

**THE TAMILNADU DR. M.G.R. MEDICAL UNIVERSITY
CHENNAI 600 032**



**M.D.S. BRANCH - VIII
PEDODONTICS AND PREVENTIVE DENTISTRY**

CURRICULUM FOR P.G. STUDIES IN DENTISTRY
LEADING TO M.D.S. DEGREE (3 YEARS) IN

M.D.S. BRANCH – VIII- PEDODONTICS AND PREVENTIVE DENTISTRY

<i>Nomenclature of the Degree</i> :	M.D.S. in Pedodontics and Preventive Dentistry.
<i>Affiliation</i> :	The Tamil Nadu Dr. M.G.R. Medical University.
<i>Duration</i> :	Three Academic Years.
<i>Qualification at Admission</i> :	As specified by the University.

1. Goals:

The goals of the Post-Graduate Dental Education shall be to produce competent Paedodontists and / or Paediatric Dental Teachers.

2. Objectives of the course:

- 2.1) To train the Post-Graduate about the psychological development, behavioral problems and the various techniques of management of children so that he / she will be able to manage all children in the dental office.
- 2.2) To train the Post-Graduate to instill a positive attitude towards dental health in children.
- 2.3) To train the Post-Graduate in all the various preventive measures in order to implement in the dental office as well as to the community.
- 2.4) To train the Post-Graduate student in prenatal counseling about proper oral hygiene for mother and postnatal care of the child.
- 2.5) To recognize various dental and oral diseases in children and to treat them effectively with the most recent methodology.
- 2.6) To treat the dental problems in the disabled child.

3. Course Contents:

- 3.1) **Syllabus:** Part I – Common to all specialties (hence not specified).
Part II – (**Appendix – I**).
- 3.2) **Preclinical Exercises:** To be completed by six months (**Appendix – II**). Records of the Pre-clinical exercises to be approved by the guide and duly signed by the H.O.D. The Preclinical exercises should be displayed during, the Final M.D.S. Examination.
- 3.3) **Clinical Requirements (Appendix – II) :**
The list is the minimum required quota to be completed before the Candidate appears for the Final M.D.S. Examination. Clinical records should be maintained and approved by the guide and duly certified by the H.O.D.

3.4) ***Clinical Postings in Other Specialties :***

Candidates will be posted on rotation to the various departments.

- 1) Paediatric surgery and Pediatric Medicine.
- 2) Community Dentistry.
- 3) Orthodontics.
- 4) Oral surgery and Anesthesiology.
- 5) Prosthodontics.
- 6) Psychology.
- 7) Periodontia.

3.5) ***Special Assignments:***

- 1) **School Health Program:** During the course candidate should submit a project report of their work.
- 2) **Library dissertation:** The topic for Library dissertation should be finalized and approved by the end of first six months and the same should be submitted by the middle of 2nd year, approved by the guide and certified by the H.O.D.
- 3) **Dissertation:** Subject and protocol for the dissertation to be submitted before appearing for Part - I examination and he / she should complete the work and submit the dissertation 6 months before Part – II Examination. The work should be original and to be registered in the University. Along with the submission of the dissertation, a scientific paper of the dissertation should be prepared and submitted which is approved by the guide and co-guide.
- 4) *Inter disciplinary approach to Oro facial deformities* comprising of Paediatrics, Plastic Surgery, Oral Surgery, Orthodontics, Prosthodontics, Speech therapy, Psychology and Anesthesiology,

3.5) ***Teaching Assignments :***

- 1) Lectures and Seminars on Basic Sciences.
- 2) Seminars and Journal Club on specialty subject.
- 3) Case presentations and discussion.
- 4) Lecture classes and Clinical discussions for Under-graduate students.
- 5) Attending Workshops / Continuing dental education programs.
- 6) At least one scientific paper and a case report should be presented in a national / state conference.
- 7) At least one scientific paper and a case report should be published in an indexed journal.

APPENDIX – I

SYLLABUS FOR M.D.S. PEDODONTICS AND PREVENTIVE DENTISTRY

PART – I: (Basic Sciences)

Compulsory Subjects:

- 1) Applied Anatomy.
- 2) Applied Physiology and Biochemistry.
- 3) Applied Pathology and Microbiology.
- 4) Applied Pharmacology (Especially related to pregnancy, lactation and children below 14 years).
- 5) Applied Dental Materials.

Optional Subjects:

- 6) Research Methodology and Biostatistics.
- 7) Nutrition and Dietetics.
- 8) Teaching and testing methodology.
- 9) Computer Application and Photography.

PART – II :

- 1) Child development: Principles and theories of growth and development, effects of prenatal and postnatal factors. Details of pedologic anatomy, growth and development of skull, facial skeleton, dentition and occlusion, psychological development of the child including personality, intelligence and emerging principles of development of social behavior and communication skill.
- 2) Principles and Practice of Behavior management including counseling and pain control.
- 3) Pediatric Dental Practice management and utilization of Dental Auxiliaries.
- 4) Pediatric Conservative / Restorative Dentistry and Endodontics.
- 5) Principles of Oral microbiology, Immunology and Human genetics as applied to Pedodontics.
- 6) Recent advances and application of Dental Materials and technology.
- 7) Dental radiology including recent trends in imaging.

- 8) Fractures of teeth and facial skeleton in children including emergencies and Oral Surgical principles.
- 9) Pediatric Oral Medicine and Clinical Pathology.
- 10) Principles of oral hygiene, dental plaque, gingival and periodontal diseases in children.
- 11) Principles and practice of diagnosis and treatment of incipient malocclusion, preventive and interceptive orthodontics.
- 12) Elements of nutrition and dental health in children.
- 13) Management of children with cleft lip / palate, handicapped and medically compromised children.
- 14) Principles of Epidemiology of dental diseases including Indian and Global prevalence.
- 15) Principles of cariology / cariology update.
- 16) Ephibodontics of Adolescent dentistry.
- 17) Dental health: Principles and practice, primary health care, Dental health education and promotion, Dental health delivery systems and community health programs.
- 18) Preventive dentistry: Principles of children's preventive and community dentistry.
- 19) Fluorides and trace elements in dentistry.
- 20) Biostatistics and research methodology.

APPENDIX - II

I) PRE-CLINICAL EXERCISES :

All the following exercise should be completed by...

- 1) Drawing album and records.
 - a) Table showing chronology of eruption of teeth.
 - b) Table showing tooth dimensions.
 - c) Pulp morphology.
 - d) Development of dentition at different ages.
 - e) Development of occlusion at different ages.
 - f) Diagram showing cephalometric points, planes and angles.
 - g) Table showing differences between primary, young permanent and permanent teeth.
 - h) Table showing modification of cavity preparation for primary teeth.
 - i) Mixed dentition analysis, principles and measurements.
 - j) Principles of soldering and welding.
 - k) Principles and methods of rubber dam.
- 2) Carve all deciduous teeth in wax (Ten only) $\frac{abcde}{abcde}$
- 3) Complete set up of dentition at age of 8 years.
$$\frac{6edc21}{6edc21} \mid \frac{12cde6}{12cde6}$$
- 4) Complete set up of dentition at the age 10 years.
$$\frac{6e4c21}{6e4321} \mid \frac{12c4e6}{1234e6}$$
- 5) Preparation of special Trays with Upper and Lower Impressions of 3 years old child.
- 6) Models – models of children with normal occlusion at age 3,7,11 and 14 years.
- 7) Cephalograms – Cephalograms learning and analysis of children with normal occlusion and morphology at 3,7,11 and 14 years.
- 8) Mixed dentition analysis – 1 case.
- 9) Basic Orthodontic Exercises:
 - A) Straightening of wire (6"-19 gauge).

- B) Square, triangle and circle formation (2").
- C) Clasps- different types (3/4 clasp, Full clasp, Adam's clasp, Arrowhead clasp, Modified arrowhead clasp, Ball clasp).
- D) Labial bow – different types (short, long, high with apron spring).
- E) Multiple loop exercises – different types of springs (Finger spring, single cantilever, double cantilever springs, canine retractors viz., U-loop, Helical, Palatal canine retractors and Robert's retractor).
- F) Soldering exercises – lamppost formation.

10) Appliances :

- A) Space maintainers -
 - 1) Removable type.
 - 2) Fixed type.
 - A) Band with loop (long & short loop).
 - B) Transpalatal and nance palatal holding arches.
 - C) Lingual arch with canine stoppers.
 - D) Space maintainer for guiding eruption of first permanent molar.
- B) Space regainers for distalizing first permanent molar -
 - 1) Removable Type.
 - 2) Fixed Type.
- C) Habit breaking appliance -
 - 1) Removable Type.
 - 2) Fixed Type.
- D) Expansion plates with Coffin spring and Expansion screw.
- E) Hawley's retention appliance.
- F) Hawley's appliance with anterior bit plane.
- G) Posterior bite plane with single and double canti-lever springs.
- H) Upper inclined plane and lower inclined plane.
- I) Upper appliance with finger springs to correct median diastema.

- J) Upper canine retraction appliance with helical and U-loop springs.
 - K) Activator.
- 11) Conservative and Endodontic Exercises (on typodont / extracted teeth).
- A) Class – II Cavity in 64,65 and 84,85.
 - B) Stainless Steel Crown on 74 and 85.
 - C) Pulpotomy in 75.
 - D) Pulpectomy in extracted teeth 51,61,54 or 64,55 or 65,75 or 85.
 - E) Class – II MOD in 46.
 - F) Class – I mesial and distal pit with palatal extension in 26.
 - G) Class – I with buccal extension on 36 or 46.
 - H) Jacket Crown on 12 or 22 and 31 or 41.
 - I) Crown with acrylic facing on 11 or 21.
 - J) Class – II Inlay in 37 or 47.
 - K) Pin Restoration in 36 or 46.
 - L) RCT in Extracted teeth 16,22,23,36 or 46.
 - M) Post and Core crown on 11 or 21.
- 12) Proforma of behavioural rating, scales and tests for children.
- 13) Computation of –
- A) Caries index and performing, various caries activities tests.
 - B) Oral hygiene index.
 - C) Periodontal index.
- 14) Oral Radiology –
- A) Taking of periapical, occlusal bitewing radiographs in children.
 - B) Developing and processing of films.
 - C) Tracing of soft tissue dental and skeletal landmarks as observed on cephalometric radiographs.
 - D) Drawing of various planes and angles.
- 15) Fixed Appliance Technique –
 Training shall be imported in one basic technique i.e., Begg Technique or its derivative / Edge wise / Straight wire etc., with adequate exposure to other techniques.
- i) Band pinching.
 - ii) Bracket positioning and placement.
 - iii) Different stages in treatment appropriate to technique taught.

II. CLINICAL REQUIREMENTS:

The following is the minimum required quota to be completed before the candidate can be considered eligible to appear in the final M.D.S. Examinations:-

1)	Fillings:	
	(a) Class – II	150
	(b) Other restorative procedures	200
2)	Crowns:	
	(a) Acrylic full coverage crowns	10
	(b) Stainless Steel Crowns	50
	(c) Cast crowns	5
3)	Endodontic Procedures in deciduous teeth:	
	(a) Pulpectomy	50
	(b) Pulpotomy	50
4)	Endodontic Procedures in permanent teeth:	
	(a) Molars	15
	(b) Incisors	20
5)	Apicectomy	5
6)	Full mouth rehabilitation cases under GA	15
7)	Space Maintainers (including 15 fixed)	25
8)	Other preventive appliances:	
	(a) Oral Screen	} 15
	(b) Thumb sucking habit	
	(c) Bite plate	
9)	Functional Appliances	5
10)	Preventive measures like Fluoride application and Pit and Fissure sealant application with complete follow up	150
11)	Management of Jaw and other minor surgical procedures	5
12)	Comprehensively treated and complete cases with full records	15

III. SCHEDULE FOR 3 YEARS M.D.S. DEGREE COURSE IN PEDODONTICS :

I. M.D.S.:-

- Theoretical exposure to basic sciences and the materials used in Paediatric and Preventive Dentistry.
- Pre-clinical exercises of various preventive and interceptive orthodontic procedures including habit breaking appliances, different types of wire bending, welding / soldering exercises.
- Carving of deciduous and permanent teeth, sectioning of deciduous and permanent teeth, tracing of Cephalogram, etc.
- A broad outline of the psychological, emotional development of a child, development and rate of intelligence, theories of growth and development and growth forecasting.
- The postings in the Department of Child Psychology, Orthodontics, Oral Surgery for General Anaesthesia and other departments to enable the postgraduate to learn the latest developments for better applicability in Paediatric Dentistry.
- Commencement of Library Dissertation in the first half of I M.D.S.
- Submission of the topic for University Dissertation before the commencement of Part – I Examination.

II. M.D.S.:-

- The practical applicability of the different behavioural management procedures and its implementation.
- Learning the principles and developmental social behaviour, speech and communication skills.
- Management of handicapped children.
- Clinical paediatric dentistry including restoration of decayed teeth with tooth coloured restorative materials, etc.
- Paediatric Endodontics, Preventive and interceptive procedures, Chairside Preventive Dentistry Procedures.
- Management of traumatic injury cases.
- Submission of Library Dissertation by the middle of second year.
- Commencement of University Dissertation.

III. M.D.S.:-

- University Dissertation :
 - ❖ University Dissertation should be submitted 6 months prior to final examinations.
- All treatment procedures and modalities :
 - ❖ Understanding the principles of cariology, nutrition, diet and dental / oral health.
 - ❖ In-depth study of indices of dental caries, periodontal diseases and malocclusion.
 - ❖ Planning of oral health survey.

- ❖ Detailed clinical procedures involving restoration, Endodontics, Preventive and Interceptive Orthodontic procedures, etc.
- ❖ Diet recording and counseling.
- ❖ Preventive Dentistry.
- ❖ Chairside procedures in management of children with blood dyscrasias and other medically compromised children.
- ❖ Minor Oral Surgical and Surgical Endodontic procedure.
- ❖ Patient management under general anaesthesia.
- ❖ Management of children with cleft lip and cleft palate.

Before the University Examination, submission of all clinical records of work done during the entire 3 years period with the approval of the Post-graduate teacher, Head of the Department and Head of the Institution. Submission of Clinical Photographs, Clinical Records, Library Dissertation and University Dissertation, etc.

APPENDIX – IV

Recommended Books and Journals:-

Books:

- 1) A Colour Atlas of Oral Diseases in Children and Adolescents – Crippian and Scully.
- 2) An Atlas of Glass Ionomer Cements – G. J. Mount.
- 3) Cariology of Today – Guggenheim.
- 4) Child Development – Gassen and Ilq.
- 5) Child Management in Dentistry – Wright.
- 6) Clinical Paedodontics – Sydney B. Finn.
- 7) Clinical Use of Fluorides – Stephen H. Y. Wei.
- 8) Common Drugs in Paediatrics: 8th Edition – Santhanakrishnan B. R.
- 9) Community Dental Health – Jong.
- 10) Community Oral Health – Edited by – Cynthia M. Pine.
- 11) Conscious Sedation and Analgesia – Watson.
- 12) Contemporary Orthodontics – Proffit.
- 13) Dental Caries: Etiology, Pathology and Prevention – Silverstone.
- 14) Dental Health Education – Stoll.
- 15) Dentistry and the Handicapped Patient – Kenneth E. Wessels.
- 16) Dentistry for the Adolescent – Castaldi and Brass.
- 17) Dentistry for the Child Adolescent: 7th Edition – Mc. Donald R. E. and David R. Avery.
- 18) Disease Prevention and Oral Health Promotion – Cohen and Gift.
- 19) Drugs in Pregnancy and Lactation – Gerald G. Briggs.
- 20) Endodontic Practice – Grossman.
- 21) Endodontics – Ingle.
- 22) Essentials of Preventive and Community Dentistry – Soben Peter.
- 23) Fluoride in Dentistry – Fejerskov, Ekstrand and Burt.
- 24) Fluorides in Caries Prevention – Murray, Rugg Gunn and Jenkins.
- 25) Fundamentals of Paediatric Dentistry – Mathewson R. J. and Primosch R. E. – 3rd Edition.
- 26) Hand Book of Paediatric Dentistry – Cameron and Widmer.
- 27) Hand Book of Paedodontics – Kenneth D.
- 28) Kennedy's Paediatric Operative Dentistry – Kennedy and Curzon.
- 29) Management of Dental Behaviour in Child : Volume – I : Louis W. Ripa.
- 30) Manual of Paedodontics – Andlaw and Rock.
- 31) Medical Emergencies in Children – Meharban Singh.
- 32) Nutrition in Preventive Dentistry : Science and Practice – Nizel.
- 33) Occlusal Guidance in Paediatric Dentistry – Minoru Nakata & Stephan H. Y. Wei.
- 34) Oral Health Care Systems – W.H.O.
- 35) Oral Health Surveys: Basic Methods – W.H.O.
- 36) Pathways of Pulp – Cohen and Burns.
- 37) Paediatric Dental Medicine – Forrester D. J.

- 38) Paediatric Dentistry – Stewart, Barber, Trautman and Wei.
- 39) Paediatric Dentistry Total Patient Care – Stephen H. Y. Wei.
- 40) Paediatric Dentistry: Infancy through Adolescence – Pinkham Jr. – 3rd Edition.
- 41) Paediatric Drug Therapy – Tomare.
- 42) Paediatric Medical Emergencies – P. S. Whatt.
- 43) Paediatric Oral and Maxillofacial Surgery – Kaban.
- 44) Paediatric Orofacial Medicine and Pathology – Hall.
- 45) Pedodontics : A Clinical Approach – Goran Kuch.
- 46) Preventive Dentistry – Forester.
- 47) Primary Preventive Dentistry – Norman O. Harris.
- 48) Principles of Endodontics – Munford.
- 49) Psychology – Crider, Goethals and Kavanaugh.
- 50) Sedation in Dentistry – Girtler and Hill.
- 51) Self Assessment Picture Tests in Paediatric Dentistry – Linda.
- 52) Surgical Endodontics – Gutmann.
- 53) Text Book of Clinical Cariology – Thylstrup and Fejerskov.
- 54) Text Book of Paediatric Dentistry – Braham and Morris.
- 55) The Biologic Basis of Dental Caries – Lewis Manekar.
- 56) The Management of Traumatized Anterior Teeth of Children – Hargreaves J. A.
- 57) The Metabolism and Toxicity of Fluoride – G. M. Whitford.
- 58) The Prevention of Dental Disease – Murray.
- 59) Traumatic Injuries of Anterior Teeth – Andreasen.
- 60) Understanding Dental Caries – Gordon Nikiforuk.

Speciality Journals:

- 1) ASDC Journal of Dentistry for Children.
- 2) International Journal of Paediatric Dentistry.
- 3) Paediatric Dentistry.
- 4) Journal of Clinical Paediatric Dentistry.
- 5) Journal of Indian Society of Pedodontics and Preventive Dentistry.

Other Journals:

- 1) Acta Odontologica Scandinavia.
- 2) American Journal of Orthodontics.
- 3) American Journal of Orthodontics & Dento Facial Orthopaedics.
- 4) Annals of Dentistry.
- 5) Australian Dental Journal.
- 6) Australian Endodontics Journal.
- 7) British Dental Journal.
- 8) British Journal of Orthodontics.
- 9) Caries Research.
- 10) Community Dental Health.
- 11) Community dentistry and Oral Epidemiology.
- 12) Dental Abstracts.

- 13) Dental Clinics of North America.
- 14) Dental Materials.
- 15) Dental Update.
- 16) Endodontics & Dental Traumatology.
- 17) European Journal of Orthodontics.
- 18) Fluorides.
- 19) International Journal of Computerized Dentistry.
- 20) International Journal of Endodontics.
- 21) Journal of American College of Dentists.
- 22) Journal of Clinical Orthodontics.
- 23) Journal of Dental Education.
- 24) Journal of Dental Research.
- 25) Journal of Dentistry.
- 26) Journal of Endodontics.
- 27) Journal of Indian Dental Association.
- 28) Journal of Oral Pathology & Medicine.
- 29) Journal of Public Health Dentistry.
- 30) Journal of the American Dental Association.
- 31) Operative Dentistry.
- 32) Oral Surgery, Oral Medicine & Oral Pathology.
- 33) Quintessence International.
- 34) Special Care Dentistry.
- 35) The Journal of Adhesive Dentistry.

APPENDIX – V

SEMINAR TOPICS FOR M.D.S. – PEDODONTICS AND PREVENTIVE DENTISTRY

- 1) Theories of Child Psychology.
- 2) Development of Behaviour in Children.
- 3) Classification of Behaviour, Factors influencing Behaviour, Behavioural Disorders.
- 4) Techniques of Behaviour Management (Psychological and Pharmacological Management).
- 5) Management of Children in Dental Office – Importance of First Dental Visit.
- 6) Restorative Materials used in Paediatric Dentistry.
- 7) Radiology in Paediatric Dentistry.
- 8) Principles of Cavity Preparation, its modifications in Primary Teeth.
- 9) Isolation of Teeth.
- 10) Temporary and Semi Permanent Restoration.
- 11) Endodontics in Primary Teeth.
- 12) Pulpal Treatment in young, Permanent Teeth.
- 13) Fractures of anterior teeth, classification and management, discoloration of teeth and its management.
- 14) Dental Caries : Etiology, Classification and Histopathology.
- 15) Dental Plaque : Its development and relation with dental caries and periodontal diseases.
- 16) Diet and Dental Caries, Diet Counseling.
- 17) Nursing Caries.
- 18) Immunology of Dental Caries.
- 19) Caries vaccine.
- 20) Pit and fissure sealants.
- 21) Oral hygiene methods to improve the oral hygiene status : Different brushing techniques, control of plaque, mechanical and chemical plaque inhibitors.
- 22) Common gingival and periodontal diseases in children.
- 23) Oral manifestations of systemic diseases in children.
- 24) Principles of growth and development, various theories of growth.
- 25) Parameters of growth assessment, methods of growth prediction.
- 26) Craniofacial anomalies.
- 27) Development of dentition.
- 28) Deleterious oral habits in children : Classification and management.
- 29) Mixed dentition analysis : Various methods.
- 30) Malocclusion : Classification and Etiology.
- 31) Cephalometrics.
- 32) Serial extraction procedures.

- 33) Space Management.
- 34) Transient Malocclusions.
- 35) History of Fluorides.

- 36) Biomechanisms of Fluorides.
- 37) Topical fluorides.
- 38) Toxicity of fluorides, defluoridation.
- 39) Handicapped children, management of disabled children.
- 40) Medical emergencies in Paediatric Dental Practice.
- 41) Minor Oral Surgery in Pedodontics.
- 42) Drugs used in Paediatric Dental Practice.
- 43) Epidemiology of dental caries and periodontal diseases.
- 44) Caries and Periodontal Indices.
- 45) Trends in Dental Caries.
- 46) Ephibodontics – Adolescent Dentistry.
- 47) Applied Anatomy and Physiology for Children.
- 48) Genetics in Paediatric Dentistry.
- 49) Prosthodontic Considerations in Children.
- 50) Bio-Statistics.

**CURRICULUM FOR M.D.S. DEPARTMENT OF PEDODONTICS AND
PREVENTIVE DENTISTRY FOR THE
TAMIL NADU Dr. M.G.R. MEDICAL UNIVERISTY**

PRACTICAL EXAMINATION

The Clinical / Practical and Viva-voce Examinations are conducted for a minimum of two days.

I DAY

1)	Case Discussion, Pulp Therapy i.e., Pulpectomy on a Primary Molar –	
	Case Discussion	: 20
	Rubber Dam Application	: 10
	Working Length (X-ray)	: 10
	Canal Preparation	: 15
	Obturation	: 15

	TOTAL =	70

2)	Case Discussion, Crown Preparation of Primary Molar for Stainless steel crown and Cementation of the same –	
	Case Discussion	: 10
	Crown Preparation	: 25
	Crown Selection and Adaptation	: 25
	Cementation	: 10

	TOTAL =	70

3)	Case Discussion, Band Adaptation for Fixed type of Space Maintainer and Impression making –	
	Case Discussion	: 20
	Band Adaptation	: 15
	Impression	: 15

	TOTAL =	50

II DAY

1)	Evaluation of Fixed Space Maintainer and Cementation :	10

	TOTAL =	200

PAPER – I : Applied Basic Sciences.

- PAPER – II** : **Clinical Paedodontics.**
- PAPER – III** : **Child Psychology, Growth and Development
Interceptive Orthodontics and Preventive
Dentistry**
- PAPER – IV** : **Recent Advances in Pedodontics.**