

Evaluative Report of the Department

(Department of Physiology, Institute of Medical Sciences, Banaras Hindu University)

1. Name of the Department : **Department of Physiology, Institute of Medical Sciences, Banaras Hindu University, VARANASI-221005**
2. Year of establishment: **1960**
3. Is the Department part of a School/Faculty of the university? **Yes, Faculty of Medicine, IMS.**
4. Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.) **MBBS, BDS, BSc Nursing (UG courses), MD Physiology, MD/MS Ayurveda (PG courses) and PhD Physiology.**
5. Interdisciplinary courses and departments involved: **Interdisciplinary courses run with Faculty of Dental Sciences, Faculty of Ayurveda and College of nursing for UG (BDS and BSc Nursing) & PG (MD Ay) courses. Department of Pediatrics, Pediatric Surgery, Surgery, Pathology and other Departments of the University are involved in on going MD and PhD works.**
6. Courses in collaboration with other universities, industries, foreign institutions, etc. **NIL.**
7. Details of programmes / courses discontinued, if any, with reasons: **NIL**
8. Annual/ Semester/Choice Based Credit System: **As per the rules, regulations and norms of Medical Council of India and Banaras Hindu University.**
9. Participation of the department in the courses offered by other departments: **Teachers participate in other departmental course as and when required.**
10. Number of teaching posts sanctioned and filled (Professors/Associate Professors/Asst. Professors)

	Sanctioned	Filled
Professor	2	1
Associate Professors	5	3
Asst. Professors	6	2+1 on lien

11. Faculty profile with name, qualification, designation and specialisation (D.Sc./D.Litt./ Ph.D./M.Phil., etc.)

Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. /MD students guided for the last 4 years
Udai Prakash	M.D.	Professor	Physiology	37	2 MD
S B Deshpande	M.D., Ph.D	Professor	Physiology	36	4 PhD 3 MD
M B Mandal	M.D., Ph.D	Professor	Physiology	28	3 MD
Ratna Pandey	M.D.	Assoc. Professor	Physiology	13	01 MD
A K Tiwari	M.D.	Asstt. Professor	Physiology	15	01 MD
Shailesh Gupta	M.D.	Asstt. Professor	Physiology	10	--

12. List of senior Visiting Fellows, faculty, adjunct faculty, emeritus professors- **NIL**

13. Percentage of classes taken by temporary faculty - programme-wise information **NIL**

14. Programme-wise Student Teacher Ratio

	MBBS	BDS	B.Sc (Nursing)	MD (Ay)	MD (Physiology)/ PhD
Teacher Students ratio	1: 15	1:7	1:8	1:6	1:1

15. Number of academic support staff (technical) and administrative staff: sanctioned and filled

Support staff	Sanctioned	Filled	Vacant
Technical	16	08, one retiring	08
Administrative staff	2	2, one retiring	0

16. Research thrust areas recognized by funding agencies: **Neuroscience and cardio-respiratory physiology.**

17. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Give the names of the funding agencies and grants received project-wise. **One faculty, projects from ICMR (National) 28 Lacs and UGC project for fellowship.**

18. Inter-institutional collaborative projects and grants received **NIL**
 - a) All India collaboration b) International
19. Departmental projects funded by DST-FIST; UGC-SAP/CAS, DPE; DBT, ICSSR, etc.; total grants received. **NIL**
20. Research facility / centre with
 - state recognition
 - national recognition
 - international recognition : **Research facility in Neuroscience and cardio-respiratory physiology is recognized both nationally and internationally.**
21. Special research laboratories sponsored by / created by industry or corporate bodies : **NIL**
22. Publications: **(Last five years) please SEE THE ENCLOSED LIST**
 - * Number of papers published in peer reviewed journals (national/ international)= **47**
 - * Monographs **04**
 - * Chapters in Books **03**
 - * Edited Books --
 - * Books with ISBN with details of publishers --
 - * Number listed in International Database (For e.g. Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.) **47**
 - * Citation Index - range / average **Total: 625, Average 7.88.**
 - * SNIP --
 - * SJR --
 - * Impact Factor - range / average : **Total 220; Range 0 -14, Average 2.82**
 - * h-index **h- index 14**
23. Details of patents and income generated **NIL**
24. Areas of consultancy and income generated **NIL**
25. Faculty selected nationally/ internationally to visit other laboratories in India and abroad:
Three faculty members selected to visit for national & International lab.
26. Faculty serving in
 - a) National committees b) International committees c) Editorial Boards d) any other (please specify) **Three faculty members serving in various committees.**

27. Faculty recharging strategies -
28. Student projects
- percentage of students who have done in-house projects including inter-departmental projects - **Not applicable**
 - percentage of students doing projects in collaboration with other universities / industry / institute - **Not applicable**
29. Awards / recognitions received at the national and international level (**during last four years**) by
- Faculty - **Four faculty members received national awards**
 - Doctoral / post doctoral fellows - **Four doctoral students received national awards.**
 - Students - **Two students received national awards.**
30. Seminars/ Conferences/Workshops organized and the source of funding (national / international) with details of outstanding participants, if any. **One CME on "Epilepsy" sponsored by MCI was organized by the Department during last five years.**
31. Code of ethics for research followed by the departments : **As per the guidelines of the ethical committee of the Institute.**
32. Student profile course-wise:

Name of the Course (refer to question no. 4)	Applications received	Selected		Pass percentage	
		Male	Female	Male	Female
Details for different courses are available at the office of Dean/Director, Institute of Medical Sciences, B.H.U.					

33. Diversity of students

Name of the Course (refer to question no. 4)	% of students from the same university	% of students from other universities within the State	% of students from universities outside the State	% of students from other countries
Details for different courses are available at the office of Dean/Director, Institute of Medical Sciences, B.H.U.				

34. How many students have cleared Civil Services and Defence Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise. **Not applicable**

35. Student progression: **Not applicable, Admitted through National selection process.**

Student progression	Percentage against enrolled
UG to PG	
PG to M.Phil.	
PG to Ph.D.	
Ph.D. to Post-Doctoral	
Employed	
<ul style="list-style-type: none"> • Campus selection • Other than campus recruitment 	
Entrepreneurs	

36. Diversity of staff

Percentage of faculty who are graduates	
of the same university	0%
from other universities within the State	43%
from universities from other States	57%
from universities outside the country	0%

37. Number of faculty who were awarded Ph.D., D.Sc. and D.Litt. during the assessment period
- **One**

38. Present details of infrastructural facilities with regard to

a) Library - Present

b) Internet facilities for staff and students - Available to all and connected to central library.

c) Total number of class rooms : **3**

d) Class rooms with ICT facility: **Nil, not required.**

e) Students' laboratories : **Three**

f) Research laboratories : **Five**

39. List of doctoral, post-doctoral students and Research Associates

a) from the host university 1. Aprana Akella 2. Shuchita Singh 3. Dr. Amit Kuril (Doctoral Students)

b) from other universities 1. Abhay Pandey 2. Dr. Shilpa Tiwari 3. Dr. Parul Sharma 4. Dr. Priyanka Bhagat. 5. Dr. Hemlata Gupta 6. Dr. Reet Sharma. 7. Dr. Kumari Nirja 8. Dr. P B Singh. (Doctoral

Students).

40. Number of post graduate students getting financial assistance from the university. **08 from the university, 01 from ICMR and 01 from UGC.**
41. Was any need assessment exercise undertaken before the development of new programme (s)? If so, highlight the methodology. **No**
42. Does the department obtain feedback from
 - a. faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback? **Yes, Regular meetings of the faculties (Departmental council) are held and feed back is taken from them and implemented as per requirement.**
 - b. students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback? **Not available**
 - c. alumni and employers on the programmes offered and how does the department utilize the feedback? **Not available**
43. List the distinguished alumni of the department (maximum 10) **List enclosed**
44. Give details of student enrichment programmes (special lectures / workshops / seminar) involving external experts. **Not applicable.**
45. List the teaching methods adopted by the faculty for different programmes. **Didactic lectures with multimedia, hands on practicals, small group teaching, tutorials, and seminars.**
46. How does the department ensure that programme objectives are constantly met and learning outcomes are monitored? **By periodic evaluation through theory, practical and oral examinations.**
47. Highlight the participation of students and faculty in extension activities. **Students participate in various extension activities of the Institute.**
48. Give details of "beyond syllabus scholarly activities" of the department. **Faculty members participates beyond syllabus scholarly activities like as resource person for ICT based national learning projects (NMEICT) and "e-Pathshala of UGC".**
49. State whether the programme/ department is accredited/ graded by other agencies? If yes, give details. **Yes, periodically assessed by Medical Council of India (MCI).**

50. Briefly highlight the contributions of the department in generating new knowledge, basic or applied.

In addition to teaching, this Department has contributed substantially to Research on various areas in physiology. In the early years, focus was on research in Nutritional Physiology and on the neurochemical parameters for understanding thermoregulation and heat stress. Currently, the work in Clinical Neurophysiology has provided newer indicators for the fetal distress and neonatal maturity using non-invasive electrophysiological techniques. In addition, the department has provided a major breakthrough in understanding of synaptic transmission using electrophysiological recording techniques. The results indicate the involvement of NMDA/non-NMDA receptors modulating inhibitory pathways using GABA and glycine as transmitters. Further, *in vitro* anoxia resulting even from the deficiency of glucose produced toxic effects as severe as the ischemic situation. The work on Indian Red scorpion venom have demonstrated that venom increases endogenous kinins which in turn increase the excitability of neurons/reflexes producing fatal hemodynamic alterations. We also provided the evidence for the involvement of pulmonary edema in the sensitization of J-reflexes. We have isolated a novel toxin that produced pulmonary edema in experimental animals. All these contributions have placed the department as a unique Neurophysiology Research centre in National and International scene. Currently the pathophysiology of ARDS is being investigated and the department is pioneer in the *in vitro* recording of neonatal gut muscle activities from different types of congenital malformations. The department also reported the neurotoxic, cardiotoxic and nephrotoxic actions of chemicals liberated from plastic.

51. Future plans of the department.

- Development of ICT based UG/PG teaching modules
- Establishment of Virtual experimental physiology Lab
- Setting up of Advanced Center for Neurophysiology Research
- Setting up of Sleep and autonomic function lab

52. Detail any five Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

Strengths- Faculty of the Department is dedicated, well trained contributed nationally/ Internationally in the field of physiology.

Weaknesses- Vacant faculty positions, shortage of funds.

Opportunities- All opportunities are utilized for better service.

Challenges of the department- To overcome the weaknesses and to achieve the future goals.

Post-accreditation Initiatives

If the university has already undergone the accreditation process by NAAC, please highlight the significant quality sustenance and enhancement measures undertaken during the last four years. The narrative may not exceed ten pages.