

Physiology

1. About Department

a) Introduction

The Department of Physiology was established in June 1989 as a constituent unit of Bharati Vidyapeeth Deemed University Medical College, Pune. It is committed to providing a comprehensive knowledge of how the human body works at different levels and prepares students to become successful physiology experts.

Academic Curriculum

Our department follows the CBME curriculum that focuses on self-directed learning. The curriculum has been structured in a way that provides early clinical exposure. We have developed in-house resources for amphibian and clinical experiments. These resources are available to students that help them with revisions.

Other Academic Programmes

Aside from the core medical courses, our physiology department offers courses like B.D.S., B.Sc. Skills, and B.Sc. Nursing and Bachelor of Physiotherapy(BPTh).

Infrastructure Facilities

- The Department of Physiology is located on the 2nd floor of the Bharati Vidyapeeth Medical College building. It is spread over an area of about 1000 square meters. It has well-equipped undergraduate practical laboratories (hematology, clinical, and mammalian), lecture-demonstration rooms for small group teaching, a library cum seminar room, a research lab, and well-furnished faculty rooms. ICT facilities are available in the classrooms and demonstration rooms.

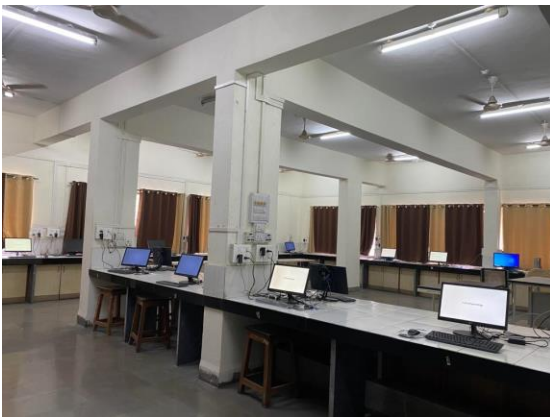
Departmental Library-



Hematology Lab-



Animal physiology laboratory with computerized simulation software for amphibian experiments-



Co-curricular Activities

The Department of Physiology ensures the holistic development of our students. Aside from conventional teaching, the department conducts co-curricular activities viz. seminars, quizzes, and guest lectures. Students are encouraged to participate in activities like preparing models and charts. They are also motivated to undertake small research projects and give presentations at various conferences.

Faculty

Our highly qualified faculty members are enthusiastic and dedicated to teaching and research. In addition to the mandatory requirement of an M.D. in Physiology and training in medical education technology, they have pursued various other courses. Our faculty members are also on editorial boards of various research journals and act as reviewers for various journals.

Recognition

The Physiology Department has an M.C.I. recognized postgraduate (M.D.) department where 15 students have completed post-graduation so far. 2 students have been offered PhD in Physiology.

Teaching-Learning Activities

The schedule of our teaching-learning activities is given below:

- Teaching: 495 hours
- Lecture: 160 hours
- Practical's: 310 hours
- Self-directed learning: 25 hours
- Early clinical exposure: 30 hours

b) Vision, Mission & Objectives

Vision

To provide comprehensive knowledge of the normal functioning of organ systems of the body to facilitate an understanding of the physiological basis of health and diseases and help students to develop knowledge of medicines.

Mission

- To conduct intercollegiate undergraduate quizzes
- To develop a state-of-the-art physiology laboratory
- To conduct extensive community-based research

- To develop a function test laboratory

Objectives

We have formulated specific learning objectives for the Cognitive, Psychomotor, and Affective domains to achieve competency.

Cognitive

- To explain the normal functioning of all the organ systems of the body and their interactions.
- To discuss the basic physiological regulating mechanisms of the human body in depth.
- To analyze coordination of regulating mechanisms to maintain the milieu interior.
- To underline the applied aspect in pathogenesis (pathophysiology) and discuss the physiological basis of treatment of some of the diseases.
- To describe the physiological response and adaptations to environmental stresses.
- To integrate the knowledge of organ structure, function, and its regulatory mechanisms.

Psychomotor

- To demonstrate competencies mentioned primarily for the study of physiological phenomena or assessment of function i.e. human and animal experiments, hematology experiments, and experiments based on biophysical principles.
- To maintain experimental/investigative data derived from the various tests done in the laboratory and compare the normal and the abnormal results.
- To demonstrate clinical examination skills.

Affective

- To demonstrate self-awareness and personal development in routine conduct. (Self-awareness)
- To develop effective communication with peers, students, and teachers in various teaching-learning activities. (Communication)
- To behave with due respect with the volunteers while conducting clinical practical's. (Ethics & Professionalism)
- To ensure not to let his/her personal beliefs, prejudices, and limitations come in the way of duty.
- To appreciate the issues of equity and social accountability while making students experience early clinical exposure. (Equity and social accountability)

Programme Outcomes

- Explain the normal functioning of all the organ systems of the body and their coordinated activity for total body functions.
- Describe the contribution of each organ system to the maintenance of the milieu interior.
- Elucidate the physiological aspects of normal growth and development.
- Describe the physiological response and adaptations to environmental stresses.
- List the physiological principles underlying pathogenesis and treatment of some of the diseases.

c) HOD's Message -

Welcome to the Department of Physiology. We started our journey in the year of 1989. We have a strong undergraduate program in Physiology. Sound knowledge of Physiology provides the strong basis of medical practice.

In the Department of Physiology, we aim to integrate the knowledge of organ structure, function, and its regulatory mechanisms. According to NMC guidelines new UG curriculum is fully implemented in the department which includes skill based clinically focused integrated curriculum.

Our department is well equipped with instruments needed for undergraduate and postgraduate curriculum. We have qualified and dedicated postgraduate faculty with vast experience who are trained in medical education technology.

Our department is actively involved in collaborative and interdisciplinary research. We have state of the art research facilities to support our academic programs and research. Faculty and students are encouraged to participate in national and international conferences. Our department has a distinguished record in teaching and research. Faculty members serve on the editorial boards of national and international journals.

We make sincere efforts to impart the core knowledge of Physiology. Students can approach any faculty member for application based learning of various systems in Physiology.

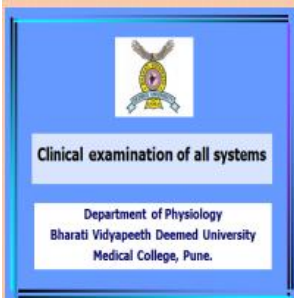
Thank you.

d) Highlights

Academic Activities

- The Department of Physiology follows the CBME curriculum.
- It focuses on self-directed learning.
- The inclusion of 'Clinical Problems' in theory and practical examination makes the students clinically oriented.
- The Physiology department follows a computer-assisted teaching-learning methodology using in-house-made educational CDs.
- It focuses on teaching CPR techniques and clinical skills using simulation.
- It conducts quizzes and small group discussions.
- The Department encourages the U.G. students to participate in national conferences, 'Model preparation competition' in, in house research conference.

Computer assisted teaching- learning using educational CDs made in-house.



• Faculty

- Dr. Gayatri Godbole has completed D.N.B. (Physiology – 2017), BLS & ACLS instructor renewal course (2020) and simulation-based advanced medical course (2021)
- Dr. Madhuvanti Karandikar & Dr. Pranita Ashok have completed their Ph.D. in Medical Physiology.
- BLS & ACLS course has been done by Dr Saira Bano and Dr. Salunke (2021)
- Dr. Asmita Phadke has completed an advanced diploma in medical education (ACME) conducted by Seth G.S. Medical College & KEM hospital (2015 – 16)
- Dr Mrs Anuradha R. Joshi has attended CISP workshop at GSMC, Mumbai as Curriculum Committee member of Medical College. (March 2019)
- Dr. Mrs. Anuradha R. Joshi is reviewer for Lung India & Journal of transport & health.

- Dr. Asmita Phadke is a reviewer for the National Journal of Integrated Research in Medicine & International Journal of Case reports and Images.

Lab Facilities

- Our labs are equipped with sophisticated apparatus like a physiograph for studying various physiological parameters that help improve students' understanding of various physiological phenomena.
- Our Power lab has the facility to conduct autonomic function tests.
- Instead of performing actual amphibian experiments, our students use modern software to perform the same.
- The simulation lab is used for CPR, recording of various physiological parameters such as Blood pressure, pulse, venous pressure etc.

e) Achievements

We are proud of the achievements of our dedicated faculty members and students for their outstanding contribution to research, education, and healthcare.

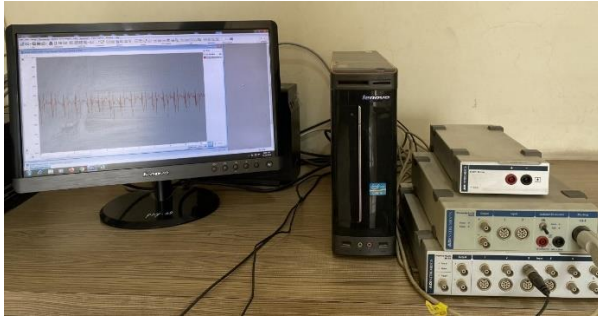
- Dr. Pranita Ashok was awarded the real superwoman award in 2020 by FSIA (Forever Star India Awards), felicitated by The Times Group at the 'Icons of Health Pune 2021' programme, awarded the title of 'Strong Health Pillar of UMZ' (2020–2021).
- Miss Riya Gulve, an undergraduate student, was selected as the ambassador for the 'International Conference for healthcare & Medical Students' by the Royal College of Surgeons, Ireland (2021–2022).

2. Labs

The Department of Physiology has well-equipped laboratories that meet the national and international research standards. The laboratories include the Hematology lab, the Animal Physiology lab, the Clinical lab, and the research labs. These labs have modern equipment like a physiograph to facilitate experiments and research. Furthermore, our department houses a power lab that conducts autonomic function tests.

Aside from the modern equipment, our labs are also equipped with the latest software to conduct amphibian experiments in an unconventional way.

Power lab-(AD instruments)-



Student Physiographs-



CPR in skills lab-



3. Research

a) Overview

We are committed to making groundbreaking discoveries to improve the lives and communities of our nation and beyond. Our students work in exciting areas of research in the field of Physiology and use innovative research and experimental techniques to drive excellence in research. Faculty and students present posters and do oral presentations in research conferences.

b) Projects and Patents

Our department has participated in several interesting and innovative collaborative projects and has also filed patents for some of the groundbreaking works.

- Collaborative project with College of Ayurved titled 'comparative efficacy of formulations in respiratory symptoms of flour mill workers.'

Principal investigator – Dr. Sarita Kapgate, Associate Professor, Dept of toxicology, College of Ayurved, Bharati Vidyapeeth DTU College of Ayurved, Pune.

Co-investigator – Dr. A.R. Joshi, Professor & Head, Department of Physiology, Bharati Vidyapeeth DTU Medical College, Pune.

- Collaborative project with Interactive Research School for Health Affairs titled 'effect of Yoga intervention on skeletal muscle linked glucose homeostasis.'

Principal investigator – Dr. Supriya Bhalerao

Co-investigator – Dr. Pranita Ashok, Associate Professor, Department of Physiology, Bharati Vidyapeeth DTU Medical College, Pune.

c) Publications

The brilliant research works of our Physiology department's faculty members have got published in several peer-reviewed national and international journals. Between 2017 and 2021, our department has 31 publications.

Research Publications by the Faculty of the Department of Physiology (2019-2021)

Sr. No.	Name of the Article	Author	Name of the Journal	Indexing Agency	Year and Volume
1.	Gender inequality in hands-only cardiopulmonary resuscitation videos on You Tube	Reeya Gulve, Anuradha R Joshi	International Journal Of Research In Medical Sciences	Index Copernicus Index Medicus for South-East Asia Region	2021 ;9(7):2049- 2054
2.	Immediate effect of playing smart phone action videogames on audiovisual reaction time.	Dr. Anuradha R. Joshi, Richa Tiwari	Indian Journal of Public health Research & Development	SCOPUS	2020: Vol 11 (7), 73-77
3.	Effect of nationwide lockdown due to COVID-19 pandemic on daily activities and study pattern of 1st MBBS students.	Dr. Anuradha Joshi, Amanpreet Wasir, S.Chelluri	National Journal of Physiology, Pharmacy and Pharmacology	Embase, Index Copernicus	2020: Vol10 Issue 10:
4.	Assessment of medical student's perception of educational environment.	Dr. Asmita Phadke Dr.Jayshree Kharche	International Journal of Physiology	Index Copernicus	2020: Vol. 8 No. 1
5.	Assessment of hypertension risk score in Pune urban population.	Dr. S. Gavali Dr. D.Tambe	International Journal of Physiology	Index Copernicus	2020 Vol. 8 No. 1
6.	Correlation between serum uric acid level with obesity indices and blood pressure in young males.	Dr. Saira Bano Dr. Anuradha Joshi	National Journal of Physiology, Pharmacy and Pharmacology	Embase, Index Copernicus	2019 Vol 9 (11), 1103- 1106
7.	Awareness of air pollution and related health risk in traffic	R. Pawar J. Kharche ,.	International Journal of Physiology	Index Copernicus	2019: Vol. 7 No. 4

	police of Pune City-A pilot study.	Gayatri Godbole, Dr. Anuradha Joshi			
8.	Assessment of plasma Vit B12 and Folic acid during postmenopausal period.	Dr. D.Tambe Dr. S. Gavali	International Journal of Physiology	Index Copernicus	2019: Vol. 7 No. 4
9.	Partial restoration of the haematological profile in 4-week-old pups after six generations of improved nutrient supply.	Dr. Mrs. Madhuvanti Karandikar, Dr. Anuradha Joshi	Med Pulse International Journal of Physiology	Index Copernicus	2019: Vol.11 Issue 2
10.	The haematological profile with fifty generations of undernutrition cannot be reversed with six generations of a recuperation diet in a wistar rat colony.	Dr. M.M. Karandikar Dr. Anuradha Joshi	Med Pulse International Journal of Physiology	Index Copernicus	2019 Vol.11 Issue 2
11.	Assessment of blood pressure and cognitive dysfunction in Pune urban elderly population.	Dr. Gayatri Godbole Dr. A Pranita	International Journal of Physiology	Index Copernicus	2019:Vol.7(4) : 72-74.
12.	Correlation of body mass index & physical activity with bone mineral density in postmenopausal women.	Dr AV Phadke, Jayshree Kharche	International Journal of Basic and Applied Physiology	Index Copernicus	2019:Vol 8(1) :78-81.
13.	Association of hypothyroidism and type 2 diabetes in patients attending tertiary care hospital of Pune city.	Dr. Gayatri Godbole Dr. A Pranita	National Journal of Physiology, Pharmacy and Pharmacology	Embase, Index Copernicus	2019:Vol9 Issue 4:328-330
14.	Gender-specific association of hsCRP and Blood Glucose Levels in Diabetic individuals.	Leya Elizabeth Babu,	International Journal of Physiology	Index Copernicus	2018, Volume: 6,

		Dr Anuradha Joshi			Issue: 3: (P) 72-75.
15.	Study of relation between family history of diabetes mellitus and awareness of diabetes mellitus in Pune urban population	Shishir Joshi, Pranita Ashok, J.S. Kharche, G.R. Godbole.	National Journal of Physiology, Pharmacy and Pharmacology,	Embase, Index Copernicus	2018, Vol.8, Issue 10, P-1-4,
16	Effect of moderate aerobic exercise on perceived stress during the luteal phase of the menstrual cycle in students pursuing professional course	Anuradha R. Joshi, Tanvi Pendse, S.M Vaidya	National Journal of Physiology, Pharmacy and Pharmacology,	Embase, Index Copernicus	2018, Vol.8, Issue 5, P-705-708,
17	Stratification of patients with emergency severity index and effects of its implementation on the outcome in emergency Dept. of tertiary care hospital	Dr. E C Sada, Dr. Shivkumar Iyer, Dr. Mrs Gayatri Rangnath Godbole	International Journal Of Scientific Research.	Index Copernicus	2018, Vol. 7, Issue 3, P-297-298,
18	Correlation of high-sensitivity C-reactive protein with blood sugar level in patients with Type 2 diabetes	Leya Elizabeth Babu, Anuradha Joshi	National Journal of Physiology, Pharmacy and Pharmacology,	Embase, Index Copernicus	2018, Vol.9 Issue-1-37-41
19	Study of Ventilatory lung function tests of bus drivers in Pune city	Anuradha Rajiv Joshi, S.M. Vaidya, Neha Pimpale	International Journal Of Basic And Applied Physiology,	Index Copernicus	2017, Vol.6, Issue 1, P-97-102,
20	Effect of short term yoga on cardiorespiratory fitness in middle-aged females	Dr. Anuradha Rajiv Joshi	Indian Journal of public health Research & Development Jan. – March	Scopus	2017, Vol. 8, Issue -1, Page: 1-5
21	Evaluation of perceived stress in bus drivers of Pune city	Dr. Anuradha Rajiv Joshi, Dr. Savita Madhukar Vaidya	National Journal of Physiology, Pharmacy and Pharmacology,	Scopus,Embase, Index Copernicus	2017, Vol. 7, Issue-1:90-93

22	Influence of education on cognitive function in the elderly population of Pune city, Maharashtra, India	S Godbole, Gayatri Godbole, Savita Vaidya	International Journal of Research in Medical Sciences.	Index Copernicus	Sep. 2016 Vol. 4, Issue 9, P- 4119-4122,
23	Haematological profile in chronically undernourished thrifty rats in 28 days of age.	Mrs. M.M. Karandikar, Dr. S.M. Vaidya, Dr. K.G. Apte	International Journal of Scientific Research,	Index Copernicus	2016, Vol.5, issue 8, , p- 42-44.
24	Effect of Multigenerational Under-nutrition on the haematological Profile of Adult Wistar Rats.	Mrs. M.M. Karandikar, Dr. S.M. Vaidya, Dr. K.G. Apte	Global Journal For Research Analysis,	Index Copernicus	2016,Vol. 5, Issue 7, , p- 261-263

4. Faculty

[https://mcpune.bharativedyapeeth.edu/media/pdfs/faculty_2022-](https://mcpune.bharativedyapeeth.edu/media/pdfs/faculty_2022-1/1_UG_and_Broad_Speciality/02_Physiology_050122.pdf)

[1/1_UG_and_Broad_Speciality/02_Physiology_050122.pdf](https://mcpune.bharativedyapeeth.edu/media/pdfs/faculty_2022-1/1_UG_and_Broad_Speciality/02_Physiology_050122.pdf) - Sterco Team will take the data from the given PDF

5. Testimonials

6. Happenings

a) News & Events

b) Activities / Workshops / Webinars

1. Faculty members of department of Physiology fulfil their social responsibilities by organizing health camps for PMT bus drivers.



2. We arrange guest lectures by eminent practitioners

1. Dr Shashank Shah- Date- 2nd April 2019

Topic- Pathophysiology of Obesity and principles of management



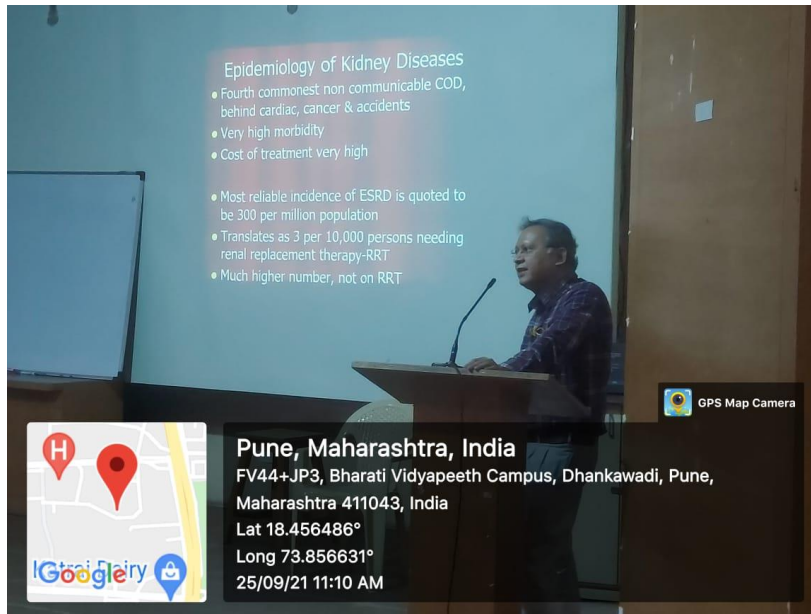
2. Dr Sameer Melinkeri-7 October 2019

Topic- Haemostasis and its clinical implications



T

3. Dr Tushar Dighe-25/09/2021- Kidney diseases

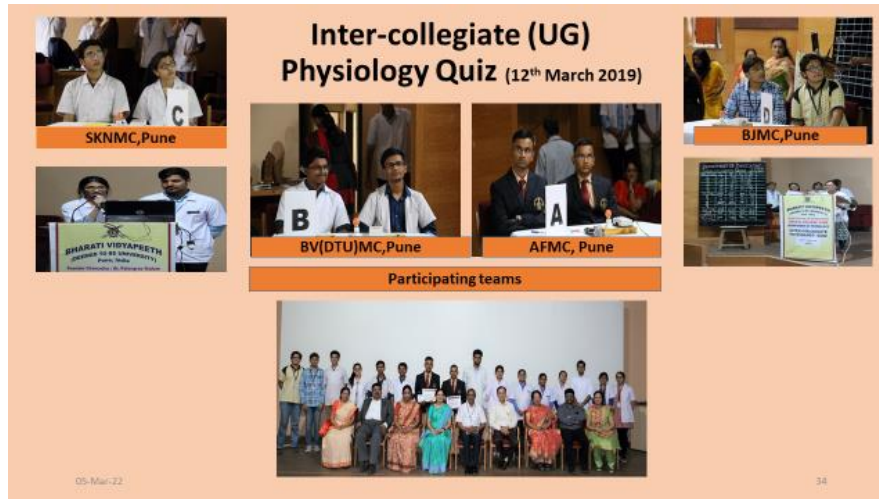


3. State level Intercollegiate Physiology quiz was arranged on 12 March 2019-

Total 8 teams from all over Maharashtra participated in quiz competition

Winning team- Bharati Vidyapeeth (DTU) Medical college





Department address

Department of Physiology
 (2th Floor) Bharati Vidyapeeth (Deemed to be) University,
 Medical College & Bharati Hospital, Pune.
 Dept. ID – physiology.mcpune@bharatividyaapeeth.edu
 Contact no – 020-24373226 Extension - 236