

Diabetes Mellitus Basic Training Course

Criteria for applying:

Physicians, nursing personnel, dietitians/nutritionists, pharmacists or other relevant health personnel with at least one year' working experience in the Department of Internal Medicine (including the General Medicine, Family Medicine, Endocrinology and Metabolism and etc.) or equivalent experience at hospitals.

Course instruction:

1. Please complete your application through Google Forms (Link: https://docs.google.com/forms/d/e/1FAIpQLScWWaquoCCwKArrp5IINPcGJzi89MYUSYpwv2SQPCo3J_Xi8A/viewform?usp=sf_link) before 8th May. Once your application is accepted, the International Cooperation and Development Fund (TaiwanICDF) will send a direct link to your training course through email in the end of May 2024.
2. The training course is required to be completed in June, 2024. Please complete the training course, final examination and course evaluation before the platform closes.
3. The certificate of this training course will be issued by Taiwanese Association of Diabetes Educators (TADE) and the TaiwanICDF once you complete the course and download it from the online course webpage.

Course outline:

1. Introduction of DM Basic Training Course 25 min

**Chun-Chuan Lee, MD, MSc- Chief, Division of Endocrinology and Metabolism,
Mackay Memorial Hospital, Taipei, Taiwan**

- Course focus :
 - A. Introduction to the course
 - B. Pre-course test
- Description : The concept of this course is to provide basic care-related knowledge to learn the basis of clinical management and practical courses. The pre-course test is to understand the general knowledge of the trainees about diabetes, and will be compared with the post-course test to see if they received the desired learning effect through this course. The test topics were set by the Taiwanese Association of Diabetes Educators.

2. Current Status and Prevention and Control Experiences of Diabetes in Taiwan

35 min

Chih-Yuan Wang, M.D., Ph.D, EMBA- President, Taiwanese Association of Diabetes Educator; Professor, College of Medicine, National Taiwan University

- Course focus :
 - A. Introduction of teamwork on diabetes care in Taiwan
 - B. Update on national survey for diabetes control in Taiwan, and the pivotal role of certified diabetes educators in diabetic education
 - C. Views on diabetes care and expectation of government in Taiwan
 - D. Prospects of health promotion hospitals in Taiwan and introduction of pay-for-performance in quality care of diabetes

- Description :

The first part: 1. Introduce the historical origin of the development of diabetes education in Taiwan. 2. Explain the current strategy of combining Taiwan's diabetes health education with national policies. 3. Introduce the basic structure of the Diabetes Common Care Network.

The second part: 1. Explain the current status of the ABCs of diabetes control in Taiwan. 2. Introduce the control of diabetes-related complications in Taiwan. 3. Share the educational modules for diabetes educators, and diabetes and complication control.

The third part: 1. Explain Taiwan's Health Promotion Administration's (HPA) policy on diabetes care. 2. Explain the structure of Taiwan's diabetes control community.

The fourth part: 1. Explain the structure of Taiwan's diabetes health insurance payment. 2. Compare the advantages and disadvantages of the qualitative remuneration health insurance payment structure. 3. Prospects for the future of Taiwan's diabetes health education.

3. Classification, Diagnosis, and Epidemiology of Diabetes Mellitus

35 min

Chii-Min Hwu, M.D.- Section of Endocrinology and Metabolism, Department of Medicine, Taipei Veterans General Hospital

- Course focus :

A. Classification, diagnosis of diabetes mellitus

B. Epidemiology of diabetes mellitus

- Description :

The first part: 1. Provide trainees with a brief introduction to the signs of diabetes and hyperglycemia. 2. Explain American Diabetes Association's (ADA) current recommendations for the diagnosis and screening of diabetes. 3. According to the Diabetes Classification issued by the World Health Organization (WHO) in 2019, introduce various types of diabetes.

The second part: According to the data from the International Diabetes Federation (IDF) and Taiwan Diabetes Yearbook, explain the current status of diabetes found in epidemiological investigations.

4. Prevention or Delay of Type 2 Diabetes

Facilitating Behavior Change and Well-being to Improve Health Outcomes

32 min

Chih-Yao Hsu, Visiting staff- National Taiwan University Hospital Hsin-Chu Branch

- Course focus :

A. Prevention or delay of type 2 diabetes: high risk groups, pharmaceutical interventions, and lifestyle change

B. Facilitating behavior change to improve health outcomes : Lifestyle habits for preventing diabetes

- Description :

The first part: 1. Introduce methods for the prevention and control of type 2 diabetes, starting from the risk factors of type 2 diabetes. 2. Introduce the research on medicine intervention and lifestyle changes to prevent type 2 diabetes: China Daqing Project, Finnish Diabetes Prevention Study, Diabetes Prevention Program, etc.

The second part: Mention self-care behaviors to prevent type 2 diabetes, including healthy diet, increasing physical activity, and adjusting excessive eating and immobility caused by stress and environment to promote health.

5. Glycemic Targets

Self-monitoring of Blood Glucose

60 min

Mei Chang, Associate Professor - School of Nursing, College of Medicine, National Taiwan University

- Course focus :
 - A. Glycemic targets
 - B. Role of self-monitoring of blood glucose (SMBG) in diabetes management
 - C. How to perform SMBG and apply its results to self-management

- Description :

The first part: 1. Explain the goals set by each diabetes group for blood glucose control, including hemoglobin A1C, pre- and post-prandial blood glucose. 2. Large-scale empirical research recommendations for blood glucose control goals, including glycemic targets for special groups (such as 65 years of age or older, children and adolescents, etc.).

The second part: Briefly introduce self-glucose monitoring, and explains what kind of assistance it can provide for insulin injection cases and non-insulin injection cases, including self-management of the case, adjustment of lifestyle, and helping doctors adjust treatment. Use continuous blood glucose monitoring as an assistance tool to exert more functions.

The third part: 1. Introduce the matters that the case needs to learn when performing self-monitoring of blood glucose, including operation of the blood glucose meter, time and frequency of monitoring, interpretation of monitoring results,.2. Introduce how to apply the monitoring results to diabetes self-management and blood glucose control.

6. Hypoglycemia

42 min

Jiun-Lu Lin, MD, MSc- Division of Endocrinology and Metabolism, Department of Medicine, Mackay Memorial Hospital, Taipei, Taiwan

- Course focus :
 - A. Hypoglycemia definition and severity
 - B. Hypoglycemia symptoms and pathophysiology
 - C. Causes and complications of hypoglycemia
 - D. Hypoglycemia management and prevention

- Description : This course will explain the related signs, definitions and disease physiology that lead to hypoglycemia in the treatment of diabetes, and will help health education personnel.

1. Instruct patients about the recognizable symptoms and health effects of hypoglycemia.
2. Learn more about the relationship between diet, physical activity, medication, and hypoglycemia. Assist patients in understanding the risk factors of hypoglycemia that can be changed and the follow-up treatment related to hypoglycemia.

7. Pharmacologic Approaches to Glycemic Treatment

60 min

**Shih-Tzer Tsai, Chief, Division of Endocrinology and Metabolism; Director,
Department of Nutrition
Cheng Hsin General Hospital**

- Course focus :
 - A. Pharmacologic therapy for type 1 diabetes
 - B. Pharmacologic therapy for type 2 diabetes

- Description :

The first part: 1. All type 1 diabetes patients need to receive basal and premeal insulin therapy. 2. Type 1 diabetes patients need to have appropriate self-management education and adjust their insulin dose according to diet content, physical activity, and self-monitored glucose levels to prevent hypoglycemic episodes.

The second part: 1. If there are no contraindications or drug intolerance, metformin is the cornerstone and drug of choice for the treatment of type 2 diabetes. 2. Combination use of sulfonylureas or DPP-4 inhibitors can help control hyperglycemia and reach glycemic target. 3. Early combination therapy instead of stepwise intensification is easier to achieve control and defer the introduction of insulin therapy. 4. Start insulin therapy if symptomatic hyperglycemia and/or metabolic decompensation are noted as presentations of the disease. 5. Consider add-on basal insulin therapy if A1C is substantially above target for more than 3-6 months despite maximum dose of combination of oral hypoglycemic agents.

8. Cardiovascular Disease and Risk Management

50 min

Ching-Ling Lin, M.D.- Chief of Department of Internal Medicine, Cathay General Hospital, Taipei, Taiwan; Chief of Division of Endocrinology and Metabolism, Cathay General Hospital, Taipei, Taiwan; Assistant Professor, Internal Medicine, Taipei Medical University

- Course focus :
 - A. Diabetes with cardiovascular disease
 - B. Hypertension/blood pressure control in diabetes patients
 - C. Hyperlipidemia and lipid management in diabetes patients
 - D. Glucose-lowering therapies and cardiovascular outcomes

- Description :

The first part: 1. Understand the impact and importance of cardiovascular disease in diabetes patients. 2. State the prevalence, pathogenic mechanism and risk factors of diabetes and cardiovascular disease. 3. Describe the clinical signs and diagnostic screening of diabetic cardiovascular disease. 4. Evaluate strategies and intervention methods to prevent or reduce cardiovascular disease in diabetes.

The second part: 1. Understand the impact and importance of hypertension on cardiovascular disease in diabetic patients. 2. Understand the causes and importance of hypertension in diabetic patients. 3. Explain the goal of treatment of hypertension in diabetic patients.

The third part: 1. Recognize the impact and importance of diabetic dyslipidemia on cardiovascular disease. 2. Understand the characteristics of dyslipidemia in diabetic patients. 3. Explain the treatment goals of blood lipids in diabetic patients.

The fourth part: 1. Explain the relationship between blood glucose control and cardiovascular complications of diabetes. 2. In the early stage of diabetes diagnosis, strict blood glucose control can be used to prevent diabetic cardiovascular disease. 3. Introduce various mechanism types of hypoglycemic medicines, such as SGLT-2 inhibitors, DPP-4 inhibitors, and intestinal GLP-1 medicines by the large-scale international clinical trials have affected the results of cardiovascular events.

9. Microvascular Complications

35 min

Horng-Yih Ou, Professor and Ching-Han Lin, Visiting staff- National Cheng Kung University Hospital

- Course focus :
 - A. Introduction of microvascular complications
 - B. Overview of diabetic retinopathy
 - C. Overview of diabetic nephropathy
 - D. Overview of diabetic neuropathy

- Description :

The first part: Explain the scope of diabetic small vessel complications, and provide trainees with a preliminary understanding of its clinical significance and impact on patients.

The second to fourth parts: Outline the definition, clinical signs and diagnostic stages (classification) of diabetic retinopathy, nephropathy, and neuropathy, as well as related treatment and prevention.

10. Diabetic Foot Care

25 min

**Jia-Pei Chen- Registered Nurse, Chang-Geng Medical Foundation Chiayi
Chang-Geng Memorial Hospital**

Ming-Hui Chen, Registered Nurse, Chi-Mei Medical Center

- Course focus :
 - A. Diabetic foot examination
 - B. Prevention of diabetic foot
 - C. Foot exercises
- Description : Foot problems are a common chronic complication of diabetes. Research has found that the mortality rate in the 5th year after diabetic amputation is as high as 39-68%. Faced with such a high mortality rate, diabetic foot lesions can be detected early through correct and complete foot examination of diabetic patients. Early detection of diabetic foot lesions, coupled with knowledge of health education of foot care and increased self-care ability, can delay or reduce the probability of foot lesions, and also reduce the incidence of amputation and death.

11. Children and Adolescents

60 min

**Chia-Hung Lin, MD, PhD- Assistant Professor, Chang Gung University and Chang
Gung Memorial Hospital**

- Course focus :
 - A. Epidemiology of diabetes in children and adolescents
 - B. Anti-diabetic treatment for children and adolescents
 - C. Complications of diabetes in children and adolescents
- Description :

The first part: Explain the impact of diabetes on children and adolescents through epidemiology.

The second part: Introduce treatments for children and adolescents, including children and caregivers' health education and training.

The third part: 1. Introduce the impact of children and adolescents' diagnosis of diabetes on parents, and their awareness of diabetes complications. This helps medical staff provide patients with appropriate support, and flexible and age-appropriate health education and care. 2. Explain the scope of diabetic small vessel complications and provide students with a preliminary understanding of its clinical significance and impact on patients.

12. Diabetes Care in the Hospital

60 min

Yi-Sun Yang, MD- Chung-Shan Medical University Hospital

- Course focus :
 - A. Hospital care delivery standards
 - B. Glycemic targets in hospitalized patients
 - C. Bedside blood glucose monitoring
 - D. Glucose-lowering treatment in hospitalized patients
- Description :

The first part: Explain the importance of diabetes inpatient care, including formulate standard operating procedures and risk management, provide hospital-wide consistent care, and regularly implement medical quality and benefit analysis to improve the quality of diabetes inpatient care.

The second part: Explain the definition of inpatient blood glucose abnormalities and the goal of inpatient blood glucose control.

The third part: Explain the hospital blood glucose strategy, bedside blood glucose monitoring, measurement timing, and bedside blood glucose testing equipment.

The fourth part: Introduce the hypoglycemic drugs for inpatients. The first choice for hypoglycemic drugs for inpatients is insulin, which explains the insulin therapy for severe and non-severe patients. In some cases, inpatients can continue to use the oral hypoglycemic drugs prescribed in the outpatient clinic. This section will also introduce and explain precautions for oral hypoglycemic drugs.

13. Diabetes and Weight Management

45 min

Wu-Lung Chuang, MD- Changhua Christian Hospital

- Course focus :
 - A. Introduction of diabetes and diabetes
 - B. Treatment and management of diabetes

- Description :

The first part: Explain the definition and incidence of diabetes and related complications.

The second part: Explain the choice of medication for diabetes, diet therapy and exercise intervention.

14. Exercise advice for diabetic patients

30 min

Kai Jen Tien- Associate Professor, Chi Mei Hospital

- Course focus :
 - A. Evidence of exercise on diabetes prevention and control
 - B. Clinical practice on exercise
 - C. Safety issues in exercise
- Description : In addition to medication and diet, the prevention and control of diabetes require the intervention of exercise to effectively achieve a safe and high standard of perfect sugar control. This course will provide relevant knowledge about the effect of exercise on the metabolism of diabetic patients, the difference in the effect of various types of exercise on blood sugar, and the matters that should be noted during exercise.

15. Medical Nutrition Therapy

50 min

**Chung-Mei Ouyang, Ph.D., RD.- Director/Dietitian, Department of Dietetics,
National Taiwan University Hospital, Hsin-Chu Branch.**

- Course focus :
 - A. Introduction of nutrition therapy in diabetes management
 - B. Medical nutrition therapy and glycemic control
 - C. Meal planning and nutrition education for patients with diabetes

- Description : Medical nutrition therapy aims to assist diabetes patients in intake of healthy foods to achieve the best nutrition status and well management. Understanding the role of various nutrients in the diabetic diet and the relationship between nutrients, food, and insulin helps blood sugar control. Learning how to implement nutrition therapy projects, including nutrition assessment, diagnosis, project and goal setting, implementation/education and evaluation, etc., so that the nutritional treatment of diabetes can be fully utilized and effective clinical practice can be achieved.

16. Nutrition Therapy in the Caribbean

37 min

**Pei-Yin Lai- Registered Dietitian (RD), Department of Dietetics, Nutrition
Medicine Center, Mackay Memorial Hospital, Tamsui Branch**

- Course focus :
 - A. Nutritional therapy principles and expected targets for diabetes management
 - B. Relationship between blood sugar level, nutrients and food
 - C. Diabetes meal planning and application

- Description :

The first part: 1. Introduce the goals and strategies of nutritional therapy which should focus on the treatment and prevention of diabetes to achieve best results in the control of blood glucose, blood pressure, and blood lipids. 2. Introduce nutritional treatment recommendations for the control of blood glucose, blood pressure and blood lipids, as well as control goals.

The second part: Explain the relationship between nutrients, food, and blood sugar control in the diet, and illustrates East Caribbean food and diet patterns.

The third part: Give advice on a diabetic diet based on the Eastern Caribbean diet.

17. Health Promotion and Stress Management Related to DM Care during COVID-19 Pandemic

20 min

Nien-Mu Chiu- Chief, Director of Psychosomatic Division, Psychiatric Department, Kaohsiung Chang Gung Memorial Hospital

- Course focus :
 - A. Health promotion related to DM care
 - B. Stress management for DM patients related to COVID-19 pandemic
- Description :

The first part: Introduce the definition of health promotion and various communication strategies related to DM care. Health teachers could use open ended questions, motivational interview techniques, FRAMES interventional techniques, 5R framework, OARSC communication principle and new telemedicine service to promote health of DM patients. Finally, teachers could use SMART method to setup parameters of DM control goal and assist the patient's responsibility to make change, to carry out their plans and to follow up the outcome.

The second part: 1. The COVID-19 pandemic's effect on patients and impact on the medical system in seeking treatment. 2. How to reduce psychological stress and trauma caused by COVID-19.

Health teachers could assist them to build rational and logical thinking process to avoid anxiety, depression, burnout, post traumatic stress disorder, substance use, grief symptoms and suicide idea. The strategies included tips for building resilience, high quality food, nutrition, exercise, improving sleep and stress management by six strategy PARENT, that is using positive thinking, assertiveness, relaxation, exercise, nutrition, and touching blessing. Finally, health teachers could assisted DM patients to control DM, to avoid exacerbation or complications, to keep updated new information about COVID-19 pandemic, to learn coping strategies, and to prevent psychological trauma.

18. Closing Remarks

25 min

**Chih-Yuan Wang, M.D., Ph.D, EMBA-President, Taiwanese Association of
Diabetes Educator; Professor, College of Medicine, National Taiwan University**

- Course focus :
 - A. Closing remarks
 - B. Post-course test
- Description : The concept of this course is to provide basic care-related knowledge for people who receive diabetes training as the basis for learning clinical management and practical courses. The post-course test is to understand the general knowledge of the trainees about diabetes, and will be compared with the pre-course test to see if they received the desired learning effect through this course. The test topics were set by the Taiwanese Association of Diabetes Educators.