SWAMI VIVEKANANDA UNIVERSITY

NEWSLETTER

Volume 2 | Issue 3 | July-September 2025

Theme:- "Promoting Healthy Ageing Through Physiotherapy: Preventing Falls & Frailty"

World PT Day 2025

DEPARTMENT OF PHYSIOTHERAPY
SCHOOL OF ALLIED HEALTH SCIENCES

About The University

Swami Vivekananda University was established in the year 2019 by the Swami Vivekananda Group of Institutions (RERF), a trusted name in the education sector of West Bengal. Although young in years, the University has already made impressive progress toward becoming a reputed centre of quality higher education. RERF, the parent body, stands as one of the leading educational conglomerates in the region with over 28 well-established institutions. These institutions are dedicated to providing demand-driven and industry-oriented education across a wide spectrum of disciplines including Pure and Applied Sciences, Engineering, Technology, Management, Agriculture, Life Science, Allied Health Sciences, Humanities & Social Sciences, and Journalism & Mass Communication. The Group focuses on high-quality education at undergraduate, postgraduate, and doctoral levels, nurturing professionals who meet evolving global standards.

Swami Vivekananda University (SVU) was founded with the profound mission of bringing to life Swami Vivekananda's vision of education—one that shapes not only intellectual capabilities but builds strong character, confidence, ethics, and humanity. His educational philosophy emphasized blending India's rich cultural and spiritual legacy—rooted in values such as shraddha (faith), devotion to truth, and sacredness of knowledge—with the best of Western scientific temperament, innovation, rationality, and technological advancement. In alignment with this ideology, every academic program, extracurricular initiative, and institutional effort at SVU is designed to promote mankind's holistic development, preparing students to become responsible global citizens with a strong sense of purpose.

*The Hon'ble Chairman's guiding principles—**Excellence, Innovation, and Entrepreneurship**—drive SVU toward continuous growth and transformation. New age educational initiatives are being implemented to enhance academic quality, expand research contributions, and develop collaborations with industry and global institutions. The University gives equal importance to personality development, leadership enhancement, experiential learning, and real-world problem solving. With a strong focus on outcome-based education, SVU aims to empower students to become innovators, entrepreneurs, skilled professionals, and change-makers in society.*

The University was established under Act No. XV of 2019 of the West Bengal State Legislature and officially commenced operation from 5th December 2019. Within just a year, it was enlisted by the University Grants Commission (UGC) as a State Private University in 2020. SVU has ensured continuous internal monitoring and quality self-compliance through its Internal Quality Assurance Cell (IQAC), signifying its strong commitment to academic excellence, accreditation readiness, and institutional transparency from the very beginning.

Strategically located in the lush and serene township of Barrackpore, the University campus is spread across 12 acres of greenery, providing a refreshing environment that supports learning, creativity, and overall well-being. The campus enjoys excellent tri-modal connectivity—rail, road, and air—with the Kolkata Airport just 15 km away, and key access points like Barrackpore-Barasat junction (Wireless More) and Kalyani Expressway situated nearby. Close proximity to Barrackpore Railway Station further enhances accessibility for students commuting from various parts of the state.

*Despite being in its early years, the University has already achieved a robust student community of over 2000+ learners, including around **150 active research scholars**, demonstrating its rapidly growing academic reputation. SVU offers a learner-centric atmosphere supported by advanced infrastructure and modern facilities. The academic blocks comprise fully equipped laboratories, smart classrooms, seminar halls, auditoriums, a technologically advanced Computer Centre, Central Library, Conference Halls, and designated research spaces. The campus also supports a variety of extracurricular and student welfare facilities including a well-maintained gymnasium, medical support, campus store, clean and hygienic canteen services, and complete Wi-Fi connectivity—enabling a digitally empowered learning ecosystem.*

SVU strongly believes that higher education is not just about academics but shaping personalities and enabling lifelong success. Therefore, the University promotes a culture of active learning through practical sessions, field training, industrial internships, workshops, guest lectures, and skill development programs. Alongside academic rigor, SVU emphasizes co-curricular and extracurricular involvement—arts, sports, cultural celebrations, community outreach, and innovation-driven activities—ensuring that students evolve into adaptable and confident individuals.

Research, innovation, and entrepreneurship are the pillars of SVU's developmental roadmap. The University encourages a strong research culture through funded projects, research labs, conferences, and collaborations. Students are motivated to engage in discovery, creativity, and real-world applications of knowledge. Entrepreneurship development cells, incubation support, and mentorship opportunities ensure that innovative ideas from young minds can transform into sustainable ventures and contribute to the nation's economic advancement.

Swami Vivekananda University remains deeply rooted in the belief that every student has the potential to rise and excel. Therefore, equal attention is given to inclusivity, ethics, discipline, and academic freedom. Faculty members at SVU are highly qualified, student-friendly, and dedicated to guiding learners through both academic challenges and personal growth. The faculty continuously upgrade their knowledge through professional development programs, ensuring that the University remains aligned with global educational standards.

*Looking ahead, SVU aims to expand its global visibility through international collaborations, advanced research centres, and industry partnerships that enrich student exposure and career opportunities. The University's long-term mission is to earn recognition as a **University of Excellence**—one that leads innovation, promotes value-based education, and creates leaders who contribute meaningfully to society.*

Swami Vivekananda said, "Education is the manifestation of the perfection already in man." Guided by this philosophy, Swami Vivekananda University is committed to inspiring students to discover that inner perfection, empowering them to become enlightened individuals ready to serve the world with knowledge, kindness, courage, and purpose.

From the Vice Chancellor's Desk

It is indeed a great privilege and honour to be at the forefront of an emerging and rapidly progressing institution—our ***Swami Vivekananda University (SVU).*** *Being a part of this illustrious journey fills us with immense pride and satisfaction. Since its inception in 2020, SVU has consistently demonstrated a strong commitment toward excellence in Higher Education, Research, Innovation, and Community Extension activities. With the visionary guidance and strong leadership of our Hon'ble Chancellor, and the relentless dedication of our esteemed colleagues—our University has been able to build a strong academic foundation in a remarkably short span of time.*

SVU today offers a wide spectrum of ***Undergraduate, Postgraduate, and Doctoral programs*** *across various disciplines including Engineering, Management, Agriculture, Computer Science, Life Sciences, Allied Health Sciences, Humanities, and Social Sciences. Each of these programs is carefully designed to align with global standards, industry needs, and future technological advancements. Our objective has always been to nurture competent, responsible, and socially conscious professionals who will shape the future of our nation and the world.*

Research remains at the very heart of our institutional growth. At SVU, research programs are being strengthened across all disciplines, promoting a culture of innovation and knowledge creation. Total commitment from faculty, scholars, and students is essential to achieve our research goals, and I am proud to note that SVU is steadily progressing toward becoming a centre of excellence in multidisciplinary research.

As we envision the future, there is no doubt that ***knowledge and technology*** *will continue to be the most powerful resources for development. The world is evolving rapidly, and higher education institutions must not only adapt to this change but must play a crucial role in leading societal transformation. Therefore, it becomes our paramount responsibility to develop ideas, innovations, and human resources that will benefit society at large. We aim to impart education that is forward-thinking, skill-based, and capable of addressing global challenges.*

To keep pace with the emerging trends, our emphasis is also on establishing strong collaborations and alliances—whether with national and international universities, government bodies, research organizations, or industrial sectors. These partnerships will foster opportunities for joint research, knowledge exchange, internships, and real-world exposure for our students. It is both our moral and academic obligation to ensure that SVU becomes a trusted hub for academic brilliance, impactful research, and meaningful extension activities.

The progress SVU has witnessed so far is not the result of a single entity—it is the collective outcome of the unwavering dedication, teamwork, and concerted efforts of every stakeholder—faculty, administrative

staff, students, alumni, governing bodies, and well-wishers. In the vast, fast-changing educational scenario of today, a university must be adaptable, resilient, and future-oriented. I firmly believe that SVU embodies these qualities and is continuously evolving to meet the highest standards of educational excellence.

What truly strengthens our institution is its ***diversity****—diversity in talent, culture, ideas, perspectives, and ambitions. The richness of this diversity enables us to build a vibrant academic environment that inspires creativity, critical thinking, and leadership. Every member of the SVU community contributes uniquely to the growth story of our University, and together, we move ahead with a shared vision of progress and purpose.*

With many milestones yet to be achieved and countless opportunities ahead, let us continue to shoulder our responsibilities with dedication and enthusiasm. I encourage each one of us to uphold the core values of discipline, innovation, compassion, and academic integrity—values that symbolize the spirit of SVU.

Let us join hands and move forward with unwavering determination to take this institution to even ***greater heights of recognition, excellence, and societal impact****. The journey ahead is promising, and together we shall make SVU a beacon of knowledge and a pioneer of transformative education.*

"Many more miles to go—but with unity, vision, and collective effort, success is inevitable."

From the Chief Operating Officer's Desk

It is a great privilege and honour to be a part of the mission to make "Swami Vivekananda University" a name to reckon within the academic fraternity by giving a strong impetus to creating an environment of knowledge, application and holistically inspiring youth to become leaders of tomorrow. I believe that the rigours of the contemporary world will require knowledgeable professionals who could withstand the dynamics of the fast-changing world. It is a great privilege and honour to be a part of the mission to make "Swami Vivekananda University" a name to reckon within the academic fraternity by giving a strong impetus to creating an environment of knowledge, application and holistically inspiring youth to become leaders of tomorrow. I believe that the rigours of the contemporary world will require knowledgeable professionals who could withstand the dynamics of the fast- changing world. Hence "Making a Difference in the Life of Every Student" is the Priority of my administration. We look forward to a deep engagement with Students, Industry, Faculty, and Community to position Andhra university as the national leader in delivering value to its students and offering a transformative educational and life experience.

The Vice Chancellor office works collaboratively across the University Constituent and affiliated Colleges to ensure that every student has the best possible education and experience. In the journey, there will be tough times and there will be easier ones, but we shall work hard with no regrets, and be victorious. The University faculty are here to be the mentors and facilitators to help the students in all round progress. The parents are here to understand the strength and weaknesses of their wards and encourage them, in choosing a study of their passion. The students are here to understand that the rules and regulations in the university are put in a place to help them in achieving dreams.

There must be an aspiration to excel and serve the society, and hence there must be measuring standards. We the faculty and students as an University must excel and set standards to impact society and future generations.

Let's move ahead with a clear line of action to excel in academics, fortify our research initiatives through quality publications, strengthened industry – institute interactions, product development, Start-Up ventures and honestly contributing for the upliftment and growth of people and humanity at large.

Our challenge is to help to generate ideas that will benefit society, and to educate and train people to work in fields where they will be valued both for their knowledge, and for their ability to research, communicate and solve problems. I offer my best wishes to all students, faculty and staff to grow and excel in this challenging and competitive era and the pinnacle of success.

From the Registrar's Desk

We have pleasure in welcoming you to Swami Vivekananda University, Barrackpore. The University is striving hard to have qualitative improvement in the level of education, environment and economy of this region. The university has a visionary mission to contribute in multidimensional growth and development of the region in general and holistic development of the students in particular. We hope that the inspiring students, under the guidance of dedicated teachers and a far-sighted leadership of the top administration would lead this University to a coveted and recognized position in the galaxy of higher education in the country.

Swami Vivekananda University's aspiration is to be a world class centre of excellence in training, research and innovation in cutting edge technologies. We are in the sincere process of creating a positive image whereby our name becomes synonymous with excellence, innovation, honour, integrity and outstanding quality and service. Always we will keep our vision goal focused ensuring to reach greater heights in the days ahead. As we embark on developing the University, all the dedicated personnel at SVU need to be unswerving in defending our vision. We shall focus on the individuals' strengths and use their strengths in a very goal-directed niche within our institution.

Our primary objective is to enrich and support the individual in his/her endeavour towards the attainment of knowledge and wisdom to apply that knowledge in coherence with the aims and ambitions of the individual in particular and for the greater good of human kind in general. Industries and renowned institutions are always welcome to collaborate for R & D activities with faculty members and research scholars. As regards to the students who are our main stakeholders, we look forward to a healthy working relationship where dialogue becomes the pillar of our understanding. We remain open to your deserved needs and not demands and our focus will be to make you all-round graduates ready for the market and responsible citizens of this great country. I assure you best academic, administrative and research atmosphere in the campus.

About The Department

Physiotherapy is an important branch of rehabilitative medicine that focuses on restoring, maintaining, and enhancing physical function and movement throughout the lifespan. Physiotherapists work with individuals affected by injury, illness, disability, or age-related conditions, aiming to improve mobility, reduce pain, and enhance independence. By using detailed assessment, provisional diagnosis, therapeutic exercises, manual techniques, electrotherapy, and education, physiotherapists play a vital role in promoting health and overall well-being.

With the growing need for rehabilitation services in today's world—due to lifestyle changes, rising chronic diseases, sports and work-related injuries, and increased life expectancy—qualified physiotherapy professionals are in high demand. Physiotherapy not only supports recovery but also helps prevent future complications, enabling individuals to lead active and productive lives.

Recognizing the importance of skilled rehabilitation experts, the ***Department of Physiotherapy at Swami Vivekananda University*** *was established in* ***2020****. The* ***Bachelor of Physiotherapy (BPT)*** *program aims to provide students with strong theoretical knowledge supported by hands-on clinical training. Students are exposed to hospitals, community centers, and advanced physiotherapy laboratories equipped with modern treatment technologies.*

To expand learning and research opportunities, the ***Master of Physiotherapy (MPT)*** *program was introduced in* ***2024****. This specialized program focuses on advanced therapeutic practice, clinical reasoning, and evidence-based treatment approaches, preparing graduates for leadership roles in healthcare and academics.*

The department is driven by a team of dedicated and experienced faculty members who prioritize student development, professional ethics, and excellence in patient care. Our mission is to develop competent, compassionate physiotherapists who contribute meaningfully to improving the health and quality of life of individuals and communities.

From the HOD's Desk

Dr. Sourav Mitra (PT)
Assistant Professor & HOD
Department of Physiotherapy
MPT Neurology

Welcome to the Department of Physiotherapy at Swami Vivekananda University. Our department firmly believes that education is a powerful tool that shapes individuals into capable professionals and responsible members of society. We strive to create an environment where students are encouraged to explore their potential, pursue academic excellence, and engage in continuous personal development. With the unwavering support of our experienced faculty members, strong institutional vision, and well-equipped infrastructure, we aim to foster dedication, perseverance, and empathy among our students—qualities essential for success in the healthcare profession.

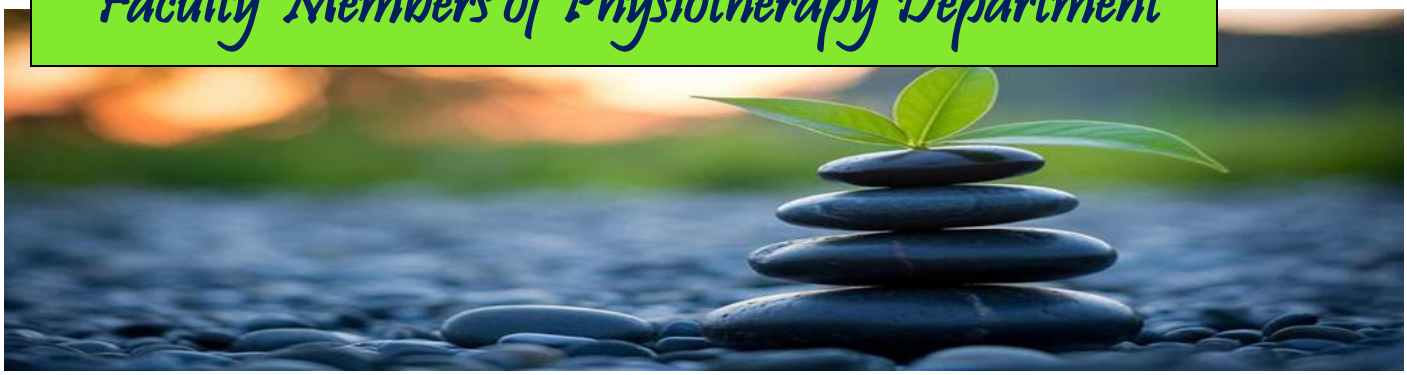
Physiotherapy plays a vital role in the modern healthcare system. As a specialized discipline of rehabilitative medicine, it focuses on restoring, maintaining, and enhancing physical function and mobility. Physiotherapists work closely with patients to manage pain, improve movement, and enhance their ability to participate in daily activities. Through scientific assessment, provisional diagnosis, therapeutic exercises, manual therapy, electrotherapy, and preventive care, they help individuals regain independence and improve their overall quality of life.

Beyond treating health conditions, physiotherapists significantly contribute to the prevention of disability, reduction in long-term medication dependency, and avoidance of invasive procedures such as surgeries. Their role spans across hospitals, sports rehabilitation centres, community health programs, geriatric care, occupational health, and wellness promotion—making them a key asset in society's pursuit of better health.

The growing demand for rehabilitation services emphasizes the need for highly trained and compassionate physiotherapy professionals. At our department, we remain committed to providing a comprehensive curriculum that integrates theoretical knowledge with extensive clinical exposure. We encourage students to cultivate critical thinking, professional ethics, and evidence-based practice, ensuring their readiness for diverse healthcare challenges.

We are proud of our achievements and excited about the promising path ahead. We warmly welcome all aspiring students to join our department and contribute to the advancement of physiotherapy. Together, let us strive to serve humanity, promote well-being, and uphold the values of this noble profession.

Faculty Members of Physiotherapy Department



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Dr. Paramita Biswas (PT)
Assistant Professor
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Guest Faculty Members

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Assistant Professor
AIIMS Kalyani
MBBS, MS, MCH (Burns & Plastic Surgery)

Dr. Saikat Roy
Assistant Professor
College of Medicine and JNM Hospital
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Editorial Note

Promoting Healthy Ageing Through Physiotherapy: Preventing Falls & Frailty

Introduction *- Healthy ageing is a global public health priority as the proportion of older adults continues to rise worldwide. Ageing is often accompanied by progressive physiological changes such as reduced muscle mass, impaired balance, decreased bone density, and slowed neuromuscular responses. These changes significantly increase the risk of frailty and falls, which are among the leading causes of disability, loss of independence, hospitalization, and mortality in older populations. According to epidemiological studies, approximately one-third of adults aged 65 years and above experience at least one fall annually, with the risk increasing further in frail individuals.*

Frailty is a multidimensional geriatric syndrome characterized by diminished strength, endurance, and physiological reserve, rendering older adults vulnerable to adverse health outcomes. Falls and frailty are closely interrelated, sharing common risk factors such as sarcopenia, impaired postural control, reduced mobility, and physical inactivity. Preventing these conditions is essential for promoting functional independence, quality of life, and healthy longevity.

Physiotherapy plays a crucial role in promoting healthy ageing through evidence-based, non-pharmacological interventions aimed at preventing falls and delaying or reversing frailty. Research demonstrates that targeted physiotherapy programs incorporating strength training, balance exercises, gait retraining, flexibility, and functional task practice can significantly reduce fall risk and improve physical performance in older adults. Additionally, physiotherapists contribute to early identification of frailty, individualized risk assessment, and education on safe movement strategies.

Recent systematic reviews and randomized controlled trials highlight that multicomponent physiotherapy interventions are more effective than single-modality approaches in addressing the complex physiological and functional deficits associated with ageing. Furthermore, physiotherapy-led preventive strategies are cost-effective and adaptable across community, clinical, and residential care settings.

This presentation explores the role of physiotherapy in promoting healthy ageing by focusing on the prevention of falls and frailty. It emphasizes the scientific rationale, key mechanisms, and research evidence supporting physiotherapy-based interventions as essential components of geriatric healthcare and preventive medicine.

Faculties Forum

When Mindful Movement Meets Smart Technology: Bridging Innovation in Modern Geriatric Physiotherapy

Dr. Swarup Ghosh (PT)
Assistant Professor
Department of Physiotherapy
MPT Orthopaedics

Dr. Swarup Ghosh (PT)

Assistant Professor, Department of Physiotherapy, Swami Vivekananda University

Falls and frailty are among the leading causes of disability, hospitalization, and loss of independence in older adults. Traditional physiotherapy—focused on strength, balance, and gait—remains essential, but ageing affects more than muscles alone. Declines in reaction time, sensory integration, confidence, breathing efficiency, and cognitive processing play an equally critical role in fall risk.

Emerging physiotherapy approaches now address ageing as a ***whole-body, whole-brain phenomenon****, recognizing the interaction between movement, posture, breathing, attention, and confidence. Two such approaches—****Therapeutic Tai Chi*** *and* ***Exergaming-Based Physiotherapy****—represent a powerful blend of mindful movement and smart technology, offering safe, effective, and engaging strategies for healthy ageing.*

1. Therapeutic Tai Chi: Training Stability Through Slow, Intentional Movement

From Traditional Practice to Evidence-Based Therapy

Tai Chi, traditionally known as a martial art, has evolved into a scientifically supported therapeutic tool in geriatric physiotherapy. When adapted by physiotherapists, Tai Chi becomes a precise balance, postural control, and breathing-based intervention, often referred to as ***Therapeutic Tai Chi****.*

Unlike conventional exercises, Therapeutic Tai Chi emphasizes:

- *Slow, continuous weight shifting*
- *Upright postural alignment*
- *Controlled transitions between movements*
- *Synchronized diaphragmatic breathing*
- *Mindful awareness of body position*

A key distinguishing feature is the ***intentional coordination of breathing with movement****. Inhalation typically accompanies preparatory or opening movements, while exhalation occurs during weight transfer, lowering, or settling phases. This breath–movement synchronization improves movement efficiency and postural control.*

Why Tai Chi Works for Fall and Frailty Prevention

Therapeutic Tai Chi addresses multiple fall-risk factors simultaneously:

- ***Balance & postural control:*** *Continuous center-of-mass adjustment improves stability*
- ***Lower limb strength:*** *Semi-flexed postures strengthen antigravity muscles*
- ***Proprioception:*** *Enhanced joint position awareness reduces missteps*
- ***Breathing control:*** *Slow diaphragmatic breathing improves trunk stability and movement coordination*
- ***Confidence:*** *Gentle, predictable movement patterns reduce fear of falling*

Additionally, controlled breathing promotes parasympathetic nervous system activation, reducing anxiety and excessive muscle stiffness. This is particularly beneficial for frail and pre-frail older adults who may experience fear, fatigue, or breath-holding during movement.

Together, these effects make Therapeutic Tai Chi especially suitable for older adults who are hesitant to engage in high-intensity or fast-paced exercise.

Physiotherapy Integration

Physiotherapists can incorporate Therapeutic Tai Chi by:

- *Using simplified movement sequences*
- *Coaching slow, diaphragmatic breathing during transitions*
- *Adapting postures for chair-based or support-assisted practice*
- *Integrating Tai Chi elements into balance training and warm-up sessions*

Therapeutic Tai Chi is ***low-cost, low-risk, and highly sustainable****, making it ideal for both clinical and community-based geriatric rehabilitation programs.*

2. Exergaming for Elders: When Technology Trains Balance and Reaction

What Is Exergaming in Geriatric Physiotherapy?

Exergaming combines physical exercise with interactive digital feedback using motion sensors, balance platforms, or screen-based systems. In physiotherapy, it transforms routine balance and gait exercises into goal-oriented, engaging tasks.

Rather than repeating static exercises, older adults respond to visual cues by shifting weight, stepping, or reaching in real time—closely mimicking real-life balance challenges.

How Exergaming Reduces Fall Risk

Exergaming targets critical fall-related deficits:

- ***Reaction time:*** *Trains rapid responses to balance disturbances*
- ***Motor–cognitive integration:*** *Simultaneously challenges attention and movement*

- ***Visual–spatial awareness:*** *Improves coordination and accuracy*
- ***Motivation & adherence:*** *Game-like tasks increase participation and enjoyment*

Importantly, exergaming allows therapists to safely challenge balance while monitoring performance and progression.

Clinical and Home-Based Applications

Exergaming can be used:

- *In outpatient and inpatient rehabilitation*
- *As part of group balance training*
- *In telerehabilitation and home exercise programs*
- *For progress tracking through performance data*

It is particularly effective for active older adults and those transitioning from clinic-based therapy to independent community mobility.

Conclusion: Redefining Movement for Healthy Ageing

Healthy ageing is not about avoiding movement—it is about ***moving wisely****. Therapeutic Tai Chi and Exergaming reflect a new physiotherapy paradigm where* ***balance, breathing, cognition, confidence, and control*** *are trained together.*

By integrating mindful movement with smart technology, physiotherapists can move beyond traditional exercise prescription toward ***movement empowerment****, ensuring safer mobility, reduced falls, and improved quality of life for older adults.*

Can Ageing Be Slowed? A Physiotherapy Perspective on Staying Functional

Dr. Saptarshi Mondal (PT)
Assistant Professor
Department of Physiotherapy
MPT Sports

Dr. Saptarshi Mondal (PT)

Assistant Professor, Department of Physiotherapy, Swami Vivekananda University

Ageing is commonly perceived as an unavoidable decline in physical ability, where weakness, imbalance, and dependency are accepted as normal. From a physiotherapy perspective, however, ageing itself is not the primary problem—loss of function is. While the passage of time cannot be reversed, the rate at which strength, balance, coordination, and confidence are lost can be significantly influenced by how the body is trained and maintained across life.

In daily life, functional ageing begins gradually and often goes unnoticed. Muscles lose strength when they are not regularly loaded, joints become stiff when movement variety is reduced, and balance responses slow when stability is never challenged. These changes accumulate silently and later appear as difficulty climbing stairs, fear of falling, early fatigue, or avoidance of activity. Physiotherapy views this decline as deconditioning rather than an inevitable consequence of age.

The concept of slowing functional ageing is clearly visible in modern sport. Athletes such as MS Dhoni, Virat Kohli, and Sunil Chhetri continue to perform at elite levels well beyond traditional expectations, not because ageing has stopped, but because it has been managed intelligently. Dhoni represents movement efficiency, joint preservation, and precise load management. Kohli exemplifies consistency in strength training, cardiovascular fitness, recovery discipline, and movement control. Chhetri demonstrates how long-term aerobic conditioning and movement economy support sustained performance. From a physiotherapy perspective, all three illustrate the same principle: ageing is slowed when strength, balance, coordination, and recovery are trained deliberately rather than left to chance.

For a normal individual, the same principles apply, though at a different intensity. Slowing functional ageing does not require athletic training, but it does require regular exposure to strength and balance demands. Strength is the foundation of independence. Activities such as sit-to-stand repetitions, stair climbing, carrying moderate loads, resisted walking, and controlled floor movements help preserve muscle mass, bone health, and joint stability.

Balance must also be trained intentionally. Walking alone is not enough to maintain postural control. Physiotherapy emphasizes activities that involve weight shifting, reduced base of support, changes in direction, and divided attention. These challenges maintain the nervous system's ability to respond quickly to instability, which is essential for preventing falls.

Recovery and movement quality are equally important. Healthy ageing is not about constant exertion, but about allowing the body time to adapt. Adequate sleep, hydration, mobility exercises, and rest between demanding activities support tissue recovery and long-term resilience.

Recreational physical activities provide a sustainable way to apply these principles in everyday life. Walking programs, swimming, cycling, yoga-based movement, and modified sports stimulate muscular, cardiovascular, balance, and cognitive systems simultaneously. These activities improve consistency, enjoyment, and confidence.

Fear remains one of the most powerful accelerators of ageing. Fear of falling, pain, or injury often leads to unnecessary restriction of movement. Physiotherapy addresses this through education, graded exposure, and confidence-building strategies.

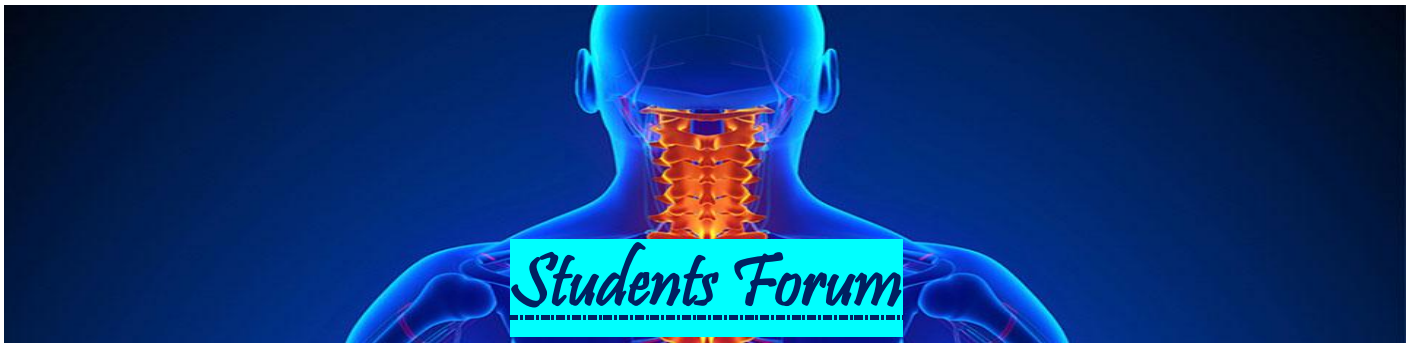
Ultimately, slowing ageing is not about avoiding physical stress or accepting decline prematurely. It is about intelligent movement, regular strength and balance challenges, adequate recovery, and lifelong consistency. Physiotherapy offers a practical framework for maintaining independence, reducing frailty, and preserving quality of life.

Ageing is a biological reality, but functional decline is largely influenced by lifestyle and movement behaviour. The body adapts to what it is repeatedly exposed to—when muscles, balance systems, and coordination are challenged, they remain capable; when they are underused, they deteriorate.

For healthy ageing, every individual should prioritise three non-negotiables: strength, balance, and recovery. Strength training two to three times a week preserves muscle mass, joint stability, and bone health. Balance and coordination exercises must be deliberately included to maintain postural control and prevent falls. Equally important is recovery—adequate sleep, hydration, mobility work, and rest days allow the body to adapt and remain resilient.

Recreational physical activity is not optional; it is essential. Walking, swimming, cycling, yoga-based movement, and modified sports provide sustainable ways to keep the body and mind engaged. Fear-based inactivity accelerates ageing, whereas guided, purposeful movement slows it.

Ageing well is not about avoiding movement or accepting weakness. It is about moving intelligently, staying consistent, and respecting the body's capacity to adapt. Physiotherapy provides a clear, evidence-informed framework to help individuals remain independent, confident, and functional throughout life.



Cardio-Geriatric Physiotherapy in COPD: Integrating Cardiac Rehabilitation Principles for Healthy Ageing

Mr. Dipen Kabasi
MPT Cardiopulmonary,
2nd Semester (Batch 2024)

Mr. Dipen Kabasi, MPT (Cardiopulmonary), 2nd Semester, (Batch 2025)

Introduction: COPD in Older Adults

Chronic Obstructive Pulmonary Disease (COPD) in older adults is frequently accompanied by cardiovascular disease, creating a complex clinical profile marked by breathlessness, reduced exercise tolerance, frailty, and functional decline. Traditional pulmonary rehabilitation alone may not adequately address the cardiovascular limitations present in this population. Cardiac Rehabilitation (CR) guidelines, which emphasize safety, individualized exercise prescription, and functional capacity, offer a valuable framework for managing geriatric COPD.

Aligning cardio-geriatric physiotherapy with CR principles allows physiotherapists to simultaneously address respiratory dysfunction, cardiac risk, and age-related deconditioning—making rehabilitation safer, more holistic, and function-oriented.

Why Cardiac Rehabilitation Principles Matter in Geriatric COPD

Exercise intolerance in older adults is rarely caused by a single system failure. Reduced cardiac reserve, impaired oxygen delivery, skeletal muscle dysfunction, and autonomic imbalance often coexist with ventilatory constraints and respiratory muscle weakness seen in COPD. CR-aligned physiotherapy shifts the focus from isolated pulmonary metrics to overall functional performance and cardiovascular safety.

This approach is especially relevant in elderly COPD patients with ischemic heart disease, hypertension, heart failure (particularly HFpEF), or arrhythmias, where unmonitored exercise may increase risk.

Assessment: Building a Safe Rehabilitation Foundation

CR guidelines stress the importance of pre-exercise assessment and risk stratification. In geriatric COPD, this includes:

- ***Cardiovascular risk evaluation:*** *History of cardiac events, medications, blood pressure response, and rhythm stability*
- ***Functional capacity testing:*** *Submaximal tests such as the 6-Minute Walk Test, with monitoring of heart rate, oxygen saturation, dyspnea, and perceived exertion*

- ***Frailty and balance screening:*** *Identification of fall risk, postural instability, and orthostatic symptoms*

Dyspnea and fatigue are treated as critical exercise-limiting symptoms, similar to angina in cardiac populations.

Exercise Prescription: Applying CR Principles to Pulmonary Care

CR guidelines recommend ***moderate-intensity, symptom-limited exercise****, which aligns well with pulmonary rehabilitation goals.*

Aerobic training *includes walking or cycling, often delivered in an interval format to reduce ventilatory and cardiovascular stress while improving endurance. Intensity is guided by symptoms and perceived exertion rather than maximal heart rate.*

Resistance training *is essential to counter sarcopenia and functional decline. Low-to-moderate loads targeting major muscle groups improve peripheral efficiency, reducing overall cardiorespiratory demand during daily activities.*

Breathing and Respiratory Muscle Training

Inspiratory Muscle Training (IMT) integrates well within a CR framework. In cardio-geriatric COPD patients, IMT improves inspiratory strength, reduces exertional dyspnea, and may lower sympathetic cardiovascular stress.

Breathing strategies such as pursed-lip and slow diaphragmatic breathing enhance ventilatory efficiency, stabilize blood pressure, and support autonomic regulation during exercise and functional tasks.

Monitoring, Education, and Long-Term Care

Monitoring heart rate, oxygen saturation, and symptom response is central to CR-aligned physiotherapy. Early recognition of abnormal responses—such as excessive dyspnea, dizziness, or desaturation—ensures patient safety.

Education plays a key role in promoting self-management. Teaching pacing, energy conservation, breathing control, and safe progression of activity improves confidence and long-term adherence to rehabilitation.

Tele-rehabilitation and home-based CR models further extend care for older adults with mobility limitations or limited access to rehabilitation centers.

Conclusion

Integrating cardiac rehabilitation principles into geriatric COPD physiotherapy represents a shift toward ***safer, more individualized, and function-centered care****. By addressing respiratory, cardiovascular, and age-related impairments together, physiotherapists can improve exercise tolerance, reduce symptom burden, and enhance quality of life in older adults living with COPD.*

Chronic Pain and Kinesiophobia: A Biopsychosocial Perspective in Physiotherapy Rehabilitation

Mr. Suvrajit Modak
MPT Orthopedics,
1st Semester (Batch 2025)

Mr. Suvrajit Modak, MPT (Orthopedics) 1st Semester, (Batch 2025)

Introduction: Understanding Chronic Pain and Kinesiophobia

Chronic pain—defined as pain that persists or recurs beyond the normal tissue healing period, usually longer than three months—is not merely a symptom but a condition in its own right. It affects a large proportion of the population and often leads to significant functional disability, emotional distress, and reduced participation in daily life. Chronic pain is frequently associated with psychological comorbidities such as depression, anxiety, and sleep disturbances, which further compound its impact.

As pain becomes long-standing, many individuals develop a fear of movement and physical activity, a phenomenon known as ***kinesiophobia****. Kinesiophobia is described as an irrational, weakening, and debilitating fear of movement resulting from beliefs about bodily fragility and the risk of re-injury. This fear can become deeply ingrained and often persists even when tissue healing has occurred.*

The interaction between chronic pain and kinesiophobia creates a vicious cycle: pain leads to fear, fear leads to avoidance of movement, and avoidance results in physical deconditioning, increased sensitivity, and worsening pain. Breaking this cycle is essential, as pain-related fear has been shown to be a stronger predictor of long-term disability than pain intensity itself.

Impact on Mobility, Mood, and Quality of Life

The combined effects of chronic pain and kinesiophobia significantly compromise an individual's quality of life. Everyday activities such as walking, bending, lifting, or prolonged sitting may be perceived as threatening, leading to progressive avoidance of movement. Over time, this results in reduced mobility, muscle weakness, joint stiffness, and loss of functional independence.

Beyond physical limitations, chronic pain is closely linked to emotional and psychological distress. Individuals often experience anxiety, depressive symptoms, sleep disturbances, and reduced social participation. Work absenteeism and reduced productivity are common, further contributing to psychosocial burden.

In older adults, the consequences can be even more pronounced. Reduced activity levels accelerate frailty, increase fall risk, and contribute to dependence on caregivers. Social withdrawal and fear-based inactivity may hasten physical decline, reinforcing the pain–fear–disability cycle.

Physiotherapy Assessment and Treatment Approaches

Physiotherapy plays a pivotal role in addressing chronic pain and kinesiophobia through a ***biopsychosocial approach*** *that considers physical, psychological, and social influences on pain and movement. Comprehensive assessment includes not only physical impairments but also beliefs, fear-avoidance behaviors, and functional limitations. Tools such as the* ***Tampa Scale of Kinesiophobia*** *are commonly used to quantify fear of movement and guide clinical decision-making.*

Intervention strategies focus on education, reassurance, and graded exposure to movement. Patients are guided to understand that ***hurt does not always mean harm****, and that safe, controlled movement is essential for recovery. Graded exercise programs are designed to progressively reintroduce movement in a structured and confidence-building manner, reducing fear while improving strength and function.*

Psychologically informed physiotherapy integrates movement-based rehabilitation with cognitive and behavioral principles. Progressive exposure to feared activities, combined with patient education and therapeutic exercise, has demonstrated effectiveness in reducing pain intensity, disability, fear, and associated depressive symptoms in individuals with chronic musculoskeletal pain.

Conclusion: Restoring Confidence Through Movement

Chronic pain and kinesiophobia can feel overwhelming for individuals living with persistent symptoms, but recovery is possible with appropriate support and guidance. Physiotherapy offers a pathway to rebuilding trust in the body through safe, purposeful movement. As confidence improves, functional capacity increases, and daily activities gradually become less threatening.

Each movement becomes a positive message to the nervous system—reinforcing capability rather than fear. With patience, persistence, and professionally guided rehabilitation, individuals can move beyond pain-driven avoidance and reclaim meaningful participation in daily life.

Movement is not the enemy in chronic pain—it is part of the medicine.

Physiotherapy as a Lifelong Investment in breaking fall-frailty cycle

Ms. Khushi Tiwari
BPT 7th Semester
(Batch 2022)

Ms. Khushi Tiwari, BPT 7th Semester (Batch 2022)

Breaking of Fall-Frailty Cycle

Ageing is a natural biological process leading to gradual decline in muscle strength, balance, bone density, and neuromuscular coordination. ***Falls and frailty is one of the most serious consequences of this decline****, which significantly affect independence of an individual, quality of their life, and healthcare burden among older adults. Physiotherapy plays a* ***preventive, promotive, and rehabilitative role*** *in ensuring healthy ageing by maintaining functional capacity and minimizing fall risk.*

What Falls and Frailty is?

Fall is *one of the leading causes of injury, disability, and mortality in the elderly population. A fall is most of the time not a random event but a result of multiple interacting factors such as muscle weakness, impaired balance, reduced reaction time, sensory deficits, and environmental hazards.*

Frailty *is a geriatric syndrome characterized by decreased physiological reserve and resistance to stressors. It includes unintentional weight loss, fatigue, reduced grip strength, slow walking speed, and low physical activity levels. Frailty increases risks to falls, hospitalization, and dependency.*

Risk Factors leading to Falls and Frailty

- *Age-related loss of muscle mass*
- *Reduced joint mobility and postural imbalance*
- *Visual and vestibular impairments*
- *Neurological conditions (stroke, Parkinson's disease)*
- *Osteoporosis and fear of falling*
- *Sedentary lifestyle and poor physical conditioning*

Physiotherapists are trained to identify these risk factors early and implement targeted interventions.

Physiotherapy role in Preventing Falls

Physiotherapy interventions focus on ***improving strength, balance, coordination, and confidence****.*

Key strategies include:

- ***Balance training*** *(static and dynamic balance exercises)*
- ***Lower limb strengthening*** *(quadriceps, ankle stabilizers etc.)*
- ***Gait training***

- ***Proprioceptive training*** *using unstable surfaces*
- ***Reaction time and functional task training***

Role of Physiotherapy in Preventing Frailty

Physiotherapy aims to delay or reverse frailty through functional training and ***graded physical activities.***

Interventions:

- ***Progressive resistance training*** *to counteract sarcopenia*
- ***Endurance training*** *to improve cardiovascular fitness*
- ***Flexibility exercises*** *to maintain joint range of motion*
- ***Functional training*** *(sit-to-stand, stair climbing)*
- ***Postural correction and core stability exercises***

These interventions help older adults maintain independence in activities of daily living (ADLs).

Pre-Frailty Rehabilitation:

It focuses on early identification of individuals at risk before frailty fully develops. Community-based screening programs, simple tests like ***Timed Up and Go (TUG)*** *and* ***Five Times Sit-to-Stand Test****, and early exercise prescription can help in preventing progression to different disabilities.*

This driven approach shifts physiotherapy from ***reactive rehabilitation to preventive care****, reducing the long-term healthcare costs and improving healthy life expectancy.*

Health Education and Environmental Modification

- *Educating patients and caregivers about safe mobility*
- *Advising on home modifications (handrails, anti-slip mats)*
- *Encouraging lifelong physical activity and active ageing*
- *Addressing fear of falling through confidence-building exercises*

Conclusion

Physiotherapy is a cornerstone in elevating healthy ageing by preventing falls and frailty. Through early assessment, individualized and graded exercise programs, and patient education, physiotherapist empowers older adults to remain active, independent, and socially engaged. Integrating physiotherapy into community and geriatric healthcare is essential for ensuring a dignified, independent and healthy ageing population.

"Ageing is inevitable, but functional decline is not — physiotherapy makes the difference."

Exercise: The Lifelong Elixir for a Healthy Ageing Heart

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(Batch 2022)

Mr. Anindya Singh, BPT 5th Semester (Batch 2023)

Introduction: Can Exercise Slow Cardiovascular Ageing?

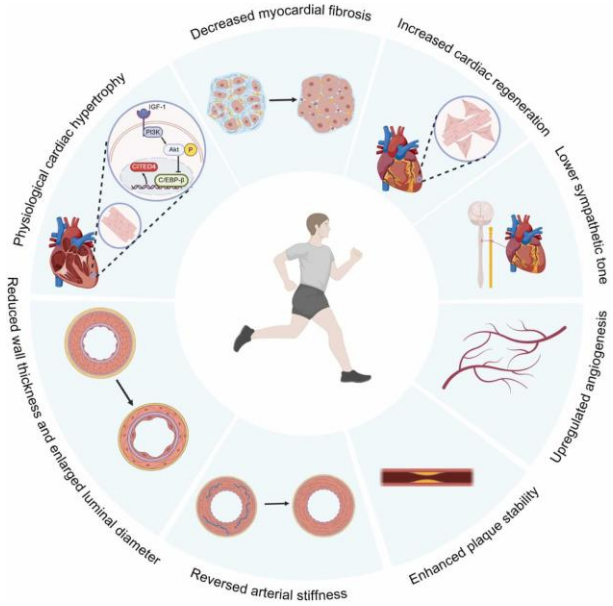
Cardiovascular disease continues to be the leading cause of mortality worldwide, with risk increasing significantly as we age. While ageing is inevitable, the decline of cardiovascular health does not have to be. Emerging scientific evidence consistently highlights ***exercise as one of the most powerful, cost-effective, and accessible "elixirs"*** *to combat cardiovascular ageing.*

Beyond improving fitness or body weight, regular physical activity directly influences the structure and function of the ageing heart and blood vessels. For physiotherapists, exercise is not merely an adjunct—it is ***preventive medicine in motion****.*

Understanding Cardiovascular Ageing

With advancing age, the cardiovascular system undergoes predictable yet impactful changes, including:

- *Stiffening of blood vessels*
- *Reduced arterial elasticity*
- *Decline in cardiac output*
- *Elevated resting blood pressure*



These changes collectively increase the risk of hypertension, stroke, myocardial infarction, arrhythmias, and heart failure. While chronological ageing cannot be reversed, ***physiological ageing of the cardiovascular system can be slowed—and in some aspects partially reversed—through regular exercise****.*

How Exercise Protects the Ageing Heart

Exercise exerts protective effects at multiple levels of cardiovascular function:

- ***Improved vascular elasticity:*** *Aerobic activity enhances nitric oxide release, improving endothelial function*
- ***Blood pressure regulation:*** *Regular exercise naturally reduces systolic and diastolic blood pressure*
- ***Reduced inflammation:*** *Physical activity lowers systemic inflammation linked to atherosclerosis*
- ***Improved cardiac efficiency:*** *Trained hearts pump more blood per beat with a lower resting heart rate*
- ***Favorable lipid profile:*** *Exercise increases HDL ("good") cholesterol*
- ***Lower arrhythmia risk:*** *Improved autonomic balance reduces rhythm disturbances*

Together, these adaptations form a ***cardiovascular shield against ageing****.*

Exercise and Healthy Cardiovascular Ageing: What the Science Says

Recent research suggests that exercise promotes healthy cardiovascular ageing through multiple interconnected mechanisms:

- *Attenuation of traditional cardiovascular risk factors*
- *Structural remodeling of the heart and blood vessels*
- *Improved metabolic and mitochondrial efficiency*
- *Exerkine-mediated communication between muscles, heart, and other organs*

Although the exact molecular pathways are still being explored, the clinical benefits are well established—reinforcing exercise as a cornerstone of preventive cardiology and geriatric physiotherapy.

Types of Exercises Recommended for Older Adults

1. Aerobic (Cardio) Exercise

The cornerstone of cardiovascular health in ageing, aerobic exercise improves heart–lung efficiency, reduces arterial stiffness, and enhances endurance.
Examples: *Walking, cycling, swimming, jogging, dancing, stair climbing.*

2. Breathing Exercises

Breathing exercises support heart–lung coordination by improving oxygenation, reducing cardiac workload, and promoting relaxation. Techniques such as diaphragmatic breathing, pursed-lip breathing, alternate nostril breathing, and FET enhance autonomic balance and stress regulation.

3. Resistance Training

Performed 2–3 times per week, resistance training improves metabolic health, supports cardiovascular function, and helps maintain strength and independence. Free weights, machines, or resistance bands may be used under supervision.

4. Flexibility and Balance Training

Flexibility and balance exercises enable safe movement and reduce fall risk while supporting overall cardiovascular participation.

Examples: *Stretching, yoga, Pilates, Tai Chi, tandem walking, single-leg stance, and chair-assisted balance drills.*

Role of the Physiotherapist

Physiotherapists play a central role in cardiovascular health promotion by:

- *Designing individualized and safe exercise programs*
- *Monitoring cardiovascular responses to exercise*
- *Educating patients on lifestyle modification*
- *Supporting rehabilitation after cardiac events*

Exercise prescription is most effective when guided by professional assessment and progression.

Conclusion: Movement Is Medicine

Ageing is inevitable—but cardiovascular decline is not. Exercise is a powerful, non-invasive, and side-effect-free therapy that supports healthy ageing of the heart and blood vessels.

Whether one is 40 or 80, ***it is never too late to move for the heart****.*

Let exercise be your lifelong elixir.

Sarcopenia: Early Recognition and Management for Healthy Ageing

Ms. Khushi Jena
BPT 5th Semester
(Batch 2023)

Ms. Khushi Jena, BPT 5th Semester (Batch 2023)

Introduction: The Sarcopenia Early Recognition and Management

Sarcopenia is a progressive, age-related loss of skeletal muscle strength, mass, and physical performance. It is a major contributor to frailty, falls, disability, and loss of independence in older adults. Although commonly associated with ageing, sarcopenia is preventable and manageable with early identification and timely intervention, especially through physiotherapy.

Causes of Sarcopenia

Sarcopenia results from a combination of age-related muscle fiber loss, reduced motor unit function, hormonal changes, chronic inflammation, physical inactivity, and inadequate nutrition. Chronic conditions such as diabetes, cardiovascular disease, and osteoarthritis further accelerate muscle decline, leading to reduced mobility and endurance.

Clinical Classification of Sarcopenia

1. Probable Sarcopenia

This early stage is identified by reduced muscle strength alone and is the most responsive to intervention.

Reduced handgrip strength, difficulty standing from a chair, early fatigue during daily activities

2. Sarcopenia

Diagnosed when low muscle strength is accompanied by reduced muscle mass or quality.

Loss of appendicular muscle mass, reduced walking endurance, difficulty with daily activities

3. Severe Sarcopenia

Characterized by low muscle strength, low muscle mass, and poor physical performance.

Slow gait speed, poor balance and coordination, increased frailty and dependence

Assessment and Biomarkers- Functional Assessment, handgrip strength, chair stand test, gait speed / SPPB

Muscle Mass Assessment -DXA, bioelectrical impedance analysis (BIA)

Key Biomarkers

Inflammatory: *CRP, IL-6*

Hormonal: *Testosterone, IGF-1*

Nutritional: *Serum albumin, Vitamin D*

Metabolic: *Myostatin*

These measures help in diagnosis, staging, and monitoring treatment response.

Interventions for Sarcopenia

Physiotherapy and Exercise, progressive resistance training, functional training for daily activities, balance and gait training to prevent falls, aerobic exercises for endurance

Exercise programs should be individualized, progressive, and safely supervised.

Nutrition and Lifestyle Measures- Adequate protein intake, vitaminD supplementation when deficient, reduction of sedentary behavior

Effective management of chronic conditions

Combined exercise and nutrition strategies provide the best outcomes.

Importance of early intervention

Intervening at the probable sarcopenia stage can prevent or delay progression. Even in advanced stages, appropriate interventions can improve function, reduce fall risk, and enhance quality of life.

Conclusion

Sarcopenia is a common yet treatable condition affecting healthy ageing. Understanding its stages—probable sarcopenia, sarcopenia, and severe sarcopenia—along with appropriate assessment, biomarkers, and timely interventions, allows older adults to maintain strength, mobility, and independence. Physiotherapy plays a central role in enabling active, safe, and dignified ageing.

Strong Today, Independent Tomorrow: The Science of Movement in Healthy Ageing

Mr. Prithwiraj Dutta
BPT 5th Semester
(Batch 2023)

Mr. Prithwiraj Dutta, BPT 5th Semester (Batch 2023)

Ageing is inevitable—but dependency is not.

As life expectancy rises across the globe, the real challenge is no longer adding years to life, but adding life to years. One of the biggest threats to healthy ageing is the silent decline in movement—often culminating in falls, frailty, and loss of independence. This is where physiotherapy emerges as a powerful, evidence-based ally in helping older adults stay active, confident, and self-reliant.

Why Falls and Frailty Matter More Than We Think

Falls are not "just accidents." They are a major public health concern. A fall is defined as an unintentional change in position resulting in coming to rest on the ground or a lower level. Globally, nearly ***one in three adults over 65 experiences at least one fall each year****, making falls the leading cause of injury-related morbidity among older adults.*

Frailty, often described as the body's reduced ability to cope with everyday stressors, is characterized by:

- *Muscle weakness*
- *Fatigue and low endurance*
- *Slow walking speed*
- *Unintentional weight loss*
- *Reduced grip strength*

The key message? ***Frailty is not an unavoidable consequence of ageing.*** *It is dynamic, reversible, and highly responsive to early physiotherapy intervention.*

Physiotherapy: Where Science Meets Movement

Physiotherapy focuses on optimizing movement across the lifespan. In older adults, physiotherapists play a crucial role by identifying early signs of functional decline through detailed assessment of:

- *Muscle strength*
- *Balance and coordination*
- *Posture and gait*
- *Flexibility and joint mobility*
- *Functional task performance*

Research consistently shows that ***structured physiotherapy-led exercise programs can reduce fall risk by 30–40%****, making movement-based therapy one of the most effective preventive strategies in geriatric care.*

Key Physiotherapy Strategies for Preventing Falls and Frailty

1. Strength Training

Age-related muscle loss (sarcopenia) is a major contributor to frailty. Resistance and functional strengthening exercises—especially for the lower limbs and core—help restore muscle power, joint stability, and confidence in daily movement.

2. Balance and Gait Training

Balance training enhances sensory integration and postural control, while gait training improves walking speed, coordination, and step symmetry—critical factors in preventing trips and slips.

3. Flexibility and Mobility Exercises

Maintaining joint range of motion reduces stiffness, improves posture, and ensures efficient movement patterns essential for safe mobility.

4. Functional Task Practice

Training real-life activities such as sit-to-stand, stair climbing, and reaching tasks bridges the gap between exercise and everyday independence.

5. Education and Environmental Safety

Physiotherapists guide older adults and caregivers on safe movement strategies, proper footwear, home modifications, and fall-prevention habits—turning awareness into action.

The Power of Early Intervention

Perhaps the most impactful aspect of physiotherapy is ***timing****. Addressing mild balance issues or early strength loss before the first fall can prevent a cascade of complications—fractures, fear of falling, prolonged immobility, and dependency. Evidence strongly supports early intervention even in pre-frail individuals to slow or reverse functional decline.*

Beyond the Body: Mental and Social Well-being

The benefits of physiotherapy extend beyond physical health. Improved mobility fosters confidence, reduces fear of falling, and encourages social participation. Active older adults show lower rates of depression, cognitive decline, and social isolation—proving that movement is medicine for both body and mind.

A Community and Public Health Imperative

From a public health perspective, physiotherapy-led fall prevention programs significantly reduce healthcare costs linked to fractures, hospital admissions, and long-term care. Community-based exercise initiatives, awareness drives, and outreach programs play a vital role in building ***age-friendly societies*** *that value independence and dignity.*

Healthy ageing is not about slowing down—it's about moving smart. *With physiotherapy at the core, older adults can remain strong today and independent tomorrow.*

Conclusion

Healthy ageing is not about avoiding ageing—it is about ageing with strength, balance, and independence. Falls and frailty are significant yet preventable challenges when addressed through evidence-based physiotherapy interventions. By promoting movement, function, and awareness, physiotherapy serves as a cornerstone in ensuring that ageing remains a phase of life marked by confidence and capability rather than limitation.

Academic and Department Updates

Honoring Scholarly Contributions: Current Works by Our Faculty Members

We are delighted to spotlight the remarkable academic contributions of our Physiotherapy Department faculty members through their recent research article publications. Their dedication to scholarly exploration and evidence-based practice reflects our department's strong research culture and commitment to advancing physiotherapy knowledge. These publications not only enhance professional credibility but also provide valuable insights that support innovation in clinical practice, rehabilitation techniques, and patient care outcomes. Such achievements continue to inspire our students and reinforce our vision of academic excellence and leadership in the healthcare community.

Physiotherapy Faculty Research Publications:

Dr. Sourav Mitra (PT)

1. *Effectiveness of Surged Faradic Stimulation Combined with Static Cock-Up Splinting in Reducing Wrist Flexor Spasticity Among Chronic Stroke Patients. (2025). International Journal of Environmental Sciences, 1665-1672. https://doi.org/10.64252/pkaztg40*
2. *A multimodal framework combining the 6-minute walk test, virtual reality and artificial intelligence for functional assessment and rehabilitation in pediatric ALS, Technische Sicherheit 25, 5 2025 1434-9728. https://doi.org/10.5281/zenodo.15517102*

Conference Proceedings:

Dr. Swarup Ghosh (PT)

1. *Effectiveness of Gross Arm Pull Technique in conjunction with Cranial Base Release on Pain, Range of Motion and Disability in patients with Cervical Spondylotic Radiculopathy: A Case Series. (ISBN: 978-93-343-9851-9)*

Dr. Sourav Mitra (PT)

International Journal of Environmental Sciences
ISSN: 2229-7359
Vol. 11 No. 20s, (2025)
https://theaspd.com/index.php/ijes

Effectiveness of Surged Faradic Stimulation Combined with Static Cock-Up Splinting in Reducing Wrist Flexor Spasticity Among Chronic Stroke Patients

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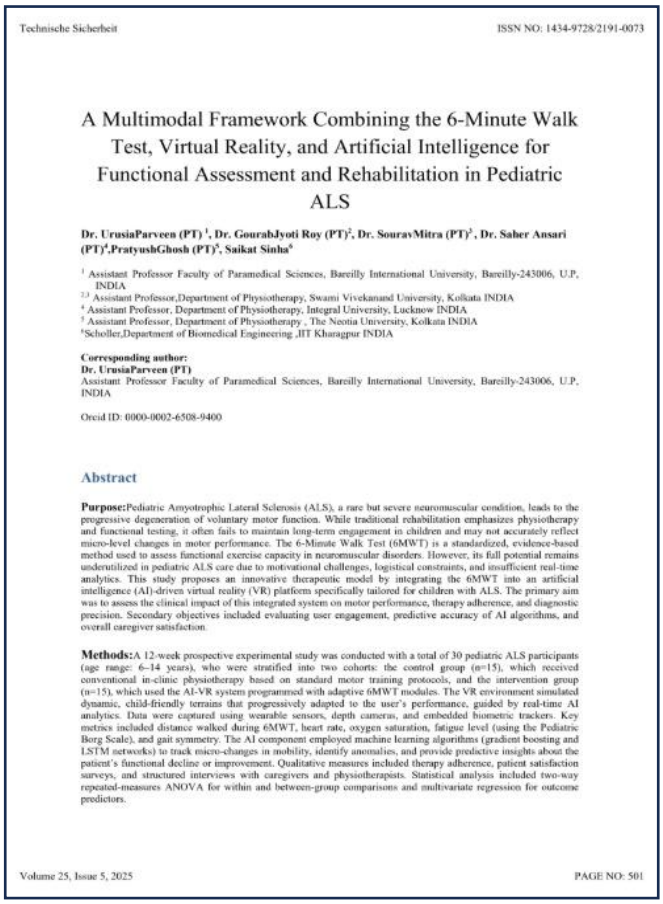
[4]Assistant Professor, Doon Institute of Medical Sciences, Dehradun, HNB University, Dehradun
[5]Professor, Jai Narayan College of Paramedical, Bhopal, JNCT Professional University, Bhopal, MP
[6]Assistant Professor, Rayat Bahra University, Punjab
[7]Assistant Professor, IIMT University, Meerut

Abstract
Background:
Wrist flexion spasticity is a common motor impairment seen in patients following a stroke, often affecting upper limb functionality and restricting voluntary wrist extension. Management strategies like stretching and splinting are widely used but may not be adequate when applied in isolation. Surged faradic stimulation has been proposed as an effective adjunct to enhance motor recovery through muscle re-education.
Objective:
To compare the effectiveness of combining surged faradic muscle stimulation on wrist extensors with wrist flexor stretching and static cock-up splinting, versus using splinting and stretching alone in reducing wrist flexion spasticity among chronic stroke patients.
Methods:
A total of 40 patients with chronic stroke and wrist flexor spasticity (MAS grades 2–3) were randomly assigned into two equal groups. Group A received wrist flexor stretching followed by the application of a static cock-up splint, while Group B received the same protocol along with additional surged faradic muscle stimulation on wrist extensors. The intervention period lasted for three weeks. Outcome measures included the Modified Ashworth Scale (MAS) and Active Range of Motion (AROM) of wrist extension.
Results:
Both groups demonstrated statistically significant improvements in MAS scores and wrist AROM after the intervention period ($p < 0.05$). However, Group B showed more pronounced improvements in both outcome measures compared to Group A.
Conclusion:
The combination of surged faradic muscle stimulation with static cock-up splinting and stretching proves to be more effective than splinting and stretching alone in reducing wrist flexion spasticity and enhancing wrist extension in chronic stroke patients.
Keywords: *Stroke, spasticity, wrist extension, faradic stimulation, static cock-up splint, rehabilitation.*

INTRODUCTION
Stroke is a major global health burden and a leading cause of long-term disability. Among the motor impairments that follow a cerebrovascular accident, spasticity of the upper extremity—particularly involving the wrist flexors—poses significant challenges to functional independence and quality of life[1]. Wrist flexion



Technische Sicherheit
ISSN NO: 1434-9728/2191-0073

A Multimodal Framework Combining the 6-Minute Walk Test, Virtual Reality, and Artificial Intelligence for Functional Assessment and Rehabilitation in Pediatric ALS

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Abstract

Purpose: Pediatric Amyotrophic Lateral Sclerosis (ALS), a rare but severe neuromuscular condition, leads to the progressive degeneration of voluntary motor function. While traditional rehabilitation emphasizes physiotherapy and functional testing, it often fails to maintain long-term engagement in children and may not accurately reflect micro-level changes in motor performance. The 6-Minute Walk Test (6MWT) is a standardized, evidence-based method used to assess functional exercise capacity in neuromuscular disorders. However, its full potential remains underutilized in pediatric ALS care due to motivational challenges, logistical constraints, and insufficient real-time analytics. This study proposes an innovative therapeutic model by integrating the 6MWT into an artificial intelligence (AI)-driven virtual reality (VR) platform specifically tailored for children with ALS. The primary aim was to assess the clinical impact of this integrated system on motor performance, therapy adherence, and diagnostic precision. Secondary objectives included evaluating user engagement, predictive accuracy of AI algorithms, and overall caregiver satisfaction.

Methods:A 12-week prospective experimental study was conducted with a total of 30 pediatric ALS participants (age range: 6–14 years), who were stratified into two cohorts: the control group (n=15), which received conventional in-clinic physiotherapy based on standard motor training protocols, and the intervention group (n=15), which used the AI-VR system programmed with adaptive 6MWT modules. The VR environment simulated dynamic, child-friendly terrains that progressively adapted to the user's performance, guided by real-time AI analytics. Data were captured using wearable sensors, depth cameras, and embedded biometric trackers. Key metrics included distance walked during 6MWT, heart rate, oxygen saturation, fatigue level (using the Pediatric Borg Scale), and gait symmetry. The AI component employed machine learning algorithms (gradient boosting and LSTM networks) to track micro-changes in mobility, identify anomalies, and provide predictive insights about the patient's functional decline or improvement. Qualitative measures included therapy adherence, patient satisfaction surveys, and structured interviews with caregivers and physiotherapists. Statistical analysis included two-way repeated-measures ANOVA for within and between-group comparisons and multivariate regression for outcome predictors.

Dr. Swarup Ghosh (PT)

ISBN NO. 978-93-343-9851-9

OSTEO MANUAL SUMMIT 2025
THEME: "One Nation, One Curriculum
A New Perspective to Physiotherapy"

Effectiveness of Gross Arm Pull Technique in conjunction with Cranial Base Release on Pain, Range of Motion and Disability in patients with Cervical Spondylotic Radiculopathy: A Case Series

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Abstract

Background and Purpose: Cervical spondylotic radiculopathy (CSR) is a common degenerative cervical condition characterized by neck pain, stiffness, radiating arm pain, restricted mobility, and disability. Conventional physiotherapy methods such as traction, electrotherapy, and exercises can be effective but often require prolonged treatment and may not fully resolve persistent symptoms. Myofascial restrictions, though less emphasized in CSR, significantly contribute to pain and dysfunction. Addressing these restrictions may enhance recovery and clinical outcomes. This study examined the effectiveness of gross arm pull and cranial base release, combined with postural reeducation, in reducing pain, improving cervical mobility, and decreasing disability in CSR patients.

Methods: Three participants (two females and one male) with radiologically confirmed cervical degeneration and symptoms persisting for over three months —neck pain radiating to the arm, restricted cervical range of motion, and difficulty performing daily activities —were enrolled. Outcome measures included pain (Numerical Pain Rating Scale, NPRS), cervical range of motion (universal goniometer), and disability (Neck Disability Index, NDI; Quick - DASH). Baseline values were compared with scores after a two-week intervention, consisting of three sessions per week. Each 25 -minute session included gross arm pull and cranial base release techniques along with postural re-education exercises.

Results: Significant improvements were observed across all outcomes. NPRS scores decreased from 7.67 ± 0.57 to 2.67 ± 0.57 ($p < 0.01$, 95% CI), NDI scores reduced from 59.16 ± 2.88 to 25.00 ± 2.50 ($p < 0.01$, 95% CI), and QuickDASH scores improved from 55.83 ± 2.88to 13.33 ± 1.44 ($p < 0.01$, 95% CI). Additionally, significant improvements were observed across all cervical ranges of motion.

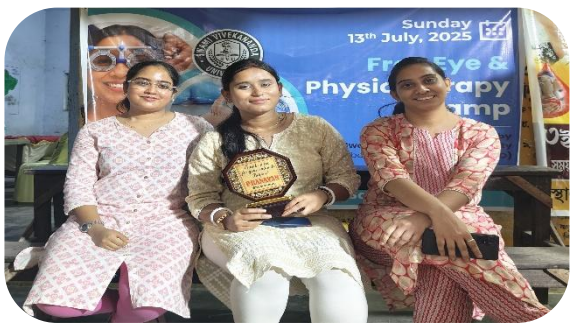
Outreach Program

Empowering Movement, Empowering Lives – Physiotherapy Health Checkup Camps

- *Physiotherapy health camps play a vital role in promoting early detection of musculoskeletal problems and spreading awareness about preventive care. These camps provide accessible assessment, guidance, and therapeutic support to the community, helping people improve their functional health and overall well-being.*

1st

*On **13.07.2025**, the Physiotherapy Department conducted a health camp at **Shyamnagar Subash Sangha Club/ Pranayan**, from **10:00 AM**, led by **Dr. Sanhita Bose (PT)** and **Dr. Raveena Kothari (PT)**. Attendees received personalized assessments and home-based exercises that helped them understand their conditions and manage pain effectively.*



2nd

Further camps were organized on ***20.07.2025*** *at* ***Nimta Aikkya Sammilani Club****, from* ***10:30 AM****, led by* ***Dr. Raveena Kothari (PT), Dr. Swarup Ghosh (PT).*** *The club arranged the camp smoothly, and participants benefited from expert screenings, corrective exercises, and early physiotherapy intervention.*

3rd

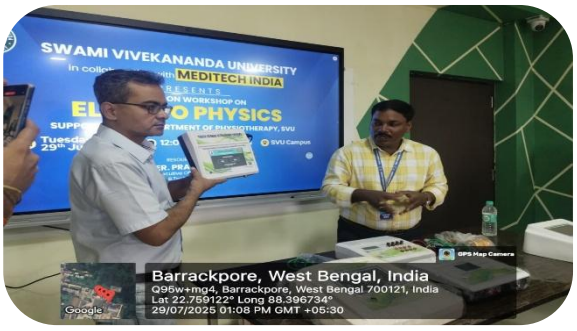
Another camp was held on ***29.07.2025*** *at* ***Kamakhya Balak Ashram, Madhyamgram****, from* ***10:30 AM****, conducted by* ***Dr. Sunayana Ghosh Dostider (PT).*** *Community members, along with highly enthusiastic participating students, received valuable guidance, posture correction, and therapeutic exercises that improved their* ***musculoskeletal awareness*** *and also* ***pediatric rehab*** *conditions.*

4th

*An additional camp on **17.08.2025** took place at **Pedaller Group, Agarpara**, from **10:30 AM**, led by **Dr. Swarup Ghosh (PT)** and **Dr. Saptarshi Mondal**. People in the locality, along with ten students, benefited through targeted physiotherapy screening and simple strategies to manage daily pain and postural issues, flexibility, and daily functional movement.*

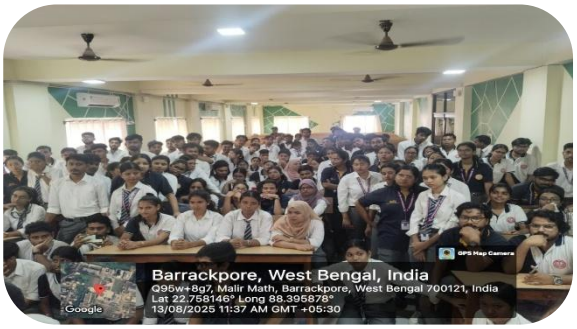
Advancing Clinical Skills Through Electrotherapy Workshops at Swami Vivekananda University

The ***Department of Physiotherapy, Swami Vivekananda University****, organized two enriching* ***hands-on electrotherapy workshops*** *in collaboration with leading industry partners, aimed at strengthening students' practical skills and clinical understanding of electrotherapeutic interventions.*



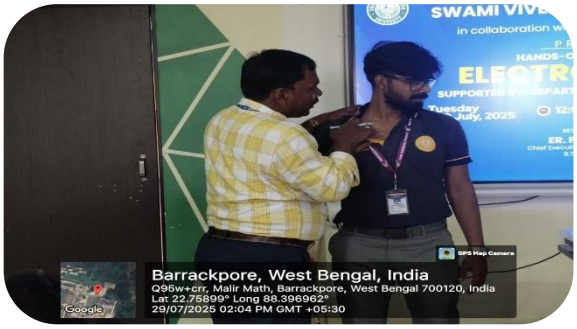
The first program, ***"Hands on Workshop on Electro Physics,"*** *was conducted on* ***29th July 2025*** *in association with* ***Meditech India****. This workshop focused on the fundamental principles of electrophysics, helping students develop a strong conceptual foundation behind electrotherapy modalities. Through interactive demonstrations and practical sessions, participants gained clarity on parameters, safety considerations, and the scientific basis of various electrotherapeutic currents.*

Building on this foundation, the second workshop titled ***"Hands on Clinical Workshop on Multimodal Electrotherapeutic Intervention"*** *was held on* ***13th August 2025*** *in collaboration with* ***EIA Medica System****. This session emphasized the* ***clinical application of multiple electrotherapy modalities*** *in musculoskeletal and neurological conditions. Students actively participated in hands-on demonstrations, learning appropriate electrode placement, treatment planning, and patient-specific modality selection.*

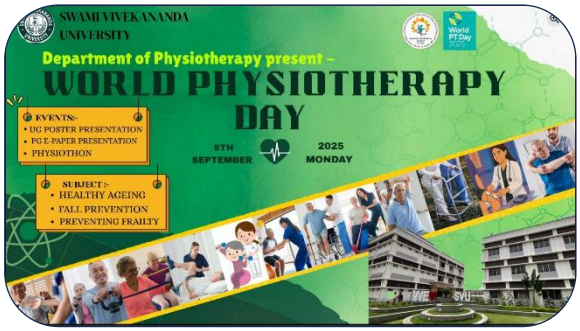


Both workshops were highly interactive and well-received, providing students with valuable exposure to ***evidence-based practice, modern equipment, and real-world clinical scenarios****. The sessions successfully bridged the gap between theoretical knowledge and practical implementation, enhancing students' confidence and competence in electrotherapy.*

Overall, these workshops reflected the department's continued commitment to ***skill-based learning, industry collaboration, and clinical excellence****, preparing future physiotherapists for effective and safe patient care.*



Celebrating Movement for Life: World Physiotherapy Day 2025 at Swami Vivekananda University



The ***Department of Physiotherapy, Swami Vivekananda University****, successfully organized* ***World Physiotherapy Day 2025*** *on* ***8th September 2025****, aligning with this year's global theme, "Promoting Healthy Ageing Through Physiotherapy: Preventing Falls & Frailty." The event aimed to highlight the vital role of physiotherapy in enhancing functional independence and quality of life among the ageing population.*

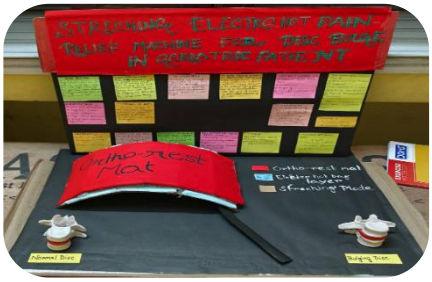
The celebration featured a range of ***academic and activity-based programs****, including* ***poster presentations*** *and an engaging* ***Physiothon****, which encouraged active participation from students and faculty members. The poster presentation session provided a platform for students to showcase research-oriented insights on fall prevention, frailty management, balance training, and evidence-based physiotherapy interventions for healthy ageing. The diversity and scientific depth of the posters reflected the growing emphasis on research and innovation in physiotherapy practice.*

The ***Physiothon*** *was one of the highlights of the event, promoting physical activity, teamwork, and awareness about the importance of movement and exercise across all age groups. The interactive nature of the activities fostered enthusiasm, learning, and a strong sense of community among participants.*

Overall, the celebration of World Physiotherapy Day 2025 was both ***educational and enjoyable****, reinforcing the importance of physiotherapy as a preventive and rehabilitative healthcare profession. The event successfully spread awareness about healthy ageing while inspiring students to actively contribute to the advancement of physiotherapy practice and research.*


FITNESS IS MY INSURANCE & EXERCISE IS MY PREMIUM


FROM INSTABILITY TO INDEPENDENCE
THE BBRS WAY
BBS


Who-rest Mat


HEALTHY AGEING

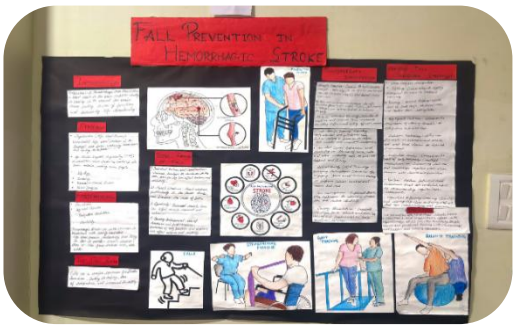

Visualizing SafeStep: A Closer Look at the Design

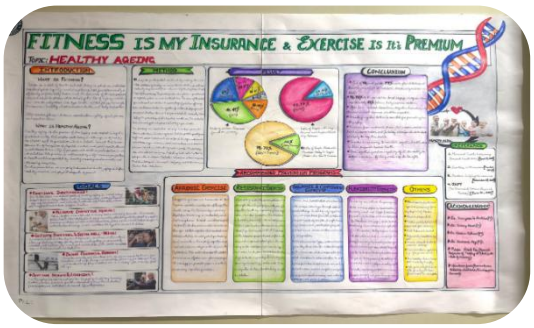

SELF-MOBILIZING SLIPPERS-
Stride Ease


SARCOPENIA


DUAL TAT Training


BREAKING THE CYCLE


FALL PREVENTION IN HEMORRHAGIC STROKE


FITNESS IS MY INSURANCE & EXERCISE IS MY PREMIUM
TOPIC: HEALTHY AGEING

Teachers Day

Celebrating the Pillars of Learning: Teachers' Day 2025 at the Department of Physiotherapy

The ***Department of Physiotherapy, Swami Vivekananda University****, joyfully celebrated* ***Teachers' Day 2025*** *on* ***4th September 2025****, honoring the dedication, guidance, and invaluable contributions of its faculty members. The event was marked by enthusiasm, creativity, and heartfelt appreciation, making it a memorable occasion for both students and teachers.*

The celebration featured a vibrant cultural program that included ***songs, dance performances, recitations, drama, and interactive games involving faculty members****, creating a lively and inclusive atmosphere. One of the most delightful highlights was the* ***collaborative performances by senior and junior students****, who came together for group dances and songs, symbolizing unity, mutual respect, and the strong bond within the department.*

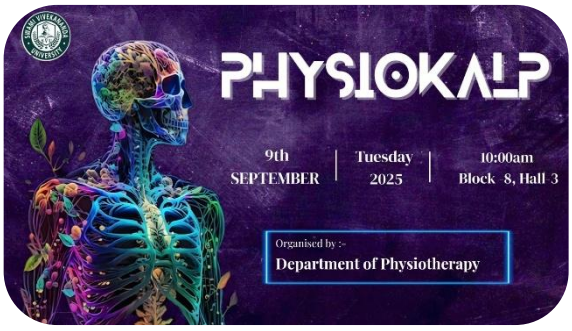
Faculty participation in games added a special charm to the event, fostering laughter, camaraderie, and a sense of togetherness beyond the classroom. The celebration concluded with a ***cake-cutting ceremony****, where students expressed their gratitude and respect towards their teachers, acknowledging their constant support and mentorship.*

The Teachers' Day celebration was not only an expression of appreciation but also a reminder of the nurturing academic environment of the Department of Physiotherapy. The joyful interactions and shared moments reflected a strong teacher–student relationship and reinforced the values of respect, collaboration, and lifelong learning. The event truly showcased a day where everyone—students and

faculty alike—came together to celebrate learning, creativity, and community.

Freshers' Party

Welcoming New Beginnings: Freshers' Party 2025 at the Department of Physiotherapy



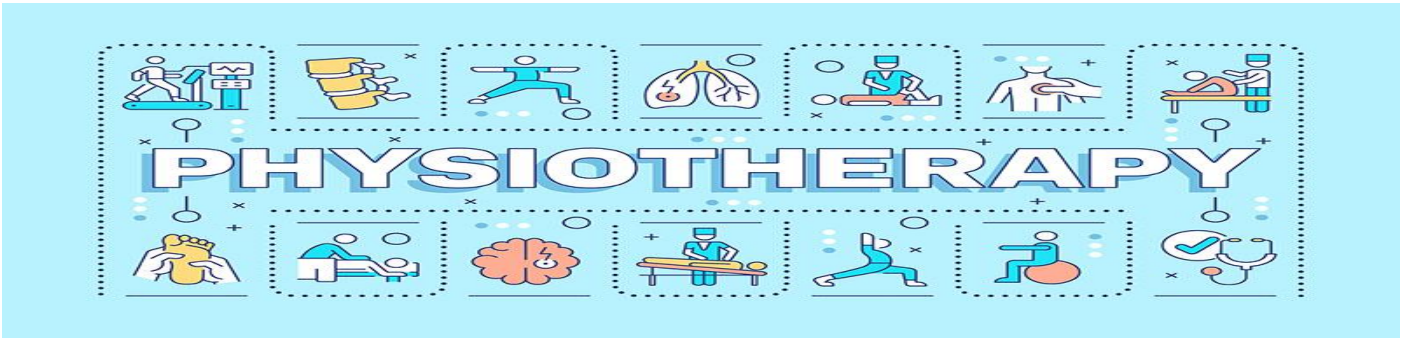
The ***Department of Physiotherapy, Swami Vivekananda University****, warmly welcomed its new batch of students by organizing a lively* ***Freshers' Party*** *on* ***9th September 2025****. The event was designed to create a joyful and inclusive atmosphere, helping freshers feel comfortable, confident, and connected with their seniors and faculty members.*

The celebration was filled with ***fun-packed cultural performances****, including energetic dance numbers, melodious songs, engaging games, and interactive sessions that encouraged enthusiastic participation from the newcomers. Senior students played an active role in organizing the event, ensuring that the freshers felt appreciated and motivated from the very beginning of their academic journey.*

One of the highlights of the Freshers' Party was the friendly interaction between juniors and seniors, which helped foster camaraderie, teamwork, and a strong sense of belonging within the department. The event was marked by laughter, creativity, and vibrant energy, making it an enjoyable experience for everyone present. In the party there was a competition named ***Mr. and Ms. Fresher****, organised by the seniors, where* ***Siddhartha Paul*** *won the* ***Mr. Fresher title*** *and* ***Diyashree Das*** *won the* ***Ms. Fresher title****. Another position, the* ***runners up Mr. and Ms. Fresher*** *was taken by* ***Ankur Kumar*** *and* ***Bonya Sarkar.***

Faculty members also graced the occasion, offering words of encouragement and support to the new students. Their presence added warmth and inspiration, reinforcing the department's nurturing academic environment.Overall, the Freshers' Party 2025 was a memorable celebration that successfully blended fun with fellowship. It set a positive tone for

the freshers' journey in the Department of Physiotherapy and reflected the department's spirit of unity, enthusiasm, and student-centered learning.



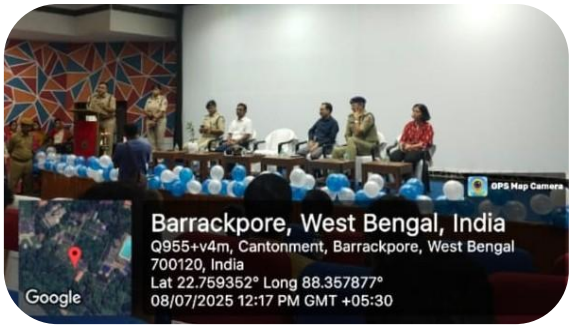
Promoting Road Safety Awareness: "Safe Drive, Safe Life" Program

An important ***road safety awareness program titled "SAFE DRIVE, SAFE LIFE"*** *was organized by the* ***Barrackpore Police Commissionerate*** *on* ***8th July 2025****, with the aim of spreading awareness about responsible driving and the prevention of road traffic accidents. The program highlighted the critical role of safe driving practices in protecting lives and promoting community well-being.*

The awareness session focused on key aspects of ***road safety****, including adherence to traffic rules, the importance of wearing helmets and seat belts, avoiding overspeeding, and the dangers of drunk and distracted driving. Through interactive discussions and informative talks, participants were educated on how simple precautionary measures can significantly reduce the risk of accidents and injuries.*

The program also emphasized the long-term physical, emotional, and social consequences of road traffic accidents, encouraging individuals to adopt safer driving behaviors. Real-life examples and practical guidance shared during the session made the message impactful and relatable.

The "Safe Drive, Safe Life" initiative successfully created awareness among participants and reinforced the importance of personal responsibility on the road. Such programs play a vital role in building a culture of safety and vigilance, especially among young adults and future healthcare professionals.



Overall, the awareness program served as a meaningful step toward promoting road safety and preventing avoidable injuries, aligning with broader public health goals of accident prevention and community safety.

Independence Day

Honouring the Past, Inspiring the Future: Independence Day Celebrations at SVU

Swami Vivekananda University commemorated the 79th Independence Day of India on 15th August 2025 with great patriotism, unity, and enthusiasm. The celebration was marked by the hoisting of the national flag, followed by the singing of the National Anthem, paying tribute to the sacrifices of our freedom fighters. The occasion reflected the spirit of freedom, responsibility, and national pride among students, faculty members, and staff.

All departments of the University actively participated in the celebration, contributing to its vibrant and inclusive atmosphere. Cultural performances, patriotic songs, speeches, and thought-provoking messages highlighted the values of democracy, discipline, and service to the nation.

The Department of Physiotherapy played an active role in the program, showcasing its commitment to holistic health, social responsibility, and nation-building. Faculty members and students participated enthusiastically, reinforcing the importance of physical well-being and rehabilitation in creating a healthy and strong society.

The Independence Day celebration served as a reminder of our collective duty to uphold the ideals of freedom, unity, and integrity, inspiring everyone to contribute positively towards the progress of the nation.

Where Ideas Took Shape, Innovate. Collaborate. Elevate: SVU Innovation 2025 at Smart India Hackathon

Swami Vivekananda University proudly hosted ***"SVU Innovation 2025"*** *on* ***22nd September 2025*** *as part of the prestigious* ***Smart India Hackathon 2025****, transforming the campus into a buzzing hub of creativity, problem-solving, and technological brilliance. The event brought together young innovators, mentors, and academicians under one roof to ideate, collaborate, and build solutions addressing real-world challenges.*

Students from all departments actively participated, demonstrating interdisciplinary thinking and teamwork—the true spirit of innovation. From healthcare and smart solutions to sustainability and digital transformation, the ideas presented reflected the power of youthful minds guided by purpose and passion.

The ***Department of Physiotherapy*** *made a notable contribution to SVU Innovation 2025 by highlighting the role of healthcare innovation in improving quality of life. Students explored concepts related to rehabilitation technologies, assistive devices, ergonomics, and community health solutions, emphasizing how physiotherapy can integrate with technology for better patient outcomes. Their participation reinforced the idea that innovation is not limited to coding alone but extends to clinical thinking and human-centered design.*

Fun Fact: *Did you know that many everyday technologies we use today—like voice assistants and fitness trackers—originated from hackathon-style brainstorming? SVU Innovation 2025 carried forward this legacy by turning ideas into impactful prototypes within a limited time frame!*

The event was enriched by expert guidance, interactive sessions, and enthusiastic peer learning, creating an environment where curiosity met confidence. Beyond competition, SVU Innovation 2025 celebrated collaboration, resilience, and the courage to think differently.

SVU Innovation 2025 successfully ignited the innovative spirit of students, inspiring them to become solution-driven professionals and future leaders. The event reaffirmed Swami Vivekananda University's commitment to nurturing creativity, encouraging research, and empowering students to contribute meaningfully to national initiatives like Smart India Hackathon.

Academic Excellence: Results with flying colors

Department of Physiotherapy

Bachelor of Physiotherapy

Soumyodip Rana
SGPA- 8.85
SEM 2
2024 Batch

Prithwiraj Dutta
SGPA – 9.08
SEM 4
2023 Batch

Tarique Anwer
SGPA- 8.11
SEM 6
2022 Batch

Anindya Singh
SGPA- 8.11
SEM 6
2022 Batch

Raageshree Ghatani
SGPA-7.73
SEM 8
2021 Batch

Siddharth Mukherjee
SGPA- 7.73
SEM 8
2021 Batch

Shalia Mallick
SGPA- 7.73
SEM 8
2021 Batch

Shazia Hussain
SGPA- 7.73
SEM 8
2021 Batch

Master Of Physiotherapy

Dipen Kabasi
SGPA-7.34
SEM 2
2024 Batch

Student Achievements & Academic Distinctions

Rockey Biswas
BPT 7th Semester
Batch 2022

***Rockey Biswas**, a student of the **Department of Physiotherapy, Swami Vivekananda University**, secured the **4th position** in the **National Physiotherapy Quiz – G-PhysioSynaptiQ-2025**, organized by **Galgotias University** on **15th October 2025.** The national-level competition saw enthusiastic participation from physiotherapy students across the country, testing knowledge and clinical reasoning skills. His commendable performance earned him a cash prize of **₹2,000**. This achievement reflects his academic dedication and brings recognition to the Department of Physiotherapy, reinforcing the university's emphasis on scholarly excellence and competitive learning.*

Prithwiraj Dutta
BPT 5th Semester
Batch 2023

***Prithwiraj Dutta**, a student of the **Department of Physiotherapy, Swami Vivekananda University**, secured the **First Runner-Up position** in a **quiz competition** organized by the **Indian Federation of Neurorehabilitation (IFNR)** on the occasion of **World Brain Day 2025.** The competition was held on **22nd July 2025** and witnessed participation from students across various institutions. His achievement reflects strong academic competence and a keen interest in neurorehabilitation. In recognition of his performance, he was awarded a cash prize of **₹7,000**. This accomplishment brings pride to the Department of Physiotherapy and highlights the university's commitment to academic excellence and student development.*

Acknowledgement

We extend our sincere gratitude to everyone who contributed to the successful publication of this newsletter themed ***"Promoting Healthy Ageing Through Physiotherapy: Preventing Falls & Frailty."*** *This edition reflects our collective commitment to advancing awareness, education, and innovation in the field of physiotherapy, particularly in addressing the challenges of ageing populations.*

We express our heartfelt thanks to the ***University authorities of Swami Vivekananda University*** *for their constant support, encouragement, and guidance, which made this initiative possible. We are deeply thankful to the* ***Department of Physiotherapy*** *for their academic leadership, valuable insights, and dedicated efforts in curating meaningful and evidence-based content for this publication.*

Our sincere appreciation goes to all faculty members, contributors, and students whose enthusiasm, creativity, and teamwork brought this newsletter to life. Their efforts in highlighting fall prevention strategies, frailty management, and the role of physiotherapy in promoting functional independence among older adults have added great value to this edition.

We also acknowledge the readers for their continued interest and support, motivating us to strive for excellence. This newsletter stands as a testament to collaborative learning, professional growth, and our shared vision of fostering healthy ageing through physiotherapy.

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Department of Physiotherapy
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Student Volunteers –

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BPT 5th Semester
(Batch 2023)

Ms. Uttamasha Saha
BPT 5th Semester
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