest Speakers

Session-II

Track IV: Integrative Approaches in Disease Diagnosis

11:50 AM to 12:00 PM

Introduction to Track IV: Integrative Approaches in Disease Diagnosis

(Expert Talks)

12:00 PM to 12:20 PM	Unveiling the Invisible: The Crucial Role of Molecular Imaging in Modern Diagnostics	Dr. Anish Bhattacharya Professor, Nuclear Medicine PGIMER Chandigarh
12:20 PM to 12:40 PM	Innovations in the field of Reproductive Medicine and IVF-gimmicks or necessity	Dr. Shikha Gupta Director - IVF & Gyne Endoscopy, Neelam Hospital, Punjab

LUNCH BREAK

12:40 PM to 1:30 PM

1:30 PM to 1:50 PM	Interdisciplinary Approaches in Diagnostics	Dr. Shweta Prabhakar Head Quality & Patient safety Fortis Hospital, Mohali
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Session Chairpersons

Dr. Shweta Prabhakar, Head Quality & Patient safety, Fortis Hospital, Mohali

Dr. Shikha Gupta, Director - IVF & Gyne Endoscopy, Neelam Hospital, Punjab

1:50 PM to 2:50 PM

Paper Presentations (Oral)

ADT401

Correlations Among Nutritional Consumption, Kinetic Behaviour, and Adiposity Indicators in Perimenopausal Females: An Analytical Cross-Sectional Investigation

Aditi Vohra*, Tarvinder Jeet Kaur

Department of Home Science, Kurukshetra University, Kurukshetra (Haryana), India

ADT 402

Innovative Study to Develop a Therapy Incorporating with Exoskeletal Hand Orthosis Powered by Functional Electrical Stimulation

Priyanka Dangi*, Narkeesh Arumugam

Department of Physiotherapy, Punjabi University, Patiala, Punjab, 147001

ADT 404

Comparative Study on the Pharmacological Treatments of Men with Low Sperm Count and Motility

Slermien G. Slermien*, Ram Dayal, Kiranjeet Kaur, Gaurika Aggarwal, Navita Gupta, Shikha Gupta

Department of Clinical Embryology, School of Allied Health Sciences, Chitkara University, Punjab-140401, India

ADT 411

A Study on Laser-Assisted Hatching Techniques and Their Impact on In Vitro Fertilization (IVF)

Harnoor Singh Manesh*, Manisha Adhikari, Sumandeep Kaur Grewal, Sunil Kumar

Department of Clinical Embryology and Reproductive Genetics, Rayat Bahra University, Mohali Punjab

ADT 414

Enhancing Hospital Safety: Strategies for Effective Infection Control

Saksham Saini* and Kajal Sharma

Chitkara School of Health Sciences, Chitkara University Rajpura Punjab, India-140401

2:50 PM to 3:00 PM

Felicitation of Guest Speakers

3:00 PM to 3:15 PM

Cultural Program

3:15 PM to 3:30 PM

Valedictory Ceremony & Prize Distribution

3:30 PM to 3:40 PM

Vote of Thanks

12th International ADT Conference

ABSTRACTS

ADT101

DNA Profiling From Eyewear For Personal Identification

Priyanka Verma* and Reshita

Department of Forensic Science, Chandigarh University, Gharuan, Punjab, India

**Corresponding author: privanka.pharma@cumail.in*

Abstract:

According to the survey of 2020, 45% of population is using spectacles in India. The purpose of this study is to identify and extract of DNA from nose pad of the bespectacled individuals that can help forensically in identification and solving crime cases. It is noted that the sweat submerged around nose pad of bespectacled can be a source of DNA for individualization. There is only one possible way that human sweat would contains DNA is if it contains cells, such as skin cells that have sloughed off within the sweat itself. So, in the study the isolated DNA from sweat was quantified using agarose gel electrophoresis (0.8%) and 1.0ng of DNA was subjected to multiplex PCR amplification using powerPlex 21 and GlobalFiler™ kits. Capillary electrophoresis of amplified products was done with 3130 and 3500XL genetics analyzers. The data were analyzed using GeneMapper ID Software Version 3.2 and GeneMapper™ ID-X software v1.6 which gives successful result of identification. Despite of Weather condition, complete DNA profiles were obtained from 87.3%. This data suggested that sweat collected from bespectacled individuals can be good source of DNA profiling.

ADT102

Phytochemical, Antioxidant and Cytotoxic Study of *Portieria hornemannii* Against Oral Cancer Cell Lines

Akanksha Pangotra and Louis Cojandaraj A*

Department of Medical Laboratory Sciences, School of Allied Medical Sciences, Lovely Professional University, Phagwara, Punjab, – 144411, India

**Corresponding author: louis_2286@live.com*

Abstract:

Portieria hornemannii, a marine algae belonging to group Rhodophyta have been evaluated for the presence of different phytochemical constituents, antioxidant activity and cytotoxicity study using four different solvents (acetone, chloroform, ethyl acetate and methanol). The extracts of the seaweed were obtained through soxhlet extraction with different solvents and were used for evaluating phytochemical profile, antioxidant potential and cytotoxic effect against oral cancer cell lines. The species exhibited presence of significant phytochemical bioactive metabolites. The extracts were subjected to different antioxidant activities for assessment of antioxidant potentiality through ABTS scavenging, DPPH scavenging, H₂O₂ scavenging, superoxide dismutase scavenging and lipid peroxidation assays. The phytochemical extract obtained from ethyl acetate showed the highest antioxidant activity for ABTS, DPPH, H₂O₂, Lipid peroxidation followed by acetonic phytochemical extracts for ABTS, DPPH, H₂O₂ and methanol extract for lipid peroxidation. For SOD activity the phytochemical extract from chloroform showed highest percent inhibition followed by phytochemical extract of ethyl acetate. All the phytochemical extracts obtained were screened

for in vitro cytotoxic study by using MTT assay and then evaluated for cell viability through obtaining IC₅₀ value for all the solvent extracts against different oral cancer cell lines. Ethyl acetate extract showed highest cytotoxic effect followed by acetonic extract. Based on phytochemical analysis, radical scavenging activities and the cytotoxic assay it was found that *Portieria hornemannii* possesses an array of phytochemical bioactive metabolites which exhibit significant antioxidant activity and cytotoxic potential.

ADT103

Investigating The Acute Toxicity of Chloroformic Extract From *Murraya Koenigii* Leaves

Pearl Pinto and Louis Cojandaraj*

Department of Medical Laboratory Sciences, Lovely Professional University, Phagwara-144411, Punjab, India

*Corresponding author: louis.23330@lpu.co.in

Abstract:

Murraya koenigii (MK) is a highly valued plant for its medicinal properties and mostly considered for its hypoglycemic, hepatoprotective, antioxidant, and hypolipidemic abilities. In our previous study, chloroformic extract of MK leaves exhibited the highest pancreatic lipase inhibitory activity of 53.42% when compared to methanolic and aqueous extracts. Study by Tembhurne et al., 2017 has shown that ethanolic extract of MK is safe up to 1000 mg/kg. Despite the pharmacological advantages of MK, there was limited proof regarding the harmful impacts of the chloroformic extract. Hence the current study was undertaken to focus on acute toxicity of chloroformic extract in rats. The experiment was conducted on female Wistar rats, administering a single oral dose of 200 mg/kg and 2000 mg/kg of chloroformic extract of MK. The rats were observed for a period of 14 consecutive days. At the conclusion of the experiment, the body weights, relative organ weights, as well as selected hematological and biochemical parameters were measured. Liver and kidney sections were observed for histopathological abnormalities. Additionally, the animals were closely monitored for any behavioral changes throughout the study. There were no fatalities, but rats exhibited reduced activity and loss of appetite 24 hours following the administration of a single dose of 2000 mg/kg. Our results suggest that chloroformic extract of MK, given at a dose of 2000 mg/kg, presents slight risks due to the presence of lymphocytic infiltration in the liver. However, this does not indicate significant toxicological implications, as liver and renal function tests showed all parameters within normal ranges for rats. Further research is underway to explore the subacute toxicity of the chloroformic extract of MK, which may yield valuable insights into its advantages and shed light on any toxic properties associated with *Murraya koenigii* leaves.

ADT104

Advancements In The Non-Invasive Techniques To Diagnose Dry Eye

Aleena Saifi^{1*}, Renu Thakur¹, Mansi Chitkara²

¹ *Chitkara School of Health Sciences, Chitkara University, Punjab, India*

² *Nanotechnology Lab, Chitkara University, Punjab, India*

*Corresponding author: aleena.saifi@chitkara.edu.in

Abstract:

Dry eye disease (DED) is complicated due to multiple contributing factors, resulting in symptoms ranging from discomfort to visual decline. The conventional diagnostic process of DED is mainly dependent on the symptoms reported by patients in conjunction with invasive diagnostic techniques. On the other side, there have been the latest developments in non-invasive evaluation procedures and this has made the diagnosis and treatment of this common condition much easier. This study highlights the new non-invasive diagnosis tools for dry eye disease today. Innovations such as the use of non-invasive tear breakup time (NITBUT) measurement and interferometry provide clinicians with much-needed data for the tear film dynamics without interfering with or threatening the integrity of the ocular surface. Furthermore, tear osmolarity measurement has provided a reliable biomarker for identifying the hyperosmolarity of the tear film. The use of this marker allows for objective assessment and subsequent monitoring of disease severity in DED. In the same manner, the image modalities of the eye, including the anterior segment optical coherence tomography (AS-OCT) and meibography help to create microscopic details of the integrity of epithelial and glandular function. These imaging modalities, therefore, allow for the early detection of DED subtypes as well as their detailed characterization. These non-invasive imaging methods provide clinicians with a comprehensive understanding of surface changes in the eye that emanate from DED, thus, facilitating the customized treatment modalities. Not only do these advances promise to shed light on the mechanisms of DED but they will also allow us to identify the potential therapeutic targets. Through the inclusion of these non-invasive diagnostic techniques within clinical contexts, the ability of clinicians to accurately diagnose DED, develop optimal treatment approaches, and maximize the positive effects on patient outcomes can be enhanced.

ADT105

Detection of Expired and Counterfeit Medicines By Using Oximeter and Machine Learning

Vijay Kumar Sinha^{1*}, Manish Mahajan², Srikanta Mallik³, Ashok Sahoo⁴, Nisha Kumari⁵, Fitri Yakub⁶

¹*Chitkara University School of Engineering & Technology, Chitkara University, Himachal Pradesh, India*

²*Military College of Telecommunication Engineering, Mhow, M.P.India.*

³*Cognizant Technology Solutions Pvt.Ltd, Abudhabi, UAE.*

⁴*Graphic Era Hill University, Dehradun, India.*

⁵*Chandigarh Engineering College, Landran, Mohali, India.*

⁶*Malaysia-Japan International Institute of Technology, Universiti Teknologi Malaysia.*

*Corresponding author: yk.sinha@chitkarauniversity.edu.in

Abstract:

The counterfeit and expired drugs sold in market are huge concern for society as well as for health professionals. As its reportedly found cases selling of fake and expired medicines in market to make easy profit at the cost of patient's health and risk of life. Patients and doctors can only check the printed labels and trust upon it. They have no options to verify the effectiveness and originality at their hands. Sometimes expired medicines are repacked and supplied in the market intentionally. Sometimes erased, faded and torn printing labels make its difficult to judge the expiry date when stored at home for long time. To solve these problems

we propose a machine learning algorithm based upon oximeter light absorption and refraction ratio. As due course of time medicines changes its chemical structure due to reaction with environment oxygen and humidity present in air. Noticeable differences found in light absorption and refraction between fresh medicine and old expired medicines. Similarly these differences found in genuine medicines and adulterated medicines. The amount of absorption is compared with the original reference table for its authentication and verification. A significant difference with a threshold value is declared for the result categorize the result as fake, expired or genuine medicine.

ADT106

Effect of hyperglycemia on electrolyte balance in Type-II Diabetes Mellitus

Gurpreet Kaur Gill*, Inderjeet Singh, Juhi Kataria

Department of Biochemistry, Khalsa College of Pharmacy & Technology, Amritsar, Punjab, India

**Corresponding author: gurpreet_pau25@yahoo.com*

Abstract:

Type-II diabetes mellitus is expected to become one of the major causes of death globally. Electrolytes have significant role in providing signs of disease progression in diabetes. The relationship between blood glucose and electrolytes is complex and electrolyte imbalance may affect the course of diabetes and its management. Significant biochemical profile can be used as predictive diagnostic clinical tool. Study was conducted with the aim to evaluate effects of hyperglycemia on electrolyte balance in type-II diabetes mellitus among different age groups of diabetic patients viz. 30-45 years and 45-60 years. The study included a total of 60 subjects, out of which, 30 subjects were of type-II diabetes mellitus patients. 30 subjects were healthy controls with normal fasting glucose. Patient history was procured on a structured performa. Well informed consents were taken from the study participants. Blood samples were taken by venipuncture and processed for biochemical investigation. The estimated level of glucose in type-II diabetes mellitus was significantly high (213.5 ± 30.2 mg/dl) as compared to the level of glucose encountered in healthy controls (96.3 ± 6.82 mg/dl). The most common electrolyte abnormalities in elderly patients were dysnatremias, and age has been found to be independent risk factor for developing hypernatremia. The severity of abnormalities is dependent on many factors including underlying infirmities, medications. Also, electrolyte levels were evaluated in patients on different medications for diabetes mellitus. The level of sodium was found maximum in diabetic patients taking insulin injections whereas patients taking metformin had lesser concentration of sodium. Calcium levels were found to be significantly lower in diabetic patients on metformin, Chloride levels were found to be higher in patients taking glimepiride. Hyperglycemia produced osmotic diuresis causing changes in electrolytes between intra and extracellular spaces, decreased potassium, calcium and chloride and increased sodium due to insulin dysfunctioning in Type II diabetes mellitus patients.

ADT107

Potential Applications of Metallic Nanoparticles in Anticancer Research

Sushmita Jain and Satyam Kumar Agrawal*

Center for in vitro Studies and Translational Research, CURIN, Chitkara University,
Rajpura-140401, Punjab, India

*Corresponding author: satyam.ka@chitkara.edu.in

Abstract:

Metallic nanoparticles (MNPs) have generated much interest in anticancer research. Different MNPs, such as gold, silver, platinum, silica, and iron oxide, have potential applications in addressing cancer due to their unique characteristics. It includes a high surface area-to-volume ratio, controlled size and shape, and surface plasmon resonance (SPR). Synthetic processes, such as chemical, physical, and green production methods can control the physicochemical features of these nanoparticles. One of the main processes by which MNPs exhibit anticancer properties is their capacity to cause cellular damage via a variety of pathways. They have been shown to induce apoptosis in cancer cells, rupture cellular membranes, produce reactive oxygen species (ROS), and obstruct DNA replication and repair processes. Anticancer moieties have been widely transported by MNPs, increasing their ability to deliver to tumor locations and reducing systemic toxicity. Briefly, silver nanoparticles are preferred because of their strong antibacterial and anticancer characteristics. Gold nanoparticles have become attractive options for cancer therapy, because of their SPR characteristics, biocompatibility, and ease of functionalization. Further, platinum nanoparticles can stop DNA replication and cause cancer cells to induce cell cycle arrest, they are frequently utilized as chemotherapeutic treatments. Hence, MNPs have a lot of potential for creating new cancer treatments that are more effective and have fewer adverse effects. To optimize nanoparticle compositions, enhance targeting tactics, and assess their safety profiles for clinical translation, exhaustive research is needed.

ADT108

Nanoparticles for Malaria Treatment: An Alternative Treatment Modality

Sunil Kumar^{1,2*}, Asifkhan Shanavas³, Jyoti Das⁴, Kamran Zaman¹, Rajni Kant¹

¹Regional Medical Research Centre Gorakhpur UP, 273013.

²Origin LIFE and Department of Clinical Embryology & Reproductive Genetics, Rayat Bahra University,
Mohali Kharar, Punjab 140103.

³Institute of Nano Science and Technology (INST) Mohali Punjab, SAS Nagar, Punjab 140306.

⁴National Institute of Malaria Research, Sector-8, Dwarka, New Delhi-110077, India

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Abstract:

Malaria remains a significant global health challenge, with millions of cases reported annually, particularly in developing countries. The emergence of drug-resistant strains of the malaria parasite, Plasmodium, has underscored the urgent need for novel therapeutic approaches. Nanoparticle-based drug delivery systems have garnered considerable attention as promising alternatives for malaria treatment. Their small size allows for enhanced drug penetration into infected cells and tissues, improving therapeutic efficacy. Moreover, nanoparticles can be engineered to encapsulate a wide range of antimalarial drugs, protecting them from degradation and facilitating controlled release kinetics. In the current study, we

prepared the synthetic peptides and bovine-loaded Nanoparticles, and conjugated Nanoparticles. These nanoparticles showed functionalized with targeting ligands, such as antibodies or peptides, to selectively deliver drugs to infected cells, minimizing off-target effects and reducing systemic toxicity. In the Current study, we have tested the Nanoparticles in vitro in 3D7 and RKL9 strains of the *Plasmodium falciparum*. This *in-vitro* assessment of nanoparticle-based drug delivery systems showed promising treatment modalities with 100% clearance of parasite load confirmed with the help of FACS studies. The formulation also reduced the Schizonts maturation assay was also performed and found it was also showing the stage-specific activities. In conclusion, nanoparticle-based drug delivery systems represent a promising alternative treatment modality for malaria. Their ability to improve drug efficacy, overcome resistance, and minimize side effects make them attractive candidates for further research and development in the fight against this deadly disease.

ADT109

Improved Reality of Advanced Vision Therapy with Exploring Smart Glasses

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Abstract:

This study is a cross sectional-based study which indicates revolution of possibility of exploring smart glass and reality of advanced vision therapy. Like a cohort-based study 69 participants here specific vision therapy is introduced powerful edge cutting technical smart glasses and to provide the prevalence of vision therapy with increasing the matter.

Aim: Here highlight the probable development in vision therapy with advancement of smart glasses. *Background:* Now a days visual challenge is become more and in increasing mode and vision therapy intervention is become authoritative. In this study it is exposed about wearing technology, came to know of statistical analysis and acknowledged of personalized treatment mode. *Methodology:* Very careful approach was conducted in this study with ANOVA statistical process was followed to evaluation of treatment effectivity. This is cross sectional-based study which allowed for a total information of the effect of the smart glasses and applied augmentation of V/A, coordination of eye movement for 69 participants. *Results:* Here it is exposed that significant improvement of visual acuity (V/A) with average 25%, noticeably 30% improvement of eye movement coordination and 92% implicate and usage of this therapy among 69 participants. Here paired t test was applied and Pearson correlation coefficient is also be. This statistical analysis validates the outcome which provide depth perception on the specified matter. *Explanation of Technology:* May be it will be essential for achievement of this technology. With innovative display capability of smart glasses provide dynamic visual exercise. Application of AR and its prominent featuring provide proper stimuli for advance vision therapy experiences. *Conclusion:* This is a Cross sectional-based study with cohort 69 subjects get considerable amount of visual parameter improvement with this technology. With this technology detailed statistical analysis, technological specification, and usage of mobile app offers a thorough in depth investigation for understanding of this research.

ADT110

The Impact of Intraocular Pressure on Retinal Nerve Fiber Layer Thickness: A Comprehensive Review

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Abstract:

Background: Glaucoma is a leading cause of blindness all around the world. Most of the therapies for glaucoma management are based on IOP control and reduction. This article is dedicated to find out the role of IOP in RNFL thickness loss. **Method:** The review began with a search of the PubMed, google scholar database. The inclusion criteria required publications in peer-reviewed journals of clinical studies evaluating effects of IOP control on RNFL thickness. 17 articles published from 2017-23 period with the same objective were included for review. mendeley was used for referencing purpose. **Result:** The evidence overwhelmingly supports a strong link between increased intraocular pressure and decreased retinal nerve fiber layer thickness. Maintaining good IOP control is crucial for preventing or slowing down glaucomatous damage and vision loss. **Conclusion:** IOP rise is a primary risk factor for RNFL destruction, which is a defining feature of glaucoma. Both chronic and acute IOP changes contribute to RNFL loss. Future research should continue to explore the complex interplay of various factors contributing to glaucoma progression. To protect eyesight and avoid permanent visual loss, clinicians should prioritize IOP control as the cornerstone of glaucoma care.

ADT111

To Compare Central Corneal Epithelial Thickness In Pre And Post Contact Lens Wear Of Neophytes

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Abstract:

Aim: To study the central corneal epithelial thickness of first time contact lens wearers from baseline to one month follow-up. **Methods:** Subjects within the age group of 18 years to 30 years from Contact lens department of a Tertiary eye hospital in Karnataka were recruited for this observational and comparative study with subjects consent and ethical approval. All the baseline investigations were done and normal healthy subjects who were first time contact lens wearers only were recruited. Ideal contact lens fitting was given and with the help of anterior segment Ocular coherence tomography (AS-OCT) non-invasively central corneal epithelial thickness was measured both before wearing contact lens and 1 month after wearing contact lens. Data collected was analyzed statistically to check for any effect of contact lens on CCT. **Results:** A total of 6 subjects (12 eyes) including 5 males (83.33%) and 1 female (16.66%) were analyzed. Mean age of the subjects were 25.17 ± 4.07 . Pre and Post contact lens wear (baseline and 1 month post contact lens wear) test values remained unchanged. There was no effect in central corneal epithelial thickness due to contact lens wear even after one month

of follow-up. Conclusion: The central corneal epithelial thickness was not affected due to soft contact lens wear. And that the AS-OCT is a simple, quicker and a novel method of measuring CCET non-invasively.

ADT112

Clinical, Laboratory Analysis and Comparative Evaluation of Serological Tests for Diagnosis of Scrub Typhus Disease In Madhya Pradesh, India

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Abstract:

Background: Scrub typhus is difficult to distinguish from other acute febrile illnesses because of its non-specific clinical signs and the Indian population's comparatively low eschar rate. Thus, laboratory tests are the main method of diagnosis. The majority of scrub typhus diagnosis made by antibody-based serological testing. Here, we assessed the efficacy of IgM ELISA, ICT and Weil Felix as diagnostic tools for identifying *O. tsutsugamushi* antibodies in patients' acute serum. Methodology: The study included 524 patients with acute undifferentiated febrile illness (AUFI). Patients age from 3 to 75 years included. IgM ELISA, Weil Felix test, and rapid immune-chromatography (ICT) serological diagnostic techniques used to identify scrub typhus cases. Clinical characteristics, medical laboratory parameters, and final results analyzed. Results: We observed that for the diagnosis of scrub typhus, IgM ELISA with a cutoff titer of 0.5 OD has excellent diagnostic accuracy (sensitivity of 99.9% and specificity of 99.1%). The ICT utilized in this investigation exhibited a high specificity of 94.19% and sensitivity of 94.87%, with acute serum samples. As a screening or point-of-care test, ICT must be more sensitive, but it may afford to make certain compromises in terms of specificity. The ideal threshold for ICT should be assessed in various contexts. Conclusion: The implication and importance of Rapid Immunochromatography Test (ICT) play crucial role for the diagnosis of scrub typhus. ICT provides rapid diagnostic point –of-care test (POCT). Rapid immunochromatographic test simple and trendy because of quick result, less requirements, less expertise and easy to perform in remote and rural areas.

ADT201

Straightening Out the Comparison: Lumbar Spine Imaging In Upright And Supine MRI Systems

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Abstract:

Imaging the lumbar spine presents unique challenges due to its dynamic nature and weight-bearing function. Traditional supine MRI has been the gold standard for evaluating

lumbar spine pathology, but recent advancements have introduced upright MRI systems, allowing imaging in weight-bearing positions. This paper reviews the comparative effectiveness of upright and supine MRI systems in lumbar spine imaging, aiming to provide insights into their respective advantages, limitations, and clinical applications. Supine MRI offers high-resolution images and is well-established in clinical practice, providing excellent visualization of anatomical structures. However, it may not accurately capture dynamic changes in spinal alignment and functional parameters. In contrast, upright MRI allows for imaging in weight-bearing positions, offering valuable insights into conditions such as spinal instability and disc herniation. Upright MRI provides a more physiological assessment of spinal biomechanics, which may guide treatment strategies and improve patient outcomes. This paper discusses the principles behind both imaging modalities and explores their differences in terms of image quality, diagnostic accuracy, and patient experience. Additionally, it addresses safety considerations and patient comfort issues associated with both techniques. By straightening out the comparison between upright and supine MRI systems, this paper aims to guide clinicians and researchers in selecting the most appropriate imaging approach for evaluating lumbar spine pathology. Overall, understanding the strengths and limitations of upright and supine MRI systems is crucial for optimizing diagnostic accuracy and patient care in lumbar spine imaging. Through comprehensive evaluation and careful consideration of clinical factors, clinicians can make informed decisions regarding the choice of imaging modality, ultimately improving outcomes for patients with lumbar spine pathology.

ADT202

Revolutionizing Breast Cancer Detection: Harnessing Artificial Intelligence in Mammography Screening

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Abstract:

Mammography stands as a cornerstone in breast cancer screening, yet challenges persist in interpretation accuracy and efficiency. The integration of artificial intelligence (AI) heralds a revolutionary approach to augment mammography interpretation. AI algorithms, leveraging advanced deep learning and machine learning techniques, possess the capability to meticulously analyze mammographic images with unprecedented precision and rapidity. By harnessing extensive datasets, AI systems excel in detecting subtle abnormalities and minimizing false positives, thereby significantly enhancing radiologists' diagnostic capabilities. This abstract delves into the integration of AI into mammography screening, underscoring its transformative potential in breast cancer detection. Current advancements in AI-powered mammography solutions are meticulously examined, addressing pertinent challenges including data quality, algorithm validation, and regulatory compliance. Through the seamless integration of AI technology, mammography screening programs anticipate achieving heightened consistency, efficiency, and ultimately, improved detection rates, leading to more timely interventions and enhanced patient outcomes. Furthermore, the utilization of AI in mammography has the potential to alleviate radiologist workload burdens, allowing for more

focused attention on complex cases and patient care. This paper underscores the profound impact of AI in revolutionizing mammography practices, heralding a new era of more effective breast cancer screening strategies, and ultimately, contributing to improved public health outcomes.

ADT203

Dose Optimization and Diagnostic Reference Levels In Computed Tomography Imaging-Comprehensive Global Perspective

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Abstract:

Computed tomography is the main modality in Radio diagnosis that contributes to the dose of population among all of the others. Global concerns regarding radiation protection have been raised by the rise of CT exams and doses per person. One of the first stages of dosage optimization is setting up the levels of diagnostic reference. To ascertain the degree of dosage variation between studies for the same CT examination, this study analyzed suggested DRLs in Pudhuchery (India), south India, and India for routinely done CT examinations, which include brain, chest, and abdomen. The DRLs for the head, chest, and abdomen for Pudhuchery and south India were reported by Saravanakumar A. et al., while the DRLs for the chest and abdomen for India were reported by Tsapaki V. et al. The DRLs of these research are also compared in this review paper to DRLs that have been created in the UK, USA, Canada, and Australia. All the reviewed studies had used the volumetric CTDI and DLP as dose indices. The DRLs were set at the dosage distribution's third quartile value. The papers that were analyzed showed that Pudhuchery and India had the lowest DRLs for head and chest examination, respectively. South India and India had the lowest DRLs for abdominal exams in terms of volumetric CTDI and DLP. Wide variability in CT dosages were seen for the same treatment when compared to the UK, USA, Canada, and Australia. The greater degree of study variance may result from the patients' varying body sizes as well as the application of various scan settings for the identical procedures across studies.

ADT204

Magnetic Resonance Imaging (MRI) Evaluation of Age and Gender Related Variations In The Pituitary Gland Height- Normative Data

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Abstract:

Throughout the life the normal development of the pituitary gland depends on varying neuroendocrine changes, therefore the height and volume of pituitary gland naturally differs with age and sex across the life. The study's aim is to assess normative data on the age and gender related changes in pituitary gland height. Additionally, the study intends to analyze and compare both max-sagittal and mid-sagittal height of the pituitary gland, investigating the

variations in these dimensions in relation to age and gender. It is a Retrospective study in which both male and female patients from the age of <1 to above 70 years are included who underwent Brain MRI in the Radio Diagnosis Department. For the height measurements precise T1W images of MRI are used. 324 patients, 160 males and 164 females were included. The max-sagittal and mid-sagittal height of the pituitary gland is measured. Statistical analysis is done using Chi-square and t-tests. P-value <0.05 is considered significant. The study's results provides a standardized data for the pituitary gland height changing with age and gender, in which females possess increased pituitary height than males which will be beneficial in neuroendocrinology along with radio-diagnosis to detect the abnormal conditions (hypopituitarism, micro and macro-adenomas) related to pituitary gland.

ADT205

Advancements in Breast Cancer diagnosis Using Image Processing Techniques; A comprehensive Review

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Abstract:

Breast cancer is one of the deadliest diseases that is encountered among women's. Diagnosis of breast cancer through image processing techniques is a critical area of research in the field of medical imaging. Because of various increasing risk factors early diagnosis plays a crucial role in threatening life of people. This review aims to provide a comprehensive overview of the various methods and technologies that is used in the detection and classification of breast cancer using image processing. By analysing mammographic images, researchers can identify patterns and abnormalities that may indicate the presence of cancerous lesions. Techniques such as segmentation, feature extraction, and classification help in automating the process, leading to quicker and more accurate diagnosis. The review will highlight the advancements in this field, including the use of artificial intelligence and machine learning algorithms to improve the efficiency and reliability of breast cancer detection. Through this in-depth analysis, we aim to contribute to the ongoing efforts to enhance early detection and treatment of breast cancer, ultimately improving patient outcomes and quality of life.

ADT206

Challenges In Paediatric Imaging

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Abstract:

Radiology plays a very important role in the diagnosis and treatment of children, but it comes with various distinct challenges as opposed to adults. One major challenge is ensuring

the safety of the child while capturing clear images. Children are very sensitive to radiation, so it's important to minimize exposure and keep it "as low as reasonably achievable" (ALARA). Paediatric specific protocols should be used and the exposure should be limited to the area of interest. Another challenge is the need for specialized equipment that is suitable for children of different ages and sizes. Imaging machines and techniques need to be adapted to ensure accurate diagnosis and minimize discomfort for the little ones. Additionally, getting young patients to stay still during the imaging process can be a challenge. Therefore immobilisation devices can be used to prevent any motion artifacts. Children may feel anxious or scared, so creating a child-friendly and comforting environment is crucial. These challenges require expertise and a gentle approach to ensure the best possible imaging experience for our little patients. The objective of this poster is to create awareness amongst all the radiological personnel about the importance of radiation protection and how one can overcome various challenges in imaging children.

ADT207

Emerging Technologies in Breast Imaging

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Abstract:

Breast cancer ranks as the most prevailing cancer globally in women. There were an estimated 2.3 million new instances of breast cancer and nearly 685,000 fatalities attributed to breast cancer positioning it as a significant contributor to female mortality worldwide. Breast imaging contributes significantly in early spotting of breast cancer and has witnessed remarkable advancements in recent years which had revolutionized the approach for detection of breast cancer and diagnosis. Various technologies have been explored and still being investigated to increase the detection of breast cancer at early stage and reduce the rate of false positives. This poster provides insight on different emerging technologies in the field of mammography highlighting their key features which includes Digital Breast Tomosynthesis (DBT), Thermography, Contrast Enhanced Dual-Energy Digital Mammography (CE DE DM), Electrical Impedance Tomography (EIT), US and MR guided biopsy, Automated Breast Volume Scanning (ABVS), Microwave Imaging and Computer Aided Detection system (CAD). In addition to mammography, DBT has gained prominence and can help exhibit lesions promptly as it allows more detailed image and on the other hand, CE DE DM highlights microcalcifications from the low energy component. EIT enables to visualize the static three-dimensional distribution of electrical conductivity in breast tissue. Microwave imaging depends on the ability of microwaves to characterize tissues on the basis of dielectric properties. These emerging technologies made it possible to decrease the overall cost and the requirement of redundant procedures. In conclusion, an imaging approach integrating various modalities is essential for comprehensive evaluation and early screening of breast cancer among patients. The preference for these methods is influenced by the patient's age, state and stage.

ADT208

Multimodality Approach in Stroke Imaging

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Abstract:

Neuroradiology is a vital branch of radiology that focuses on the imaging of the central nervous system, comprising the brain, spinal cord and associated structures. It relies on a diverse array of imaging modalities, each providing unique advantage and applications, allowing clinicians to procure comprehensive insights into brain structure, function and pathology. Neuroimaging plays an important role in the evaluation of patients suspected of having stroke. It differentiates ischemic stroke from hemorrhagic stroke and identifies stroke mimics and guides selection of the patient for available therapies. This poster presents a comprehensive overview of modalities used in stroke imaging. The modalities included are Computed tomography (Non-contrast CT, CT angiography, CT perfusion) and MRI (MR angiography, MR perfusion, diffusion weighted imaging). This poster aims to expand the understanding about the modalities used in stroke imaging. This poster will also discuss about the treatment planning of the patient having stroke which aims to reduce brain injury and prevent further complications. It also discusses various entities that can imitate stroke which are usually due to seizures, migraines, tumours and metabolic disruption. In conclusion, a multimodal imaging approach combining CT, MRI, and angiography is essential for the comprehensive evaluation and management of stroke patients. Each modality offers a unique advantage, allowing for error-less diagnosis and treatment selection eventually improving patient outcomes and bringing down the burden of stroke related disability and mortality.

ADT209

Black Bone Imaging a Partial Flip Angle Technique in Acute Head Trauma

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Abstract:

CT is the modality of choice for examination and scrutiny of paediatric skull fractures and brain haemorrhages in acute head trauma evaluation, however particular attention must be paid to potential cancer risks from associated ionising radiation, in particular for young patients who are comparatively more radiosensitive than adults. Paediatric CT has a much higher lifetime radiation risk than adult CT, efforts should be made to limit its practice in addition highlight the necessity of alternative neuroimaging technique such as neurological MRI. A limitation of the CT scan is the lack of sufficient demonstration of soft tissue. MRI is the answer for the imaging of soft tissues and the black bone sequence (a 3D low flip angle gradient echo) is a modified one, low flip angle gradient MRI sequence have paved the way for gain in bone specificity, providing high image contrast between bone and other tissues, as a result, ease clinical interpretation. Black bone MR imaging may be a viable alternative to head CT in the

initial evaluation of paediatric neuroradiology with head trauma and can be consider as primary neuroimaging screening technique. MR neuroimaging offers higher sensitivity and specificity in diagnosing cerebral haemorrhages compared with CT although it is a nonionizing technology with excellent contrast resolution. Despite this, CT highpoints the need of MR imaging for acute care and long-term evaluation of children with brain injury. Radiation free method further supports the use of brain MR imaging as the initial neuroradiological technique for acute head injury in the paediatric population. **Conclusions:** The frequency of paediatric CT procedure has continued to increase, with growing concerns about radiation protection. Although, lifetime radiation risks for children are not negligible, efforts should be made toward implementation of non-ionizing neurological techniques. Neurological MR complemented by a BB sequence is a considerable nonionizing alternative to CT head for the examination of craniofacial skeletons. However, accuracy in the detection of linear fractures and fractures of aerated bone in young children remains limited.

ADT210

Photon Counting Detector CT: System Design and Clinical Application of An Emerging Technology

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Abstract:

Photon Counting Detector CT: Over the past years, Photon counting detectors has made significant advancements in its field. PCD use a direct conversion technology for x ray detection that does not require a scintillator layer. X-ray photons are directly converted into electron-hole pairs by the semiconductor detector material. Electrons move to the anode and are gathered by it to produce electronic signals when a bias voltage is applied throughout the semiconductor. PCD CT system count each individual photon equally, regardless of the measured photon energy. Since, PCDs use a direct conversion technology, detector pixels can be designed without a mechanical separation, which improves the geometric dose efficiency. **Clinical Applications:** Various types of PCD CT systems have been developed to investigate the benefits of this technology, which include reduced electronic noise, increased contrast –to noise with iodinated contrast material and radiation dose efficiency, reduced beam hardening and metal artifacts, extremely high spatial resolution, simultaneous multi energy data acquisition, and ability to image with and differentiate among multiple CT contrast agents. **Conclusions:** PCD CT is an emerging technology that has multiple advantages owing to its unique interaction physics, especially its dose efficient, high spatial resolution, and energy discrimination ability.

ADT211

Advancements In Robotic X-ray Systems: Transforming Medical Imaging with Precision and Efficiency

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Abstract:

A robotic x ray system is concoction of medical imaging technology and robotic x ray system in the ever – evolving landscape of medical technology are emerging as a transformative force There is a combination of the precision of robotics with the diagnostic capabilities of the x ray imaging. These are changing how Radiologists and Radio technician approach diagnosis and treatment. Robotics and Radiology are the two cutting edge fields that have converged in the robotic x ray system. These systems consist of robotic arms or platform equipped with x ray source and detectors. They stand out due to their outstanding flexibility and precision in the movement which allows for a level of control that was previously impossible with conventional X-ray treatments. An application of this system is in minimally invasive surgery.

Types of robotic x rays and CT scan:

Twin robotics of x ray and CT scan: Typically, a twin robotic X -ray system uses two robotic arms together with X- ray imaging technology. These robotic arms can be precisely controlled and an intended to be highly agile. With this configuration medical treatments can be performed with the greater flexibility in positioning and angulation, leading in more precise and focused X ray imaging for diagnosis or therapies. Articulated robotic arms are frequently utilized in twin robotics for x ray systems. The flexibility and range of motion of a human arm are mimicked by these robotics arms numerous joints. They can be precisely controlled to position and such x ray machines during medical procedures. These robotic arms flexibility and range of motion provide ideal positioning for a variety of diagnostic and interventional reasons.

Robotics C arm of x ray and CT scan: A high- tech imaging tool for medicine that uses x rays. Robotic C arm system reorientation is conducted a static model of the system is needed to obtain the requisite precision for 2 D and 3 D overlays C arms systems, which may result in a reduced calibration effort and a concurrent rise in calibrated volume.

Limitations and challenges of X ray and CT scan in robotics: Essential to provide accurate robotic motions since errors can impair the accuracy and dependability of CT x ray images, Patient anatomy varies greatly, making it difficult to design robotic systems that can successfully adapt to a range of body forms and positions, Making quick adjustments in response to unanticipated patient movements during imaging needs sophisticated robotic sensing and control systems, Due to the requirement for comparability and synchronization, integrating robotics with current X ray and CT scan equipment presents difficulties, It's crucial to ensure that we'll being of both patients and healthcare professionals designing robotics systems that adhere to strict safety requirements is difficult yet essential.

ADT212

Solution for Positioning to Overcome the Challenges Faced During Pediatric Radiography

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Abstract:

Radiology has focused on the specialized field of Pediatric imaging to support the healthcare needs of children ranging from newborn to 5 years of age. As we know parents are more anxious when it comes to the Radiological investigations of their children. So, to overcome this anxiety of both the parents and the children investigation strategies should be employed by the technologist. The technologist aims to optimize the radiation dose by giving adequate exposure to Pediatric patients. When we talk about the clinical responsibility of the radiographers, they need to talk politely with the child patients and make him/her comfortable for the whole procedure. The x-ray room should have some interesting posters to distract the child patient so that he/she becomes comfortable and they must follow the ALARA principle. There is also the role of equipment to be employed by the technologist that is minimum Kvp and mAs with proper collimation and other protective barriers to be used such as gonads shielding etc. Successful radiological investigation depends on two things (1) Technologists must be experts in paediatric radiography, (2) Approach and attitude towards the parents and child. Factors that will contribute to the positioning challenges are 1) variables in the anatomy (2) Fear and Anxiety (3) Communication challenges (4) Parents' role (5) Immobilization devices. Solutions for the positioning challenge are 1) Communication strategies- Technologists should be soft-spoken and friendly to the child so that there must be less distress and will minimize the anxiety of the child. (2) Sedation and Anaesthesia- a knowledgeable Pediatric doctor can give anaesthesia to the child with the proper dose of medicine with all the safety measures. In conclusion, these challenges, ranging from patient cooperation to image quality concerns, underscore the need for innovative solutions that prioritize the well-being of children undergoing medical imaging. Through research and analysis, this abstract has highlighted effective solutions, each addressing specific positioning issues. As the field of Pediatric radiology is in the growing stage, the integration of creative strategies remains crucial in optimizing medical outcomes and the integral well-being of the youngest members of our society. In Pediatric radiography, proper radiation safety aspects are to produce a good-quality image.

ADT213

Investigation of Advanced MRI Sequences And Key Imaging Parameters For The Differentiation of Enhancing Hepatic Lesion and Pseudolesions

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Abstract:

Diagnosis of liver disease causes serious problems due to the emotional state, susceptibility to various diseases and the difficulty of distinguishing lesions from pseudo lesions. Despite significant advances in imaging techniques such as dynamic MRI and multidetector CT, clinical evaluation remains important for accurate diagnosis. To solve this diagnosis problem, advanced MRI technique such as diffusion tensor imaging (DTI) have emerged as an effective method. In this study, T1-weighted, T2-weighted, diffusion weighted (DWI) and contrast-enhanced imaging were performed to identify important MRI markers for accurate diagnosis of liver lesion pathology from pseudo lesion. Additionally, the potential of the DTI to improve this differentiation process has been investigated using various MRI measurements to increase the accuracy of diagnosis. The retrospective analysis of this study involved careful review of previous MRI data, and a sample of 88 individuals was selected by a random method. The sample size was determined based on a 95% confidence level, 6.3% overall rate, and 0.05 margin of error to ensure data power. Sequential MRI evaluation involves evaluation of T1-weighted images (T1WI) using various combinations, including spine echo (SE), gradient echo (GRE), post-gadolinium contrast sequences, MR angiography, and bipolar wave sequence. From this general perspective, this study focuses on the fact that the development of DTI may increase the accuracy of distinguish liver pathology from pseudo lesions. Finally, this review emphasizes the importance of accurate liver diagnosis and provides recommendations for educating patients with liver disease. Develop effective treatment management strategies.

ADT214

Evaluation For 3D Pseudo-Continuous Arterial Spin Labelling Perfusion, With 3D Double Inversion Recovery In Locating Epileptogenic Foci In Adult Epilepsy Patients

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Abstract:

Epilepsy is a highly intricate neurological disorder known for the recurring seizures it causes, impacting a vast number of individuals globally. The accurate detection and precise localization of the epileptogenic foci play a fundamental role in determining the efficacy of surgical interventions and ultimately enhancing the outcomes for patients. Thus, the primary objective of this research paper is to evaluate the effectiveness of a combination approach involving 3D pseudo-continuous arterial spin labelling (pCASL) perfusion and 3D double inversion recovery (DIR) imaging techniques in pinpointing these epileptogenic foci in adult individuals with epilepsy. The research study centred around a group of adult epilepsy patients who underwent MRI scans using both pCASL perfusion and DIR sequences. The subsequent analysis of these images through innovative neuroimaging software aimed at identifying regions displaying abnormal perfusion patterns and structural irregularities indicative of epileptogenic foci. This study was necessitated by the shortcomings of traditional imaging methods in accurately pinpointing epileptogenic foci, which have led to suboptimal surgical outcomes and prolonged suffering for patients. By combining the quantitative data on cerebral blood flow provided by pCASL perfusion with the improved structural abnormality detection

capability of DIR imaging, our goal was to enhance the accuracy of localization and therefore optimize the treatment strategies for individuals suffering from epilepsy. This improvement included a notable increase in sensitivity and specificity in localizing the focal abnormalities associated with epilepsy, thus facilitating more precise surgical preparations and interventions. Looking towards the future, the potential implications of this research are profound. The integration of advanced neuroimaging techniques not only aids in deepening our comprehension of epilepsy pathophysiology but also opens doors to tailoring personalized treatment plans. Through the accurate identification of epileptogenic foci, healthcare professionals can devise individualized interventions, such as surgical resection or neuromodulation therapies, ensuring improved seizure management and overall quality of life for patients. In summary, our study emphasizes the significance of integrating advanced neuroimaging techniques, particularly pCASL perfusion and DIR imaging, in the assessment and localization of epileptogenic foci in adult epilepsy patients. The results presented hold great promise for enhancing surgical outcomes and advancing the development of personalized treatment strategies in the comprehensive management of epilepsy.

ADT215

Classification of Alzheimer's Disease Using Feature Extraction

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Abstract:

Alzheimer's Disease (AD), a progressive neurodegenerative condition characterized by abnormal accumulation of neurotic plaques and neurofibrillary tangles. Incidence rates increase with age, with individuals over 84 years old exhibiting a 47% incidence. This study aims to classify AD extensively using feature extraction techniques, Conventional Deep Learning Method with SVM Classifier, and Tensor Based Morphometry (TBM) analysis. MRI T1-W images will be collected to evaluate AD, aiming to detect morphological brain changes indicative of disease onset and severity. While AD symptoms typically manifest after 60 years of age, its progression varies significantly among individuals, suggesting potential for early detection before clinical symptoms appear. The research focuses on understanding brain morphological changes associated with AD onset, aiding in early detection and disease management. Structural brain MRI will be utilized for detecting and classifying neurodegenerative diseases, including AD, even before cognitive impairment occurs. Data analysis will include cortical thickness, hippocampal volume, cortical thickness, grey and white matter density for texture extraction. TBM will further classify AD into categories like Healthy Control, Mild Cognitive Disease, and Alzheimer's Disease based on local brain volume differences. Results from both methods will be evaluated to assess classification precision, providing insights into early detection and classification of AD using MRI-based techniques.

ADT301

Development of Augmented Reality (AR) Based Multi-Parameter Monitor for Early Clinical Exposure of Healthcare Students and Its Learning Outcome: A Pilot Study

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Abstract:

Multi-parameter monitor is one of the most important equipment found almost everywhere in the hospital, providing vital information about the patient's condition. Being a very crucial equipment, healthcare students need to be well-versed in the working principles, handling, and troubleshooting of this equipment. Students are currently taught via conventional methods and such devices are costly, heavy, and non-feasible to carry and teach students in the classroom. The cost of the simulator is also high. Thus, contemporary techniques for teaching must be updated using attractive and interactive interfaces. Augmented reality (AR) maybe the new tool in the field of healthcare. AR technology uses 3D models, animation, interactivity, and immersivity, thereby making complex concepts easier to understand. Here we propose the framework and development of an AR-based Multi-Parameter Monitor for teaching allied healthcare students. It uses an interface of AR markers. The system developed was tested for its usability with expert Anaesthesiologists. Eight Anaesthesiologists participated to share their system usability experience. The overall system usability score was 70.62%, which made it suitable enough to be tested on UG students from health sciences. A pilot study was conducted on 26 students in which 13 students were taught using the conventional method and 13 using the AR-based system. A pre-post test was conducted to analyse the learning outcome. The results of the study suggested that students who learned with an AR-based system had better learning outcomes in the cognitive and motivational domains.

ADT302

Optimizing Radiation Safety in Pediatric DSA: Leveraging Artificial Intelligence for Dose Reduction and Image Quality Enhancement

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Abstract:

Digital Subtraction Angiography (DSA) plays a pivotal role in diagnosing and treating vascular abnormalities in pediatric patients, yet its usage raises concerns regarding radiation exposure. This paper delves into strategies aimed at mitigating radiation risks in pediatric DSA procedures while maintaining diagnostic efficacy. Leveraging advancements in artificial intelligence (AI), particularly in image processing and machine learning, offers promising avenues for dose reduction and image quality enhancement. By harnessing AI algorithms, tailored specifically for Pediatric patients, healthcare providers can achieve precise dose optimization without compromising diagnostic accuracy. These AI-driven techniques encompass iterative reconstruction algorithms, noise reduction methods, and real-time dose monitoring systems, enabling clinicians to customize radiation doses based on patient age, size,

and clinical indication. Moreover, AI algorithms contribute to image enhancement by reducing noise, improving contrast-to-noise ratio, and minimizing motion artifacts, thereby enhancing diagnostic confidence and reducing the need for repeat procedures. Furthermore, this paper addresses the ethical considerations surrounding AI implementation in pediatric DSA, emphasizing the importance of transparent communication, patient consent, and clinician oversight. Through the synergistic integration of AI technologies and clinical expertise, healthcare practitioners can uphold radiation safety standards, optimize imaging protocols, and ultimately improve patient outcomes in pediatric vascular interventions.

ADT303

Machine Learning for Early Intervention in Brain Tumor Therapy

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Abstract:

Effective treatment plans depend on being able to differentiate between Glioblastoma and Brain Metastases. Due to their similar appearance, glioblastoma and brain metastases can be difficult to distinguish with MRI. The aim of this review article is to compare the performance of Hidden Markov Model and Dynamic Bayesian Network regarding diagnosing glioblastoma and brain metastases along with MR sequences like T1DCE, DWI and T2 Flair. In addition to Machine Learning Models Hidden Markov Models serve as a mathematical framework for creating probabilistic models to address linear sequence “labelling” challenges. They offer a conceptual toolbox that enables the construction of models of varying levels of complexity simply by creating an intuitive visual representation. Hidden Markov Models play a central role in a wide array of applications, such as gene discovery, consensus, profile searches, aligning multiple sequences, and identifying regulatory sites. It describes that the visible data is produced by concealed underlying states, with the connections between these hidden states representing their temporal or spatial associations. HMMs can be likened to the fundamental building blocks of computational sequence analysis. The research findings indicate that Hidden Markov Models outperformed support vector regression regarding brain cancer segmentation, demonstrating superior results in the context of PSNR, MSE and fault rate including dust detection and accuracy. But Hidden Markov Model having some disadvantages also. A Hidden Markov Model lacks the ability to represent the conditional relationships between variables. On the other hand, Dynamic Bayesian Networks are extensively employed in the field of computational systems biology to infer gene regulatory connections from time-series data. The conventional assumption is that data is stationary, however, there have been recent research endeavours aimed at easing this constraint. These approaches face three challenges: extended processing times, diminished precision, and dependence on parameter configurations. To address the individual problems or limitations of Hidden Markov Model and Dynamic Bayesian Networks we concluded that we think about their hybrid model in future by combining the benefits of both Hidden Markov Model and Dynamic Bayesian Network.

ADT304

Role of Artificial Intelligence in The Early Detection of Iron Deficiency And Vitamin B12: An Approach To Improve Health of Pregnant Women

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Abstract:

This study explores the potential of artificial intelligence (AI) for identifying iron and vitamin B12 deficiencies in pregnant women. These deficiencies pose significant health risks to both mother and child, highlighting the need for accurate and timely diagnosis. While traditional laboratory tests are used, they may have limitations. The research investigates how AI, particularly machine learning and deep learning algorithms, can improve detection speed and accuracy. AI models require high-quality data, and the review acknowledges social and ethical challenges related to data management and integration into healthcare systems. Despite these challenges, the potential benefits of AI are promising. Early detection allows for timely interventions, potentially improving health outcomes for mothers and babies, optimizing healthcare resource allocation, and offering valuable insights to healthcare professionals. The review emphasizes the need for further research to address knowledge gaps, test AI models on diverse populations, and refine their application. Collaboration between AI developers, healthcare professionals, and researchers is crucial for the responsible and effective implementation of AI in this field. Ultimately, AI-based tools hold significant promise for improving the precision and effectiveness of maternal healthcare and ensuring better health outcomes for mothers and their babies.

ADT305

Revolutionizing Healthcare Diagnostics: Integrating Extended Reality, Artificial Intelligence and Digital Health in The MediXR Insight App

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Abstract:

In the field of medical diagnostics and treatment, three-dimensional visualization and analysis have been critical for accurate assessment and effective intervention. The incorporation of Artificial Intelligence (AI) and Extended Reality (XR) technologies, including Virtual Reality (VR), Augmented Reality (AR), and Mixed Reality (MR), has transformed how healthcare professionals engage with complex medical data. This paper introduces MediXR Insight, a healthcare application poised to reshape diagnostics through the synergistic integration of Extended Reality (XR), Artificial Intelligence (AI), and Digital Health technologies. Leveraging Virtual Reality (VR) and Augmented Reality (AR), the app provides healthcare professionals with an immersive platform for three-dimensional visualization of intricate medical data, enhancing

diagnostic accuracy. Advanced AI algorithms analyze diverse datasets in real-time, delivering dynamic decision support to practitioners. The app's incorporation of XR technology facilitates real-time remote consultations, patient monitoring, and personalized education, fostering a deeper connection between healthcare professionals and patients. MediXR Insight serves as a robust training tool, utilizing XR environments for realistic medical scenario simulations and AI-generated content to aid in skill development. Emphasizing secure data management and compliance, the application envisions a future healthcare landscape characterized by efficiency, accessibility, and a patient-centric approach. This paper explores the design, features, and potential impact of MediXR Insight, highlighting its role in the ongoing transformation of healthcare diagnostics.

ADT306

Impact of Wearable Technology in Female Reproductive Health: A Review

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Abstract:

Background: Technology is the future of human life. Technology changes the world constantly to push the limits of innovations. The wearable technology industry is currently experiencing an upswing because of important technical innovations. It is the hardest product in the Internet of Things (IoT) category. The way technology is taking over, it won't be long before most of the activities of humans will be handled by technology. People's knowledge regarding technology is growing with time. Wearable technology is closely linked to the health sector also. Wearables technology has evolved from basic to advanced gadgets that monitor heart rate, sleep patterns, and stress levels and even measure ovulation using both abdominal thickness and basal body temperature. **Objective:** This review article aims to check the impact of wearable technology on female reproductive health. **Materials and Methods:** The process of literature review includes four steps. In the First step, we searched 95 articles with the keywords future wearable technology and fertility, infertility and wearable technology and reproductive health and technology including cross-sectional studies, observational descriptive studies, reviews and systematic reviews published from 2014-2024. In the second step, the articles were distinguished according to the inclusion criteria of the review study and 50 studies were shortlisted. In the third step, we finalised 30 articles which met the quality and theme of the study. The final and fourth step includes the categorization of 30 articles into relevant themes. **Results and Conclusion:** We conducted a systematic review of published studies in which we found that wearable technologies may be used by females to improve their reproductive health. Most devices were quite accurate. Wearable devices worn on the wrists, fingers, intravaginally, or within the ear show some positive results but more research is needed to validate and confirm for accuracy.

ADT401

Correlations Among Nutritional Consumption, Kinetic Behaviour, and Adiposity Indicators in Perimenopausal Females: An Analytical Cross-Sectional Investigation

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Abstract:

Nutrition plays a crucial role in the quality of life for perimenopausal women, a phase characterized by hormonal fluctuations, heightened propensity for weight gain, decline in bone and muscle mass, as well as digestive problems. Proper nutrition and the optimization of specific nutrient intake, along with lifestyle modifications, can aid in managing a healthy perimenopause. This study evaluates the dietary habits, physical activity levels, and BMI of 50 perimenopausal women aged 35 to 50 from Ambala, Haryana. Data were collected via questionnaires, 24-hour dietary recalls, and anthropometric measurements including height, weight, and waist and hip circumferences. Findings reveal an average BMI of 25.02 ± 2.04 among participants. Waist and hip circumferences averaged at 90.4 ± 4.11 cm and 102.51 ± 4.74 cm, respectively, with a waist-to-hip ratio of 0.87 ± 0.04 . Dietary assessment showed intake of cereals, millets, fats, oils, sugar, and jaggery exceeding the Recommended Dietary Allowances (RDA), whereas intake of essential nutrients like energy, protein, carbohydrates, calcium, iron, beta carotene, vitamin C, and fiber was significantly below RDA levels. Additionally, consumption of pulses, milk, and vegetables was markedly lower than recommended, and only 76% of participants engaged in moderate physical activities. The study concludes that nutrient deficiencies and low physical activity levels among perimenopausal women contribute to an increased BMI, underscoring the need for targeted education on nutrition and the benefits of physical activity to improve quality of life during this transitional period.

Keywords: Perimenopause, Diet, Exercise, Calcium, Beta-Carotene, Waist circumference.

ADT402

Innovative Study to Develop a Therapy Incorporating with Exoskeletal Hand Orthosis Powered By Functional Electrical Stimulation

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Abstract:

Exoskeletal Hand Orthosis Powered by Functional Electrical Stimulation will be a orthosis that promote early hand function recovery in Stroke condition. The SaebFlex have the biomechanical advantages in allowing prehension/ grasp and release activity for individuals with moderate to severe hemiparesis. This exoskeletal design to position the wrist and finger into extension and FES over extensor group of wrists for proper functional training. The objective of the study is to develop a exoskeletal hand function orthotic powered with Functional Electrical Stimulation to promote early hand function/movement. The study design is Innovative study and study setting is Neuroots clinic, Patiala. The equipment used is SaebFlex and Function electrical stimulation (FES). The results and findings of the study is that the combined use of SaebFlex and FES would be effective in recovering the gross and fine motor activities of upper extremity and also able to achieve the early release /grasp and

prehension activity of the paralysed hand. The significance of the study is that using a Exoskeletal hand function orthosis powered by Functional Electrical Stimulation is considered to be an effective hand rehabilitation option for providing repetition, gross motor hand function activities, and activity of daily livings (ADL's) for the affected hand and promote hand recovery to perform functional activities.

ADT403

Innovative Study to develop a Sensorimotor Wave (The Loop Wave) for Neuro-Diagnosis in Various Central Nervous System and Peripheral Nervous System Disorders

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Abstract:

Sensorimotor loop wave will be a single waveform of the combination of Motor evoked potential (MEPs) and the somato-sensory evoked potential (SEPs). SEPs measure the electrical activity generated in the somatosensory cortex in response to sensory stimuli, often involving electrical pulses applied to peripheral nerves. MEPs measure the electrical activity of muscles in response to electrical or magnetic stimulation of the motor cortex. They are used to assess the integrity of motor pathways, diagnose motor neuron disorders, and evaluate conditions affecting the corticospinal tracts. The objective of the study is to develop the sensorimotor loop wave for the easy and accurate diagnosis in the neurological disorders of CNS and PNS. The study design is Innovative study. The study settings are Department of Physiotherapy, Punjabi University, Patiala and Medicaid, Mohali. The equipment used are Repetitive Transcranial Magnetic Stimulation, Laptop with MEP and SEP software. The results and findings of the study is that the combined use of stable MEPs and SEPs would be able to detect both the afferent and efferent conduction delay and failure in central motor pathways and sensory pathways to proximal and distal districts of upper and lower limbs through single waveform. The significance of the study is that the proposed Sensorimotor Loop wave would be the single test to detect the integrity of the somatosensory system and motor system. It would provide an extensive electrophysiological mapping of CNS and PNS in clinical application.

Keywords: MEP: Motor Evoked Potentials, SEP: Somatosensory Evoked Potentials, CNS: Central Nervous system, PNS: Peripheral Nervous System, RTMS: Repetitive Transcranial Magnetic Stimulation.

ADT404

Comparative Study on The Pharmacological Treatments of Men With Low Sperm Count and Motility

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Abstract:

Background: Sub-optimal semen parameters, particularly sperm count and motility can impair couples' capacities to bring forth offspring in the event of a female having an intact reproductive system. It should be accentuated that male infertility constitutes about 30% of overall infertility and one-sixth of people of reproductive age suffer from conceptional problems on a global scale. While the primary etiology of low sperm count is due to defects in the formation of sperm in the testes, poor sperm motility is caused by sperm maturational anomalies in the epididymis. Even though assisted reproduction technology (ART) is widely employed nowadays in treating these sub fertile conditions, the choices of sterile couples to reproduce spontaneously and the high costs with unpredictable success rates of ART have sparked compelling studies focusing on the management of male factor infertility using medications, such as exogenous gonadotropins, aromatase inhibitors, and anti-estrogens. Given these points, the study aims to compare the effects of clomiphene citrate and letrozole in males with low sperm count and motility. Methodology: Information were gathered by carefully searching and scrutinizing relevant research articles utilizing search engines and databases, Pubmed, Google Scholar, and ResearchGate. In total, 15 articles were selected that matched the inclusion criteria. Prospective research design was predominantly used in most of the studies. And tools for data analysis included Statistical Package for Social Sciences, Medical Statistical Software, and R programming language. Results: 83% of the findings of the selected studies and critical analyses of other reports in the discussions confirmed significant improvement in sperm count and motility after the administration of pharmaceuticals, specifically clomiphene citrate and letrozole. However in 17%, no effect was seen. Conclusion: With the purpose of mitigating psychosocial distress and marital acrimony associated with infertile couples, there is a great need to focus on studies centered on pharmacological management of male infertility for better outcomes.

ADT405

Exploring the Impact of Cryopreservation Methods on Sperm Morphology and Motility in Sibling Samples

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Abstract:

Background: Cryopreservation, an assisted reproduction technology (ART), is concerned with the storage of sperm, oocytes, and embryos as well as tissues at a very low temperature (-196°C) during the course of infertility treatment or for the preservation of fertility. This state-of-the-art technique, which was initially developed by Lazaro Spallanzani and expanded in subsequent time by the efforts of many scientists, has not only given hope to patients undergoing radiotherapy and sperm recovery surgery but also to people who are wholeheartedly pursuing their careers. Of great interest, the literature sheds light on the impacts

of temperature variations on sperm morphology and motility in a twofold analysis of identical semen sample employing liquid nitrogen vapor freezing, vitrification, and lyophilization. Understanding how these methods influence sperm quality in related semen samples offer invaluable insights for maximizing cryopreservation protocols and ameliorating the efficacy of facilitated reproductive technologies. Methodology: The study involved pertinent assessment of fifteen (15) latest research articles obtained from Science direct, Google scholar, ResearchGate and PubMed. There was no bias in the search and evaluation of literatures as both original and reviewed studies were taken into consideration. Prior to sperm cryopreservation, comprehensive examination of sperm motility and morphology were carried out based on the WHO guidelines for human semen. Results: Liquid nitrogen vapor freezing and vitrification reported slight improvement in sperm motility and morphology post thawing amongst the three principal procedures for preserving sperm. On the contrary, lyophilization resulted in zero percent sperm motility and abnormal morphology after thawing. Conclusions: In summary, research has clearly shown that vitrification of sperm enhances the chances of clinical pregnancy leading to delivery of a baby for infertile couples undergoing in vitro fertilization treatment.

ADT406

Clinical Effectiveness of Combined Training of Computer Based Cognitive Training and Aerobic Training in Age Related Cognitive Decline

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Abstract:

Cognition refers to higher-order brain activities including decision-making, calculation, problem-solving, language production and use, and memory. Superior cognitive function is essential for sustaining a high quality of life since it allows people to carry out daily tasks (Salvi et al 2020). Age-related cognitive decline (ARCD) is a common cognitive disorder in the elderly population and is part of the natural aging process. It is clinically characterized by poor performance in memory, processing speed (PS), visuospatial skills, language, and executive functioning (EF). In aging, cognitive dysfunction starts along with memory decline and is associated with disorientation, miscalculation, misjudgement, and impaired conceptual capacity (Genoveva et al 2020). Moreover, cognition dysfunction is effective on all areas including memory, attention, language, spatial functioning, and executive functioning (Somayeh et al 2019). Physical activity (PA) is another modifiable lifestyle component that has the potential to improve cognitive performance significantly. It has been proposed that exercise promotes healthy ageing and offers cognitive benefits for the elderly. Studies which include exercise and computer-based cognitive training individually have been shown to elicit moderate positive effects on cognitive function in survivors of stroke. Attention has recently focused on the combination of exercise and cognitive training, which may provide additional benefits in cognitive performance that go beyond exercise or cognitive training alone. Aerobic exercise increases arousal level, facilitates neurogenesis, and enhances memory consolidation, which may benefit the memory retrieval and cognitive task performance that follows.

Combining aerobic exercise with other treatment, such as resistance exercises and pharmacologic treatments after stroke, could theoretically enhance neural plasticity.

ADT407

Genus Turbinaria: Coral Diversity, Resilience and Conservation In The Face of Global Environmental Change

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Abstract:

Seaweeds have indeed garnered significant attention from researchers over the past several decades due to their rich biochemical composition and potential health benefits. Seaweeds come in various shapes, sizes, and colors, ranging from small filamentous forms to large, complex structures resembling plants. Among the various genera of seaweeds, the *Turbinaria* genus stands out for its notable properties, including strong antioxidant, anti-diabetic, and anti-cancer qualities and encompasses a variety of seaweed species known for their diverse bioactive compounds. These compounds include enzymes, polysaccharides, trace minerals, essential vitamins, and other bioactive substances. Each of these molecules exhibits unique characteristics, such as antiviral, antibacterial, and antioxidant activities, which contribute to potential health-promoting effects in humans. Research into the bioactive components of *Turbinaria* seaweeds, has revealed promising findings regarding their potential therapeutic applications. For instance, antioxidant compounds found in *Turbinaria* seaweeds may help combat oxidative stress, which is implicated in various chronic diseases, including cancer and diabetes. Additionally, certain bioactive substances present in *Turbinaria* seaweeds have demonstrated anti-cancer properties, suggesting potential utility in cancer prevention and treatment strategies. Furthermore, the anti-diabetic properties attributed to *Turbinaria* seaweeds indicate their potential as dietary supplements or functional foods for managing blood sugar levels and preventing complications associated with diabetes. Overall, the extensive research conducted on seaweeds, particularly those belonging to the *Turbinaria* genus, underscores their significance as a valuable source of bioactive compounds with potential applications in improving human health and preventing various diseases. Continued investigation into the therapeutic properties of *Turbinaria* seaweeds may lead to the development of novel pharmaceuticals, nutraceuticals, and functional food products with significant health benefits.

ADT408

Update On Preimplantation Genetic Test (PGT): Are We Heading In The Right Direction?

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Abstract:

Introduction: Preimplantation genetic Testing (PGT) examines embryos during in vitro fertilization (IVF) before possible transfer to a woman's uterus for a range of genetic problems

that can cause implantation failure, miscarriage, and birth defects in a resulting child. This abstract explores the significance of PGT and improved outcomes in fertility treatments. Preimplantation genetic Test: Preimplantation genetic testing refers to the three types of tests that are performed on embryos during IVF: Pre-implantation genetic screening for abnormal chromosome number (PGT-A), Pre-implantation genetic testing for monogenic (individual) disease (PGT-M), and, Pre-implantation genetic testing structural rearrangement (PGT-SR) for known chromosomal mis-arrangement such as inversion & translocation. Advancement: The three types of PGT are new terms the medical community is moving towards that replace the previous terms of pre-implantation genetic screening (PGS) and pre-implantation genetic diagnosis (PGD). The function of PGS is now accomplished through PGT-A. PGD's function is now either performed by PGT-SR or PGT-M. The tests themselves are still executed in the same or similar manner. Conclusion: Fertility specialists conduct these tests for two important reasons. One is to determine if embryos have genetic abnormalities that often cause failed implantation and miscarriage resulting in unsuccessful IVF. The second is to identify embryos with genetic defects that can result in a child with genetic disorders that could cause death or inheritable conditions such as muscular dystrophy.

ADT409

Integration of Artificial Intelligence in In Vitro Fertilization (IVF): Revolutionizing Embryo Selection and Pregnancy Outcomes

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Abstract:

The integration of artificial intelligence (AI) into the realm of in vitro fertilization (IVF) marks a significant advancement in assisted reproductive technology (ART). While biotechnological innovations have been prevalent over the four decades of IVF, AI, essentially a digital tool, employs advanced analysis to interpret data, automate decisions, and take actions. In the context of IVF, AI plays a pivotal role in optimizing the selection of sperm and oocyte combinations to produce viable embryos, as well as identifying embryos with the highest likelihood of resulting in a successful live birth. By automating the embryo ranking and selection process, AI mitigates inter- and intra-observer biases, increases the utilization of viable embryos, reduces the time to pregnancy by identifying optimal candidates for transfer, improves live birth outcomes, and potentially eliminates the need for invasive and costly procedures such as aneuploidy screening. Recent advancements, such as the AI algorithm developed by researchers at Weill Cornell Medicine, specifically targeting the prediction of embryo ploidy, have shown promising accuracy rates of around 70%. This represents a significant step forward, as AI has the potential to predict various types of aneuploidies in a completely non-invasive manner, unlike pre-implantation genetic testing (PGT) techniques. While morphological assessment and Time-Lapse imaging are non-invasive methods for predicting embryo viability, they are subjective and time-consuming. AI offers a more objective and efficient alternative, revolutionizing the landscape of IVF.

ADT410

Factors Contributing to Male Infertility: Insights into Pathophysiology and Clinical Implications

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Abstract:

This abstract provides insights into the pathophysiology of male infertility from the perspective of an embryologist, focusing on the cellular and molecular mechanisms underlying impaired spermatogenesis and sperm function. Spermatogenesis, the intricate process by which mature spermatozoa are generated from spermatogonial stem cells, is a critical determinant of male fertility. Disruptions in spermatogenesis can result from genetic mutations, chromosomal abnormalities, environmental exposures, and hormonal imbalances, leading to reduced sperm production, abnormal sperm morphology, and impaired sperm motility. Genetic factors contribute significantly to male infertility, with mutations in genes essential for spermatogenesis, sperm function, and reproductive tract development affecting fertility outcomes. Chromosomal anomalies, such as Klinefelter syndrome and Y chromosome microdeletions, are frequently associated with severe spermatogenic defects and infertility. Hormonal imbalances, such as hypogonadism, hyperprolactinemia, and thyroid dysfunction, disrupt the hypothalamic-pituitary-gonadal axis and impair spermatogenesis. Endocrine disorders affecting testosterone and estrogen levels can further compromise male fertility by altering testicular function and sperm maturation processes. Lifestyle factors, including obesity, smoking, alcohol consumption, and recreational drug use, contribute to male infertility by disrupting hormonal balance, inducing oxidative stress, and impairing sperm quality. Poor diet, lack of physical activity, and chronic stress also negatively impact male reproductive health. Embryologists play a crucial role in evaluating semen parameters, performing advanced sperm function tests, and providing insights into the cellular and molecular mechanisms underlying male infertility.

ADT411

A Study on Laser-Assisted Hatching Techniques and Their Impact on In Vitro Fertilization (IVF)

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Abstract:

This study explored how laser exposure effect IVF success rates and clinical pregnancy outcomes. Laser-assisted hatching improved IVF. The Grewal Healthcare Clinic, Sangrur, Punjab India conducted the study from July 3, 2023, to December 23, 2023. The study included 80 ICSI-treated infertile couples. Women aged 20-30 and 30-40 were tested utilizing laser exposure. A noncontact RI-SATURN V laser was employed for zona pellucida manipulation. All participants had hormone tests, transvaginal ultrasounds, and hysteroscopy or laparoscopy done during the treatment cycle. Fixed and extended ovarian hyperstimulation treatments were used. IVF success rates vary by age, with 30-40 having 83%, 20-30 (84%). The laser exposure hatching had the highest success rate (92%), and the lowest success rate (48%). A significant positive correlation was established between laser exposure and clinical pregnancy outcomes. The study reveals age, especially 30-40, may impair IVF success. Additionally, a laser exposure hatching increases IVF success rates. The recommended laser exposure period for all age groups is 4.5 μ s, with younger women recommended at 2 μ s and older women at 8 μ s. Laser-assisted hatching methods, specifically diode laser exposure periods, were evaluated for in vitro fertilization success. The study evaluated how age influences IVF couples' clinical pregnancy outcomes. The findings optimize laser parameters for assisted reproductive technology.

ADT412

A Comprehensive Assessment of The Necessity of Evidence-Based Practice In Eye Care

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Abstract:

A teaching method that requires students to think critically and apply what they are learning might make a difference and increase their intuitive abilities. Therefore, we should priorities using an evidence-based approach in our classrooms. Our objective is to examine the awareness of Evidence Based practice among undergraduate optometry students. So Data collected by using Form app for online survey of questionnaire. Statistical analysis were performed using IBM SPSS version 20.0 software. Categorical variables were expressed as frequency and percentage. To test the reliability of questionnaire, Cronbach's Alpha and Inter-Item Correlations was computed. To find the relationship between scores on each section, Spearman rank correlation was computed. The data reveals that 20% of students exhibit a "Very High" awareness, demonstrating a robust comprehension of EBP principles in the context of contact lenses. Additionally, 28% possess a "High level" of awareness, 24% demonstrate an "Intermediate" level, 20% exhibit a "Mild level" and 8% have "No awareness."The majority falls into the "average" and "poor" categories, which suggests that there may be room for improvement in increasing awareness and understanding of Evidence-Based Practice among the study population.

ADT413

Insights into Low Vision Awareness using a questionnaire LVSEQ-16

Aarzo Sharma and Renu Thakur*

Abstract:

This study looks into the depths of low vision awareness among special educators at blind schools. The study uses an accurate questionnaire validated by low vision experts to investigate educators' viewpoints on critical issues such as pre-enrollment exams, the usefulness of low vision devices, and the need for rehabilitation training. The findings, based on 40 participants, provide a positive consensus on important topics, emphasizing the necessity of raising awareness and implementing comprehensive low vision solutions in special education. The study provides interesting ideas for improving the educational landscape for visually impaired students

Introduction: The purpose of this study is to determine the level of awareness of poor vision rehabilitation among special educators at blind schools. A well-constructed questionnaire, which ensures validity, reliability, interest, and efficiency, is the primary data gathering tool. The study emphasises the need of developing a conceptual framework for questionnaires that focus on relevant questions and follows a logical order. The Likert scale, closed-ended questions, and data analysis considerations are all important parts of questionnaire design. **Methodology:** The study is being undertaken at the School for the Blind in Punjab, using an observational design for a three-month period. The study population consists of school-based special educators, with the exception of those who have had poor vision rehabilitation training. The research hypotheses are designed to measure special educators' awareness of poor vision rehabilitation. **Questionnaire Development:** The questionnaire is created carefully, with the help of seven low vision professionals for validation. A pilot research is carried out to improve the questionnaire further. The questions address critical issues such as the existence of partially sighted students, evaluation beliefs, awareness of low vision devices, and the value of rehabilitation training for special educators. **Data Analysis and Findings:** An analysis of responses from 40 special educators finds that the average age is 39.90, with 60% male and 40% female participation. The majority had postgraduate qualifications, indicating a well-educated group. A descriptive analysis of study features using Likert scale responses reveals a generally good agreement among educators on the necessity of low vision rehabilitation. Significant findings include significant support for evaluating partially sighted children before enrolment, belief in the potential of low vision devices for educational and occupational opportunities, and understanding of the benefits of auditory books. **Conclusion:** The findings of this study shed light on the level of awareness of poor vision rehabilitation among special educators in blind schools. The positive answers highlight the importance of adding low vision rehabilitation within special educator training to better meet the requirements of visually impaired pupils. The findings provide important insights into improving the educational experience and overall well-being of people with visual impairments in special education settings.

ADT414

Enhancing Hospital Safety: Strategies For Effective Infection Control

Saksham Saini and Kajal Sharma*

Abstract:

To prevent healthcare-associated infections (HAIs) the one of the main aspects is Infection control measure in hospitals. This research topic looks into the evolution, current practices, challenges, and strategies for improving infection control in hospital settings. Traditionally, the development of hospital epidemiology and infection control programs was prompted by the recognition of rising HAI rates, as well as the associated morbidity, mortality, and financial costs. Milestones such as the Study on the Efficacy of Nosocomial Infection Control (SENIC) demonstrated the efficacy of surveillance and infection control practices in lowering HAIs. Stress the financial and quality-of-care possibilities associated with hospital-acquired infections (HAIs). Surveys from multiple countries highlighted the significant morbidity, mortality, and financial burden associated with HAIs, highlighting the importance of strong infection control practices in improving patient outcomes and cost-effectiveness. Healthcare epidemiologists and infection preventive experts (IPs) are emphasized as key players in developing and implementing evidence-based practices to reduce the risk of HAIs. Disparities in staffing levels and resources allocated to infection control units are identified; focus attention on the need for adequate assistance and funding. Privately funded hospitals, in particular, face difficulties in maintaining adequate staffing levels, highlighting potential disparities in infection control resources across healthcare facilities. The importance of hospital cleaning in infection control efforts, emphasizing the need for diligent hygiene standards to break the chain of infection spread. Despite economic and outsourcing difficulties, maintaining high levels of cleanliness appears to be an affordable approach for preventing HAIs. Thus, the varied nature of hospital infection control, demonstrates the significance of proven methods, sufficient funding, and cross-disciplinary cooperation in protecting public health and improving patient safety.

ADT415

Eye Accommodative Changes While Watching Horror Films And Playing Video Games In Mobile

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Abstract:

Background: Objective of this study was to find out accommodative function before and after playing game, before and after watching movie on smart phone for 1 hour and also to find out the accommodative demand in smartphone users between the game and movie. Methods: Total 150 subjects (77 male and 73 female) of 18-25 years of mean age 20.086 were participated in this study. firstly, all the subject were under went general eye evaluation and normal subject were included for the study after that the accommodative function were checked. After that the subjects were asked to play game "Temple Run" for 1 hour and next day after 24 hour they were asked to watch movie "The Conjuring 2013" and accommodative function were examined before and after playing game and watching movie. Results: The monocular and binocular amplitude of accommodation

was significantly reduced after playing game where $p = 0.000$ and the amplitude of accommodation after playing game was reduced to monocularly and binocularly where $p = 0.00$. But there was no significant change in amplitude of accommodation both monocularly (right eye $p = 0.516$, left eye $p = 0.224$) and binocularly ($p = 0.135$). While comparing lag of accommodation before and after playing game was significantly increased where $p = 0.00$ and before and after watching horror movie where $p = 0.016$ but there was no significant change after playing game and after watching horror movie. The monocular and binocular accommodative function were significantly reduced in comparing of before and after playing game. Conclusion: Keeping close working distance from smartphone for 1 hour induced significant change in accommodation both monocularly and binocularly irrespective of different visual task.

ADT416

Effect of Repetitive Transcranial Magnetic Stimulation (RTMS) And Task-Oriented Sensory Cues Training on Gait In Individuals With Parkinson's Disease (PD)

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Abstract:

Background: Motor control in PD is a subject of growing concern as it is remarkably associated with poor subjective well-being and more reliance on caregivers. Poor motor function causes difficulty in performing complex motor skills e.g. turning, crossing obstacles, or performing dual tasks synchronously. This study is directed toward maximizing motor function by overcoming gait impairment. Hence this study helps address the benefit of non-invasive brain stimulation and sensory cues training on gait in individuals with PD. Setting: Neu-roots Rehabilitation unit in Patiala. Methods: The Pre-Post single group experimental study was performed on eight participants diagnosed with PD within the age group of 50-75 years. All participants who were enrolled were capable of ambulation with or without support. Intervention: The application of rTMS was applied over the motor cortex of the dominant hemisphere followed by sensory audio-visual cues gait training. A total of ten sessions were given for 5 days a week for two weeks. Main outcomes: Spatial gait parameters (stride length, step length), Motor Disorder Society- Unified Parkinson Disease Rating Scale (MDS-UPDRS), Freezing of gait-questionnaire (FOG-Q) and Dual-Tasking Timed-up and go test (DT-TUG). Results: Motor score, spatial parameters, freezing of gait, and walking with manual tasks significantly improved ($p < 0.05$) but walking with cognitive tasks did not improve. Conclusion: The study suggested that rTMS and sensory cues training improve overall gait performance and can be considered an important part of gait rehabilitation. Also, this study highlights the importance of cognitive interference with motor function, hence more tailored cognitive-motor integration intervention can be practiced to avoid cognitive interference.

ADT417

Correlation of Ankle Instability with Anthropometric measures of Lower Limb and Type and Duration of Training in Young Football Players

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Abstract:

Ankle instability is one of the most common musculoskeletal conditions seen in many sports like football, soccer, rugby and volleyball among males as well as females' players. The cause most frequently associated with ankle instability is the ankle sprains which can be recurrent in nature and further develop into Chronic Ankle Instability. It has been found that almost 73% of individuals who sprain their ankles have residual symptoms like pain, discomfort, repeated sprains, and sudden episodes of giving way. The elements of ankle instability that contribute to the development of chronic instability in athletes have been extensively studied across the globe. Although different research point to differing conclusions in the same area, the relative importance of each component of ankle instability: functional and mechanical has not been thoroughly examined. In addition, it is not clear how gender-specific instability affects populations more. Therefore, it is essential to determine the correlation among these parameters. 70 adolescent football players competing professionally were recruited from Chandigarh Football Association, Chandigarh. The Cumberland Ankle Instability Tool was used to identify the functional ankle instability whereas Anthropometric measures of the lower limb, Type and duration of training helped with examination of mechanical ankle instability among the players. The players were also investigated through musculoskeletal special tests to determine the presence of mechanical ankle instability. The result determines the prevalence of mechanical and functional ankle instability in both males and females. Also, the correlation among anthropometric measures of lower limb, type and duration of training among young adolescent football players.

ADT418

Comparative Study to Evaluate Immediate Effects of Swimming and Cycle Ergometer on Cognitive Performance and Reaction Time among College Students

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Abstract:

Physical activity influences both physical and mental health. It has been found to have a profound effect on cognitive functioning thereby reducing age related cognitive decline. Thus, acute aerobic exercises serve as a medium to accelerate the cognitive functions by modulating specific aspects of brain functioning. Despite the growing evidence of the chronic effects of swimming on cognitive performance in children and young adults with ADHD and ASD, there is dearth of literature regarding immediate effects of swimming and cognitive functions in normal young adults and also swimming involves very low incidence of accident and injury compared with many other sports involving children and young adults. This study evaluates the immediate effects of swimming and cycle ergometer on cognitive performance and reaction time on college students individually and also the comparative findings of the two. The current study comparative study has been conducted on the campus of Chitkara University, Rajpura, Punjab. The study population consisted of undergraduate and post-graduate students

of Chitkara School of Health Sciences which were selected via convenient sampling method. A baseline testing was done which included the participants' anthropometric measurements, physical activity levels by IAPQ followed by the cognitive function assessment by the MoCA scale. The pre- assessment tests were done to assess the cognitive performance of attention by TMT A and B, memory by RAVLT and reaction time by Deary Liewald Reaction time task followed by 15 min of intervention session followed by the post-test assessment. It determines the immediate effect of swimming and cycle ergometer on the cognitive performance and reaction time in college students and also the comparative findings between the two.

ADT4001

Prevalence of Urinary Tract Infection: A Review

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Abstract:

Background: A urinary tract infection (UTI) Is a bacterial infection that affects any part of the urinary tract. UTI is most common microbiological infections in female as compare to male due to of their short urethra. *E. coli* is most common bacteria causing UTI followed by *Klebsiella* species. **Aim & Objectives:** The aim of this study to find out the prevalence of Urinary Tract Infections. **Methodology:** MeSH terms such as UTI, Bacteria, AND Prevalence were the search phrases used. All full-text English publications have been chosen for evaluation, and appropriate data has been extracted. PubMed, Scopus, and Google Scholar searches were performed on published works. A total of 43 articles were extracted from these web site and 27 of them were selected for the study. **Results:** *E. coli* ($\geq 30\%$) was more prevalent followed by *Klebsiella* ($\geq 10\%$). Antibiotic was exclusively effective against *Proteus spp.* **Conclusion:** Identifying the species of bacteria correctly is crucial in these complicated situations to choose the most effective antibiotic therapy. Therefore, to aid physicians in providing patients with UTI with better care, it is important to regularly identify the bacterial species and their pattern of susceptibility to antibiotics.

ADT4002

Risk Factors Leading to Increasing Incidence of Chronic Kidney Disease In Children: An Indian Scenario

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Abstract:

Background: Chronic kidney disease (CKD) is defined by persistent urine abnormalities, structural abnormalities or impaired excretory renal function suggestive of a loss of functional nephrons. Sadly the incidence of CKD cases has shown a significant rise in children. Recent reports have shown an increase of CKD in children with early kidney abnormalities, including albuminuria, decreased kidney function, and elevated biomarkers of early kidney injury. The risk factors associated with CKD can be broadly classified as

modifiable and non modifiable. Modifiable factors include diabetes, hypertension, anemia, obesity, urinary tract infections and non-modifiable factors include low birth weight, genetic disorder, age etc. however very few studies have focused on risk factors in India setup. Method: The research was done using search engines and databases including Pubmed, Google scholar and Research gate with appropriate keywords such as chronic kidney disease, children, risk factors, India. Result: The existing literature showed that modifiable factors such as hypertension and diabetes are the major risk factors leading to CKD affecting children. The impact of hypertension leads to high blood pressure which directly affects the functioning of the kidney while diabetes lowers the level of functioning of the kidney. Further, with proper diet control, regular health checkups and modifying the lifestyles can bring a big change. Conclusion: It can be concluded that keeping a regular check on the modifiable factors in children can be of great importance in reducing the incidence of CKD in children.

ADT4003

Beyond Nutrition: Exploring the Applications of Goat Milk in Medicine and Diagnostic Advancements

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Abstract:

Traditionally well known for its nutritional benefits, Goat milk is a rich source of proteins, vitamins and minerals, which make it a potential source of antioxidant, antimicrobial, immuno-modulatory and anti-inflammatory activity. Goat milk is well known to promote gastrointestinal health and help in regulating hormonal balance. The oligosaccharides found in goat milk as known to work as prebiotics and help in healthy development of infant's gut microbiome, hence enhancing immunity. Fermented goat milk is known to recover anaemia, reported to be beneficial in: sensitive and dry skin conditions, clinical conditions such as Hypertension, osteoporosis and malabsorption illnesses. Goat milk constituents like caprine whey proteins and lactoferrin, have shown therapeutic potential in conditions such as cancer, cardiovascular disease, and neurodegenerative diseases. The primarily found microbial population in the gastrointestinal tract responsible for these effects include *Lactobacillus acidophilus* and *Bifidobacteria* which are found in milk products, especially yogurt. Current review aims to summarize the potential benefits of Goat milk and its constituents by exploring their properties, effects and utilization in different medical applications. It examines the therapeutic potential of Goat milk as medicine, along with its potential applications in diagnostics as biosensors and in immunoassays. Further, it discusses the challenges in the future direction and highlights the importance of continued research in this promising area.

ADT4004

Correlation Between Hemoglobin Levels and Osteoporosis In Type2 Diabetes Mellitus Patients

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Abstract:

Diabetes mellitus, a rapidly expanding disease which is expected to affect 693 million adults globally by 2045. Type 2 diabetes mellitus (T2DM) causes 95% of diabetes cases. As the aging population grows and lifestyles change, osteoporosis is also becoming more common. Diabetes and osteoporosis is prevalent in men and women over 50. Type 2 diabetes increases the risk of fractures due to obesity, poor glycemic control, and longer duration. Post-hip fracture death rates are higher for men and women, lowering quality of life and burdening society. Early diagnosis and prevention are crucial. Diabetes mellitus increases anemia risk 2-3 times due to chronic hyperglycemia, impairing peritubular fibroblasts. This study investigates the link between hemoglobin levels and osteoporosis in Type 2 Diabetes mellitus patients, focusing on risk variables and factors influencing their risk of osteoporosis. Anemia is linked to decreased bone mass index (BMD), increased osteoporosis and osteopenia, and an increased risk in older males with falling hip BMD. There is a genetic correlation between hemoglobin and femoral neck BMD, and poor bone quality is closely related in elderly individuals. This study investigates the link between hemoglobin levels and osteoporosis in Type 2 Diabetes mellitus patients, focusing on risk variables and factors influencing their risk of osteoporosis.

ADT4005

Analysis of Bacterial Isolates Recovered from Infected Wounds and Their Antibiotic Susceptibility Profile

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Abstract:

A cut or wound is an opening in the skin that results from a breakdown of the skin's protective layer, exposing subcutaneous tissue and fostering a condition that is warm, moist, and rich in nutrients that promotes the invasion and development of microorganisms. A wound infection occurs when there are multiplying microorganisms present, which damages the host or tissue. Incisions from surgery, burns, traumatic injuries from accidents, and chronic wounds like leg ulcers and diabetic foot are the most prevalent types of wounds. The review paper discusses research articles identified in ScienceDirect database for the last 10 years (from January 1, 2013 to February 15, 2024). Only the most appropriate articles were taken for the review which was identified by searches with keyword phrases 'wound infection', 'Wound exudates', 'Bacteria causing wound infection', 'Antibiotic susceptibility pattern and wound infection'. *Staphylococcus Aureus*, *Escherichia coli*, *Pseudomonas aeruginosa*, *Klebsiella pneumoniae*, *Streptococcus pyrogens*, *Proteus* species, *Streptococcus* species and *Enterococcus* species, *Aspergillus fumigatus* and *Candida albicans* are majorly present in wound infection. Parasites associated with wound infection are protozoa, helminths and arthropods. The antibiotic susceptibility testing of bacterial pathogens is performed with techniques including such as Z-stroke over the entire wound bed and Levine technique. The antibiotic susceptibility testing was commonly conducted for ampicillin, amoxicillin, ceftriaxone, vancomycin, gentamicin, ciprofloxacin, cefoxitin, penicillin, amikacin, imipenem. With a ratio of 74.4%, Staphylococci was discovered to be a significant causal agent, followed by *Pseudomonas aeruginosa* with a ratio of 25.6%. Treatment for the isolated bacteria was

challenging due to their great antibiotic resistance. It is crucial to understand the pathogen's spread and drug resistance pattern in order to direct clinical treatment.

ADT4006

Anesthesia For Laparoscopic Surgery: General Anesthesia v/s Regional Anesthesia

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Abstract:

The aim is to study and compare the use of general and regional anesthesia for laparoscopic procedure and use of anesthesia in the surgical field. To observe the incidence of intra and post-operative complications in regional anesthesia compared to the use of general anesthesia for laparoscopic surgery to provide safe intra-operative anesthetic conditions for surgery with early recovery, better post operative analgesia and fewer complications. The researchers conducted a systematic review-based investigation by gathering material from PubMed and Google Scholar. Included in the analysis were articles that discussed laparoscopic surgeries under regional anesthesia and those that contrasted the ply of RA with GA. A restricted number of papers were included for the literature evaluation, which limited the study's scope to gynecological surgeries under regional anesthesia, laparoscopic cholecystectomy, and comparative studies employing general anesthesia as the primary source. A research study by R K Singh et al. with the sample size of 50 patients for cholecystectomy under key hole surgery and laparoscopic associated vaginal hysterectomy (LAVH) under Combined Spinal Epidural (CSE) anesthesia, included successful results for utilizing the regional anesthesia. A study of 1111 patients for laparoscopic cholecystectomy (LC) with the study population of RA and GA groups with comparable basic demographic characteristics shows conversion rate of 2.3% from RA to GA. The primary outcome of shoulder tip pain was measured by VAS scale along with other secondary outcomes such as PONV, duration of hospitalization, etc. were found to be comparably better outcomes in regional anesthesia. The ply of RA offers a number of benefits over general anesthesia, including the ability to move around freely, minimum invasion, efficient post-operative pain management, early recovery, and ambulation; offering a far safer and superior anesthetic option for laparoscopic procedures than general anesthesia.

ADT4007

Comparison Between Spinal Anesthesia (Sa) And General Anesthesia(Ga) For Caesarean Section (CS)

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Abstract:

To deliver the baby via Caesarean section, the mother's uterus and abdominal wall must be incised. Reducing pain is the aim of anaesthesia during a caesarean delivery. General anaesthesia, spinal anaesthesia, or epidural anaesthesia can all be used to accomplish this. The effects of general anaesthesia cause unconsciousness and the loss of pain perception in patient. When combined with specific medications, it carries some hazards, such as possibility of maternal blood loss. Contrary regional anaesthesia entails numbing certain regions with local anaesthetic solutions. This can involve epidural or spinal anaesthesia, which involves injecting anaesthetic into the lower back. It keeps the mother conscious and lowers the chance of complications that come with general anaesthesia. Furthermore, postural puncture headaches can occasionally result after SA. Study of various research articles was done using different sources like PubMed, Google scholar etc. with the use of keywords given below. The articles compared the effects of spinal and general anaesthesia for caesarean section. In this review, regional anaesthesia (RA), especially SA and GA are compared for CS deliveries. It concludes that in comparison to GA, SA is linked to lower rates of maternal blood loss, fewer unsuccessful intubations, a faster postpartum recovery, earlier mobility, and better pain management. When it comes to neonatal evaluation criteria, newborns delivered under GA typically score worse than those delivered under RA. Moreover, SA provides more efficient postoperative pain control and may reduce the likelihood of opioid-related side effects. For CS anaesthesia, SA seems to offer better results overall for moms and babies, which suggests it as the superior option. The therapeutic environment, patient preferences, and available resources should be taken into account.

ADT4008

A Comparative Study Between Older and Latest Methods of Sterilization Used In Different Operation Theatres

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Abstract:

Operation theatres are the specialized field of the hospitals where lifesaving or life improving procedures or surgeries take place. Every OT has four zones: protective zone, clean zone, aseptic zone and disposal zone. The maintenance of these four zones were very important as, these zones contain risk of infection which may spread and cause SSIs and infections to healthcare providers also. So, to maintain sterility of operation theatres, many sterilization methods have come and get modified too. Maintenance of asepsis is very important in OT. For infection control, many methods and protocols were set and used among all OTs which include servicing of AC filters, mopping of OT walls, OT floors, OT tables and OT lights. Fumigation of OTs for 24 hours with formaldehyde, use of active oxygen species (AOS) for surface cleaning, disinfecting by new oxygen molecule allotropes (NOMA), and new sterilization methods in this emerging world have been come to prevent spread of infections to the workers those who clean OTs in terms of robots for detection and then disinfection of the site (Robot

UAV and UGV). Robots are tested in GAZEBO simulator in robotics operating system (ROS), specially came into effect during COVID 19 outbreak. Based on research articles, we use different sources from the web like google scholar, pub med, science direct by explaining the different methods of sterilization in operation theatres. In this review article we concluded that the methods used in above articles are useful in disinfecting and sterilizing the whole environment of OT, as well as OT walls, OT floors, OT table, OT lights, workstation, etc. New methods also take place in the form of UAV and UGV robots to disinfect OTs before and after every procedure or surgery and these robotic disinfectants reduces the risk of spread of infections to the healthcare providers and the OT staff as well.

ADT4009

Pre-Operative Education on Recovery from Surgery

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Abstract:

Preoperative education is defined as providing the information related to the patient and to prepare the patient for surgical procedure. It is highly relevant according to Enhanced Recovery After Surgery (ERAS) concept. Patient education plays a major role during any surgery, with the help of this patient will be already educated about the surgical procedure, complications and the drugs used before the procedure or during the procedure, after the procedure. In this review paper, we studied about different surgeries and observed about the problems witnessed by the patients, these problems can affect the patient. Psychologically and may cause physical changes. While we studied this review paper, we observed that most of the patients suffer from pre-operative anxiety, depression and stress. During these conditions the health care providers play an important role to overcome from the anxiety before the procedure by maintaining IPR (interpersonal relationship). In randomized controlled trials different studies showed after the group of patients were divided, one group was divided into control arms and the other one were experimental group. The control arms group had the usual care whereas the experimental group received the intervention, a day of education by members of multidisciplinary teams, prior to admissions for surgery. Most of the studies showed the positive results that if we will provide preoperative education to the patient about the surgical procedure which will be performed in the operating room. While some cases showed the negative result. Maximum studies include lesser length of hospital stay and postoperative complications. From the articles, we conclude that maximum articles shows that there were no significant changes in the patient while some studies showed the positive change from which we found out the changes in patients psychologically. Hence, further studies in this field are mandatory to make the proper recommendations for clinical practices.

ADT4010

The Impact Of Pre-Operative Anxiety On Patients Undergoing General Anaesthesia

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Abstract:

Anxiety is characterized by feelings of unease, dread, and terror. The person starts to perspire, experience tension and restlessness, and his/her pulse rate may quicken. It can be a typical response to stress. Tomophobia is referred to as the fear of surgery or other medical intervention. Subjective unpleasant feelings of dread over an unexpected event, such the sense of impending death, are called anxiety. Muscle tightness, exhaustion, restlessness, and focus issues are frequently present as well. Perioperative anxiety is defined as an ambiguous, unsettling sensation that frequently has nonspecific, unknown to the patient, but recognized to result in aberrant hemodynamics when stimulated by the sympathetic, parasympathetic, and endocrine systems. Anybody can suffer anxiety, whether it is temporary or persistent leading to an increase in the patient's stress level, making it more difficult to control discomfort during the recovery phase. The perioperative period is a traumatic event, a patient experiences, which sets off particular physiological and emotional reactions. Preoperative fears are attributed to a number of factors, including age, gender, being single or divorced, education, not knowing exactly when the surgery will take place, the patient's capacity to comprehend what happens during surgical anaesthesia, fear of the procedure, being away from family, financial loss, pain following the procedure, fear of death, and fear of unknown origins. Patients get more anxious during the pre-anaesthetic consultation when sufficient information about the procedure is not provided timely. Patients with better pre-anaesthetic information from their anaesthesiologist during their visit experience lower anxiety levels than those who did not. In addition, the stress of being admitted to the hospital, often increases anxiety within the patients on the day of admission due to the upcoming surgery. Postoperative pain and results and preoperative anxiety are linked. Patient's education can help to lower anxiety before surgery. The outcomes demonstrate that preoperative patient education was successful in lowering patients' anxiety before surgery for a variety of procedures. Standardized educational designs for patients are developed by healthcare providers for various surgical operations.

ADT4011

Advancements in Renal Mass Imaging: A Comprehensive Evaluation of Radiological Modalities for Detecting and Characterizing Lesions

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Abstract:

In recent decades, advancements in renal mass imaging assessment have emerged, employing a multimodal approach for differential diagnosis and risk stratification. This approach has led to an increased diagnosis of renal masses, which are categorized as benign or malignant based on incidental findings in abdominal imaging. Small Renal Masses (SRM),

suspicious for malignancy if under 4 cm in size on high-quality, multiphase, cross-sectional abdominal imaging, have become a focal point. Radiology plays a pivotal role in distinguishing between benign and malignant renal lesions, utilizing various modalities such as ultrasound (US), computed tomography (CT), magnetic resonance imaging (MRI), and contrast-enhanced ultrasound (CEUS). CT and MRI excel in identifying macroscopic fat in benign angiomyolipomas (AMLs), aiding in differentiation from solid renal masses, including renal cell carcinoma (RCC). Dual-energy CT offers quantitative measurements, distinguishing RCC from other malignant renal tumors and subtypes. Non-contrast US, while detailed in evaluating cystic lesions, lacks sensitivity and accuracy compared to CT or MRI for characterizing renal masses. Diagnostic reliability is often attributed to non-contrast US when identifying a renal mass as a simple cyst. Contrast-enhanced ultrasound (CEUS) using microbubbles provides dynamic assessment of renal mass microvasculature, aiding in differentiation between cystic and solid lesions. Multidetector CT offers high spatial resolution images of kidneys and renal vessels, while MRI offers a higher signal-to-noise ratio, spatial, and temporal resolution for detailed renal lesion characterization. With further advancements in technology and techniques, the field of renal mass imaging continues to evolve, promising even more precise and reliable diagnostic capabilities in the future.

ADT4012

Effect And Cause of Polycystic Ovary Syndrome (PCOS) Among the Selective Population of Females

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Abstract:

Polycystic ovarian syndrome (PCOS) is the most prevalent factor in females nowadays due to which females face some common problems like infertility, obesity androgen excess and insulin resistance due to all these ovulation rate in females decreased. Metabolic syndrome is also one such factor which creates risk factor for cardiovascular disease in PCOS women's. Elevated oxidative stress is a big factor for pathogenesis of PCOS related infertility in women. The objective of this study is to know the different problems that may occur in females due to PCOS. We use meta analysis method to review the different articles from different platforms (PubMed, Google scholar) all the related topic were included to make our study more relevant total 80 articles was reviewed out of which 60 included in the study on the basis of objectives fulfilment and the sample size reviewed. The most common health related concerns reported by women's with PCOS was obesity (increased weight), insulin resistance menstrual problems, infertility, decrease in no. Of ovum/egg and increase of body hair due to increased testosterone level most of the articles done their research on such factors which was faced by PCOS women's. women can go through the screening time to time whether these symptoms are seen in women's or not. Their is a high risk of infertility and insulin resistance or due to obesity it may increase the risk factor for pregnancy or child birth. Taking healthy diet and no stress or anxiety as well as proper exercise can decrease the chance of PCOS in women.

ADT4013

Radiation Protection in Radiology Department Among Health Care Workers

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Abstract:

X-rays have been widely used in medical and dentistry since their discovery, serving diagnostic and therapeutic purposes. Radiation, a type of energy, can cause tissue damage and pose risks to patients and medical personnel. Technological advancements in healthcare have increased the use of ionizing radiation in diagnostics and therapy. Although the US population's total radiation dose decreased by 15-20% between 2006 and 2016, the number of X-ray-based procedures increased by 13%. Radiation safety concerns persist in various departments, with fluoroscopic procedures being the largest source of exposure. Evaluation of healthcare workers' knowledge of radiation safety is the main goal. Goals: To ascertain what barriers—such as lack of knowledge, inadequate training, or a dearth of resources—keep the radiology department from adhering to radiation safety regulations. This article's goals are to examine the information that is currently available about the variety of radiation protection .Techniques- Review of a few chosen works of literature, legal texts, and national and international recommendations. Outcomes -Clear rationale for radiological exams and methods designed to reduce radiation exposure while offering the necessary diagnostic data are crucial from the standpoint of radiological protection. Talk- Referring physicians should collabo- rate with radiologists who share responsibility for selecting the most appropriate imaging modali- ties, and make sure they follow the established guidelines for medical imaging.

ADT4014

Nutritional Interventions and Lifestyle Modifications In The Prevention and Management of Diabetic Retinopathy

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Abstract:

Diabetic retinopathy (DR) is a global concern, prompting exploration into preventive and management strategies. This review evaluates nutritional interventions and lifestyle modifications in DR prevention and management. Evidence highlights the profound influence of dietary patterns and lifestyle choices on DR progression and severity. Nutritional interventions, including dietary adjustments and supplementation, show promise in DR prevention and management. Diets rich in antioxidants, omega-3 fatty acids, and low-glycemic index foods combat oxidative stress and inflammation, key contributors to DR pathogenesis.

Micronutrient supplementation, such as vitamins C and E, lutein, and zeaxanthin, may protect against DR progression. Lifestyle modifications such as physical activity, weight management, and smoking cessation are pivotal in DR prevention and management. Regular exercise boosts insulin sensitivity, regulates glycemic levels, and diminishes systemic inflammation, thereby mitigating the risk of DR. Weight management strategies and smoking cessation alleviate DR complications. Tailored lifestyle interventions, coupled with patient education, empower individuals with diabetes to adopt healthy habits. The review article examines research articles retrieved from the Science Direct bibliographic database spanning the past decade (January 1, 2015, to February 15, 2024). Only the most pertinent research papers were chosen for incorporation in the review, identified via keyword exploration including 'Glycated Hemoglobin and DR', 'Diabetic Retinopathy', 'Diet Modifications for Diabetic Retinopathy', and 'Lifestyle Modifications for Diabetic Retinopathy'. In conclusion, nutritional interventions and lifestyle modifications complement conventional treatments in DR management. Integrating these strategies into routine clinical care has the potential to improve visual outcomes and the quality of life in individuals with diabetes.

ADT4015

Knowledge and Awareness About the Consequences of Polycystic Ovary Syndrome Amongst University Students

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Abstract:

“Polycystic Ovary Syndrome (PCOS)” is a common hormonal illness that affects women of reproductive age. The implications of PCOS go beyond its physical manifestations to include emotional and psychological impacts. Such women are at an increased risk of infertility, which can cause emotional discomfort and strain in relationships. Furthermore, PCOS has been linked with a higher possibility of developing insulin resistance, Type 2 diabetes, and cardiovascular disease, highlighting the necessity of early detection and treatment. Despite its prevalence, a substantial lack of knowledge and awareness about PCOS exists, particularly among female college students. The literature indicates an alarming deficiency of understanding regarding PCOS among young people, particularly college-aged females. According to research, several women having PCOS encounter diagnostic delays and a deficiency of knowledge of the illness, resulting in inefficient therapy and higher health risks. This lack of knowledge can have major penalties for young women's health and well-being, resulting in delayed diagnosis and long-term repercussions like infertility, diabetes, cardiovascular problems, and psychological anguish. Addressing this gap becomes principally important throughout college years, when health behaviours are developed. Raising awareness among this demographic is crucial for allowing quick diagnosis, providing access to

appropriate care, and empowering people to make informed health decisions. As a result, it is vital to increase student understanding of the disease and its consequences. As a result, the goal of this paper was to review the literature on PCOS disease awareness among college-aged females in order to develop and implement an educational programme aimed at university students to increase knowledge and awareness of PCOS consequences, promoting early detection, informed lifestyle choices, and a supportive environment for affected individuals.

ADT4016

Prevalence and Awareness of Smoking Among The Students

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Abstract:

Tobacco use is extremely significant issue confronting global health. Approximately 80% of smokers worldwide reside in low- and middle-income nations, which also have the highest rates of tobacco-related illnesses and deaths. The global prevalence of adult tobacco use is estimated to be around 22%. It increases the risk of dental issues, “cancer, chronic obstructive pulmonary disease, and cardiovascular disease”. Almost nine out of 10 cases of lung cancer are caused by smoking. Over one million individuals die from lung cancer every year. The habitual way to ingest smokeless tobacco is via chewing pan, pan-masala or gutkha, and mishri. According to “Global Adult Tobacc Survey, India”, more than one-third of Indians use tobacco in some capacity, including chewing, applying to their teeth and gums, sniffing, and smoking. The WHO asserts that all tobacco usage is dangerous and that there is no acceptable level of tobacco smoke. Within seconds of inhaling cigarette smoke, vape mist, or chewing tobacco, nicotine promotes the discharge of dopamine in the brain, causing users a euphoric sensation. This review article aims to appraise the awareness of youth about the health effects linked with smoking and their practice of smoking behaviour. Literature published after 2010 using key words “Youth” “Awareness” and “Health” was searched using Google Scholar, Pubmed and Web of Science. Analysing the data revealed that compared to medical students, non-medical students are less aware about the tobacco and its harmful effects on health. The majority of students continue to use tobacco despite being aware of the harmful effects of smoking. The smoking habits of youth are significantly influenced by familiar influences. According to them stress and peer pressure is a common trigger for smoking. As such, it is critical to emphasise the urgency with which tobacco control regulations must be implemented.

ADT4017

Influence of Co-Morbidities on The Stroke Due To Small Artery Disease (cSVD)

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Abstract:

Stroke is the greatest cause of disability and death worldwide, accounting for 11.13% of all deaths. Strokes kill approximately 140,000 people per year. Ischemic strokes account for roughly 87% of all strokes. In 2010, there were approximately 11 million ischemic strokes globally, with low- and middle-income countries accounting for 63% of the total. An ischemic stroke resulted in an additional 3 million deaths. Speech, learning, and comprehension problems are the common forms of impairments caused by a stroke. It can induce speech and language issues, making individual difficult to speak, label things accurately, or understand what others are saying. A stroke can cause paralysis or weakness on one side of the body. This could make everyday actions like dressing, bathing, and eating more challenging. Stroke risk factors include age, “past cerebrovascular episodes, smoking, alcohol use, inactivity, hypertension, dyslipidemia, diabetes mellitus, cardiovascular disease, obesity, metabolic syndrome, food, nutrition, and genetic risk factors”. Cerebral small vascular disease (cSVD) is defined as lesions of the tiny cerebral perforating arteries, arterioles, capillaries, and venules. It affects the brain's microcirculation and becomes primary reason of dementia and cognitive decline. cSVD is an age-related illness that severely affects the brain's microscopic perforating veins and is a foremost basis of cognitive decline and functional loss in the elderly. The consequences of cSVD may vary subject on the severity of the ailment and the health of the individual sufferer. cSVD can cause stroke, cognitive impairment, reduced walking speed, renal failure, blindness, lacunar infarctions, and dementia, among other complications. It can cause clinically obvious lacunar stroke syndromes as well as clinically "silent" symptoms such white matter lesions, asymptomatic lacunar infarctions, brain microbleeds (BMBs), and increased perivascular gaps. A combination of physical examinations, neurological testing, and diagnostic imaging techniques is utilised to identify strokes caused by cSVD. To identify the nature of stroke and the exact area of the damage, imaging tests are performed. The most popular tests performed by doctors when they suspect a stroke are cerebral angiography, MRI, and CT scans. One of the first tests used to diagnose a stroke is a CT, or "CAT" scan. Using X-rays, a CT scan produces images of the brain. A magnetic field and radio waves are used in an MRI scan to provide precise images of the brain. Based on MRI, a practical small vessel disease score has been developed to estimate the risk of “stroke, dementia, and death” from cSVD. An increased risk is linked to an elevated overall MRI score. The diagnostic criteria and demographic characteristics that are employed influence the prevalence of cSVD. Beyond the age of 80, the prevalence of white matter hyperintensity rises sharply to over 90%. Risk factors for cSVD include various comorbidities, including hyperlipidemia, diabetes, heart disease, and high blood pressure. The current review article attempts to identify the co-morbidity risk factors for stroke caused by cSVD.

ADT4018**Investigating Radiological Staff's Understanding and Implementation of MRI Safety Measures****Palak Vasudev and Anita Gupta****Chitkara School of health Sciences, Chitkara University, Punjab, India***Corresponding author: anita.gupta@chitkara.edu.in*

Abstract:

Magnetic resonance imaging (MRI) allows for the detailed imaging of organs and tissues throughout the body without using "ionizing" radiation or x-rays. The physiological and functional applications of MRI, which has a better soft-tissue contrast than other radiological imaging modalities, have resulted in a significant rise in MRI scans. The MR scanner may occasionally make loud tapping, knocking, or other noises throughout the procedure, despite the fact that an MRI examination is painless and the electromagnetic fields do not appear to cause any kind of tissue damage. The strong magnetic field of the MR system has the ability to attract objects made of specific metals (i.e. ferromagnetic objects) and cause them to move violently and suddenly. This could endanger the patient or anyone else. Therefore, medical professionals involved in MRI should exercise extreme caution. The radiologist, clinicians, MRI technologist, nurses, and medical physicists involved with MRI examinations must take a number of safety concerns into account. Protecting patients and other healthcare professionals from potential bio-effects and risks of the magnetic fields in an MRI suite requires thorough MRI safety training. In the current study, the degree of MRI technologists' awareness, attitude and practice about MRI safety will be reviewed.

ADT4019

E-Waste and Human Health: Bridging The Gap Between Awareness And Action In India

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Abstract:

The escalating generation of electronic waste (e-waste) presents pressing environmental as well as human health concerns worldwide. Contributing factors include the aggressive expansion of the advanced technology industry, driven by both of non-replenishable resource consumption and hyper-consumerism. This growth can be seen in extreme mining practices, hazardous labor conditions, and widespread exposure to inorganic and organic hazardous chemicals, posing risks for current and future generations. Various processes are aligned at the global level such as the inner-circle strategies such as in-country reduce, reuse, and recycle initiatives have been overshadowed by outer-circle methods, notably the uncontrolled dumping of e-waste in regions lacking regulatory oversight in India.

In areas without robust e-waste management infrastructure, crude recycling, open burning, and landfill disposal exacerbate risks to human health, wildlife, and ecosystems. Emphasizing on this subject, we require a multidisciplinary approach encompassing economic, political, social, cultural, and scientific dimensions. Evaluating risk analysis, including assessment, management, and communication, is crucial in mitigating transgenerational e-waste exposure and associated health disparities. This paper advocates for the integration of environmental as well as human health strategies, highlighting the importance of integrated human and animal biomonitoring. Such an approach, utilizing appropriate biomarkers, offers insights into exposure, effects, and susceptibility, particularly concerning toxic metals and metalloids. By promoting the safe and sustainable management of e-waste through comprehensive strategies,

including integrated biomonitoring, society can navigate the challenges posed by rapid technological advancement while safeguarding human health and environmental integrity.

ADT4020

Smoking, Alcohol and Substances Abuse and Their Effects on Human Health

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Abstract:

Most people start using alcohol, tobacco, and illegal drugs when they are adolescents. This study looked at teenage alcohol, cigarette, and illicit drug use in Poland, including the age at which use began, how often it occurs, how to get access to it, where it occurs, and the knowledge and attitudes of parents. The study aims to assess the impact of alcohol consumption, smoking, and drug abuse on human health. Outcomes The study group's respective rates of alcohol, cigarette, and illicit substance use were 36.1%, 37.6%, and 10.8%. The average initiation age was between 13 and 14 years old. Parents accepted alcohol and cigarettes at rates of 5.7 and 6.7%, respectively, and were aware of alcohol, cigarette, and illicit substance use 49.5, 35.8, and 22.4% of the time. Over 28 percent of the participants smoked while attending school, and 32.7% used illegal drugs in the area around the school. In conclusion Despite internationally planned preventative measures, Poland has a high and rising rate of alcohol, cigarette, and illicit drug use. There is a lack of parental awareness regarding their children's use of alcohol, cigarettes, or illicit substances, and schools rarely carry out their protective and educational duties. Actions to prevent are essential, and regional difficulties should be considered.

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