

# **Certificate Course in Diabetology**

**Name of Institute/Department**

## **Preamble**

The courses or programmes are by and large to provide a basic structure, to enable the candidates to understand patho-physiology, investigative methods and therapeutic applications in the field of diabetes - with emphasis on applied or practical aspects of diabetes.

## **Aim of the programme**

To provide participants with the skills necessary to provide appropriate diabetes care to patients with Diabetes Mellitus

## **Objectives :**

1. To provide information on basic, clinical and management aspects of diabetes
2. To provide comprehensive diabetes care for Urban and Rural population
3. To familiarize diet counseling, physical activity programmes and diabetes education  
To impart competence in dealing with diabetes up to secondary level and preview for
4. referring to tertiary care e.g. Diabetic retinopathy, neuropathy, coronary artery disease, peripheral vascular disease, nephropathy etc..
5. To develop leadership in prevention and control of diabetes and forming support groups for diabetes health care
6. To be able to handle diabetes inpatient care including diabetic emergencies

## **Duration**

1 year – for candidates of MBBS / MD degree

## **Criteria for accreditation**

- **No of candidates** - Only 2 candidates to be enrolled for 1 eligible teacher
- **Qualifications**
  - MD Medicine or DNB Med
  - 5 yrs post qualification experience in diabetes hospital,/ teaching hospital,/ endocrinology unit / medicine unit with specialty diabetes clinic

**Age limit:** < 40years

**Method of selection:** On the basis of clinical assessment and interview by the Course Director

**Fees:** All eligible Institutes will be allowed to collect a Fee as approved by RSSDI which should include the fees payable to RSSDI in addition to covering all expenses.

- **Supporting faculty and staff:**
  - Visiting or full time ophthalmologist
  - Visiting or full time cardiologist
  - Full time dietician/nutritionist
  - Other paramedical – diabetes educator/podologist
  - Visiting or full time surgeon
- **Infrastructure requirement**
  - Outpatient
    - Load –minimum of 30 patients./day of which 5 should be new
    - Files or electronic case records
    - Ophthalmic unit with : Funduscopy , refraction , tonometry,
    - Foot clinic: with: VPT , Doppler
    - Dietetics Dept. with
      - Diet charts
      - Capability for demonstrating diets, measurements, and foods
  - OPD facility should have
    - Room for candidates
    - BP apparatus
    - Height measure
    - Weight
    - Measuring tape
    - Tuning fork
    - Monofilament
    - Ophthalmoscope
    - Hammer for DTRs
  - Minor OT with
    - Table, sterilization, facility for suturing and equipment for minor surgical procedures
  - ECG room with 12 lead ECG facility
  - Minimum life support and resuscitation facility
  - Radiology unit with facility for
    - Minimum 200 mA X- ray machine with X-ray technician and visiting / full time radiologist
- Lab:

- Facilities for estimation of
  - Blood Glucose, Hb TLC, DLC ESR, HbA1C
  - Lipids, KFT, LFT, Microalbumin
  - Urinalysis including Ketones
  - Serum electrolytes
- Technician with minimum Diploma in medical lab technology and a visiting Biochemist/ Pathologist
- Should be an Accredited lab

➤ Indoor:

- At least 10 beds / access to the same within 5 kms in a diabetes hospital / medicine unit of a general hospital admitting diabetic patients
- Separate room for patient education
- Seminar / teaching room with audio visual facilities
- Library with:
  - Text books/ reference books of Basic Medical science, Medicine, clinical Methods , Diabetes , Diabetic foot, Nutrition, Cardiology,
    - Number : at least 50 books
  - Journals:
    - Internet facility for access to major journals

**All degrees, internship certificate, MCI certificate must be checked by Institute and a certificate issued by them to RSSDI to that effect.**

## Course content/syllabus

1. Epidemiology of Diabetes Mellitus (DM)
2. Classification of Diabetes – Mellitus (DM)
3. Normal glucose metabolism & other metabolic issues in diabetes mellitus
4. Aetio-pathogenesis of Diabetes mellitus and classification of DM
5. Clinical features and examination in patients with Diabetes mellitus.
6. Laboratory diagnosis of DM
7. Complications of DM
  - Diabetic ketoacidosis
  - Hypoglycemia
  - Non – Ketotic Hyperosmolar Diabetic Coma
  - Diabetic Neuropathy
  - Diabetic Nephropathy
  - Diabetic Retinopathy
8. Diabetes and Heart
9. Diabetes and Hypertension
10. Diabetes and Pregnancy
11. Diabetes and Infections
12. Diabetes and Surgery
13. Diabetic Foot
14. Sexual dysfunction in Diabetes Mellitus
15. Dietetics in diabetes
16. Exercise, Physical activity and non – Drug therapy in DM
17. Management of Diabetes-Oral Anti Diabetic Agents , Insulin , insulin delivery systems, monitoring ,
19. Primary Prevention & clinical research issues in Diabetes Mellitus.
20. Diabetes in special situations

## **Syllabus : Theory**

1. The basic and applied intermediary metabolic aspects in diabetes mellitus and its complications - with relevance to clinical diabetes
2. The epidemiology of diabetes mellitus - a brief global profile highlights - with large focus on epidemiology of diabetes in India
3. The diagnostic criteria and classification of diabetes mellitus - and varied clinical patterns
4. Basic laboratory tests in diabetes mellitus - blood glucose, urine ketones and albumin, HbA1, fructosamine, lipids, creatinine and their significance
5. 'Day to day management' of diabetes mellitus - diet, exercise, drugs, non drug therapy, insulin and diabetic education - an overview
6. Practical aspects and hints on diet therapy - diabetic diet exhibits, certain selective aspects like Glycaemic index, fiber diet etc.
7. Exercise and its aspects in diabetes mellitus and allied disorders - obesity, hypertension, insulin resistance etc.
8. Various aspects of oral anti-diabetic drugs - including a touch on indigenous drugs
9. The current insulin, newer insulin and insulin delivery systems - the initiation of insulin therapy in diabetes and in acute & chronic complications
10. Monitoring of blood glucose control - criteria, and benefits of Glycaemic achievements in control - practical aspects
11. An overview of complications of diabetes mellitus - and their recognition and presentation.
12. Metabolic complications in diabetes mellitus - brief outlines and management.
13. Diabetes related acute clinical emergencies in all its aspects
14. Infections and diabetes mellitus - the precautions including the foot syndrome
15. The diabetic neuropathies and management
16. Diabetes and the eye - a brief over view and aspects in management
17. Diabetes and the kidney - nephropathy and non-nephropathy aspects
18. Management tactics of Diabetes during Surgery & Anaesthesia
19. Pregnancy and diabetes - problems, highlights and management
20. The organization skills to conduct routine screening of diabetes camps for public and establishment of a diabetic clinic for clinical practice

## **Practical:**

1. Diet exhibition and diet workshops - and well designed charts
2. Diabetes - laboratory techniques - visiting diabetes laboratories  
Instrumental Diabetology - various instruments – Doppler, NCV, Biothesiometry, Sops Nerve Conduction Velocity, Pedometer, ECG, ECHO, Vascular laboratory techniques,
3. Self Glucose Monitoring techniques, Insulin Infusion Pumps, CSII monitoring machines.
4. Eye and diabetes - fundus examination and techniques (photocoagulation) demonstration
5. Visiting connected specialty referral clinical services. Art of maintaining clinical case records and electronic case recording techniques
6. Insulin, insulin syringes and Insulin pens - display and explanation -
7. A visit to Intensive Coronary Care, the Intensive Medical Care & EMS facilities

## **FRAME WORK:**

1. Basic Sciences (20% time) Immuno-genetics, Insulin resistance, Intermediary metabolism, Pathogenesis of micro-vascular and macro-vascular complications, and lipid disorders.
2. Clinical problem solving exercises (60% time) Problems in diagnosis, Screening for complications, Management issues, Drug interactions, Emergencies and Patient education. This may include clinical demonstrations, C.P.C. or other similar activity.
3. Related specialty interaction (20% time) Ophthalmic, Neurology, Nephrology, Surgery, Reproductive, Obstetric, Dermatological and Psychological and other areas including value added attendance at diabetes update meets and conferences.

Attendance: 80% attendance as per the University regulations

Seminars, journal clubs, bedside case discussion and reviews in diabetes and related illnesses.

Recent Advances in Diabetology

Research methodology in diabetes

## **Training**

(i) Didactic Lectures:

1-2 / week, covering almost all chapters as in the RSSDI textbook

(ii) Dissertation :

15 case histories - 1 Pregnancy & Diabetes, 1 Type 1, 5 peri-operative (varying specialties), 2 diabetic foot, 6 with complications (including emergencies)

## **Working hours**

To be decided by the institute

## **Log Book** of daily activity with:

### Outpatients

- 100 type 2 DM cases per year including
  - o Complications
- 10 T1DM
- 5 GDM
- 5 Perioperative

### Inpatients

Minimum 20 cases of dm

Minimum procedures /skills

Clinical bedside skills – Anthropometry including Waist

- Fundoscopy
- Monofilament
- Ankle Brachial index
- Life support and resuscitative skills
- Recording and interpreting an ECG

Skills in dietetics – planning and constructing a diet chart for type DM, T1 DM, DM with Pregnancy , DM in special situation s ; inclusive of meal planning,

Skills in patient education:

T2 DM

T1DM

### Other skills

Glucometer use Lab skills:

-blood glucose, Ghb and Microalbumin

Log Book to be signed with evaluation weekly

Minimum of 40 hrs a week / or 8 hrs /day.

## **Suggested Reference: Books & Journals**

1. DIABETES: Joslin's Diabetes Mellitus. 14 ed. 2005. RC660.J6 (Research). Kahn CR, et al.
2. RSSDI TEXT BOOK OF DIABETES MELLITUS Second Edition, 2007 BB Tripathy, HB Chandalia, AK Das, PV Rao, SV Madhu, V.Mohan
3. CONQUEST OF DIABETES BY DIET AND EXERCISE by Dr. H.B. Chandalia and Ms. Sonal Modi
4. DIABETIC FOOT - A CLINICAL ATLAS by Dr. Sharad Pendsey
5. HANDBOOK OF NUTRITION AND DIABETES MANAGEMENT by Prof. Sam G.P. Moses
6. A HANDBOOK ON DIABETES MELLITUS by Prof. V. Seshiah,
7. DIABETES MELLITUS by Prof. P.G. Raman\
8. PRACTICAL MANAGEMENT OF DIABETES MELLITUS 2nd Edition by Dr. Sharad Pendsey
9. FULL LIFE WITH DIABETES by Dr. A.S. Godbole and Dr. S.A. Godbole

## **Suggested Indexed Journals (Print / electronic)**

- 1: Diabetes
- 2: : Diabetes care
- 3: Diabetes & vascular disease research
- 4: Diabetes, obesity & metabolism
- 5: Diabetes, nutrition & metabolism
- 6 Current diabetes reports
- 8: The Diabetes educator
- 7: Diabetes forecast
- 10: Lancet
- 11: New England Journal of Medicine
- 12: Journal of Diabetes Research in Developing Countries (Indian)
- 13: Asian Journal of Diabetes (Indian)

**Assessment :-** only by self assessment system

## **certificate**

- 1) No RSSDI logo to be printed for Legal purposes.
- 2) RSSDI will only approve the “course material” & the “Institute” wanting to do the course

**sample:-**

(Name of institute)

This is to certify that  
.....MD  
has faithfully and successfully  
fulfilled all duties required for  
training  
having been found qualified in the  
examination held  
in.....  
for RSSDI approved Certificate Course  
in Diabetology

**RSSDI President**

**Course Director**