



Community Care and Management of Longer-term Conditions: Diabetes Mellitus Type 2



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What is Diabetes Mellitus

Diabetes mellitus is a long-lasting condition that affects how the body regulates blood glucose (sugar). Glucose is the main source of energy for the body, and insulin (a hormone made by the pancreas) moves glucose from the blood into cells for energy.

In diabetes, the body either does not produce enough insulin or cannot use it properly. This causes glucose to build up in the blood, leading to high blood sugar levels. Over time, this can damage blood vessels, nerves, eyes, kidneys, and the heart. (WHO, 2023)

There are three major kinds of Diabetes.

Type 1 Diabetes: The body's own immune system attacks and destroys the insulin-producing cells in the pancreas. People with type 1 diabetes need insulin every day to live. (NICE, 2023)

Type 2 Diabetes: This can happen when the body doesn't produce enough insulin, or when it doesn't use the insulin effectively. Type 2 is the most common form of diabetes, accounting for approximately 90% of all cases of diabetes, and is related to health factors such as obesity, physical inactivity, and unhealthy diet (Diabetes UK, 2024).

Gestational Diabetes: Occurs in pregnancy and normally goes away once the baby is born, but it does raise the risk of type 2 diabetes developing later in life. (WHO, 2023)

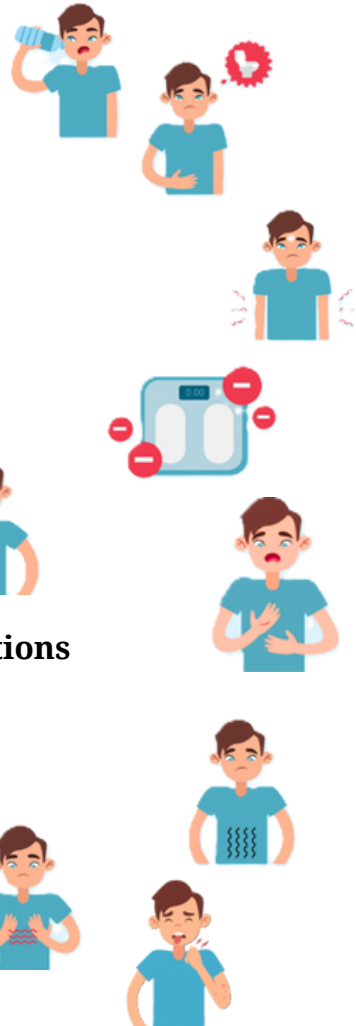
Signs and Symptoms of Diabetes Mellitus Type 2

Diabetes can present differently from person to person. Some individuals may not notice any symptoms at all in the early phases of type 2 diabetes. Other Individuals may experience sudden symptoms and severe symptoms. It is essential to recognize early signs of diabetes because early diagnosis and treatment can prevent serious complications.

Common Symptoms of Diabetes

Individuals with diabetes may notice one or more of the following symptoms:

- **Excessive thirst (polydipsia)**
- **Frequent urination (polyuria)**
- **Extreme tiredness or fatigue**
- **Unexplained weight loss**
- **Blurred vision**
- **Slow healing of wounds or repeated infections**
- **Increased hunger (polyphagia)**
- **Tingling or numbness in hands or feet**
- **Dry mouth or itchy skin**



The World Health Organization (2023) and NHS England (2024) have identified these as the most common observed symptoms of Type 2 diabetes. Thus, identifying symptoms, and obtaining a medical review and blood sugar test are vital for early detection and management.

Difference in Symptoms and Importance of Early Detection

Symptoms: Type 1 vs. Type 2

Type 1 diabetes presents suddenly, especially in children and young adults, and requires insulin treatment from the time of diagnosis.



Type 2 diabetes develops slowly, mostly in adults, and may require only dietary, exercise, or tablet treatment in the beginning.

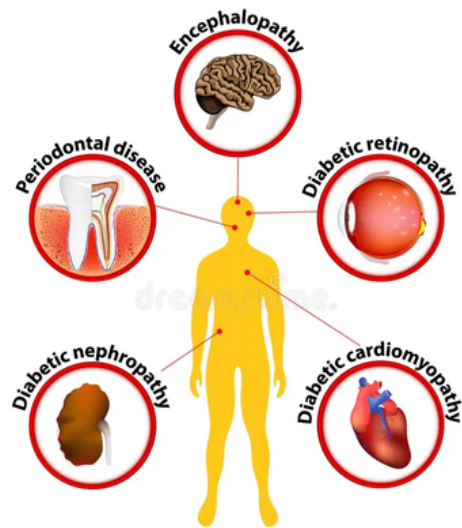
The symptoms for both diseases include excessive thirst, tiredness, blurred vision, and excessive urination. However, the symptoms for Type 2 diabetes will gradually develop whereas Type 1 symptoms develop quickly (WHO, 2023; Diabetes UK, 2024).



Reasons for Early Detection

Early diagnosis can avoid severe complications including kidney failure, nerve damage, and heart disease. NHS England (2024) implies that regular screening and vigilance will help pick up diabetes early, improving long-term outcomes.

If you are experiencing any of these symptoms, you need to visit with your doctor for a simple blood test. Early diagnosis can save your life and improve your quality of life.



Causes, Risk Factors, and Prevalence of Diabetes Mellitus type 2.

Causes

Type 2 Diabetes Mellitus develops when the body is resistant to insulin or when the pancreas does not produce enough insulin for glucose levels to stay in the normal range. Over time, excess sugar will build up in the blood. This condition is influenced by genetic factors, age, and lifestyle habits like poor diet and no exercise (WHO, 2023; NICE, 2023).

Non-Modifiable Risk Factors

These factors cannot be changed but the more we know, the better we can recognize the increased risk.

Family history: A parent or sibling with diabetes.

Age: Increased risk is likely after age 40 but now, younger adults are affected.

Ethnicity: Increased risk in South Asian, African-Caribbean and Black African populations.

Genetic predisposition: Genes can be inherited that affect the functioning of insulin.

History of gestational diabetes: Increased risk of future type 2 diabetes development.

Modifiable Risk Factors

You can manage or alter these factors related to your lifestyle and preventive care.

Overweight and obesity (carrying excess weight, especially around your belly).

Unhealthy diet (high sugar, refined carbohydrates, fats).

Physical inactivity or sedentary lifestyle.

High blood pressure and high cholesterol (both are associated with metabolic syndrome).

Smoking and drinking too much alcohol.

Chronic stress and poor or inadequate sleep.

Other Influencing Factors

Chronic stress and lack of sleep can disrupt hormonal balance, resulting in elevated blood sugar levels.



Some medications (such as steroids and antipsychotics) may increase the risk of developing diabetes.



Polycystic ovary syndrome (PCOS) among females can lead to insulin resistance.



Prevalence World Wide

As of the International Diabetes Federation (2023), more than 537 million adults worldwide are living with diabetes, with approximately 90% of these cases being Type 2 Diabetes Mellitus. This number globally is projected to increase to 643 million by the year 2030 and 783 million by the year 2045 (IDF, 2023). This persistent increase in diabetes represents the growing consequences of poor diet, decreased physical activity, and increased levels of obesity (WHO, 2023).

UK Context

In the UK, over 5.6 million people have diabetes, with approximately 90% of them having Type 2 Diabetes Mellitus. About 850,000 people are undiagnosed, representing 1 in 10 adults (Diabetes UK, 2024). The NHS spends nearly 10% of its total healthcare expenditure on diabetes and its complications, highlighting the significant economic and health burden of diabetes (NHS England, 2024).





Effects of Diabetes Mellitus Type 2 on an Individual and Family

Living with diabetes affects many areas of daily life - physical, mental, and emotional. Subsequent to proper management, people with diabetes can live full, healthy lives. However, poor management can lead to a lot of health and emotional problems for both the individual with diabetes and their families.

Physiological Effects of Diabetes Mellitus Type 2

Type 2 Diabetes Mellitus (T2DM) impacts numerous bodily systems, and can lead to enduring health outcomes if it is left uncontrolled. Chronic hyperglycemia can damage blood vessels and nerves, and can cause cardiovascular disease, chronic kidney disease, gastrointestinal disease, visual defects, and delayed wound healing. A person with T2DM may also experience fatigue, frequent infections, and a slower recovery from illnesses. These physiologic processes can also negatively impact quality of life and can limit activities of daily living, and can require patients to have continuous medical follow up and home supports (NHS England, 2024; WHO, 2023).





Effects of Diabetes Mellitus Type 2 on an Individual and Family



Impact on Mental/Emotional Health

Living with Type 2 Diabetes Mellitus (T2DM) can create considerable emotional and psychological pressure on anyone. The need to constantly monitor blood glucose levels, find ways to eat with limits, fear of complications, and the ongoing need to adjust to lifestyle changes can all create stress, anxiety, and depression. Most individuals describe some level of frustration or guilt about how they manage these lifestyle decisions, which can affect their self-esteem and motivation. Family members can also experience tension and anxiousness or feel burdened by the caregiving role, because of their loved one's diabetes. Access to emotional support and counselling, along with some diabetes education, can contribute to enhanced mental wellness and ultimately can lead to better overall adherence to treatment (Diabetes UK, 2024; NHS England, 2024).

Social and Family Impact

Type 2 Diabetes Mellitus (T2DM) influences not just physical health but also social and financial wellbeing. Individuals may find it difficult to remain employed, socialize or engage in daily activities due to fatigue or medical appointments. The financial burden imposed by prescription medications, glucose monitoring supplies, and food options, can be overwhelming for families, especially in low-income environments. People who live with T2DM may experience isolation due to feeling limited by their condition or not being understood by others. Community-support programme development and access to affordable healthcare can begin to relieve social and economic strain (WHO, 2023; Diabetes UK, 2024).

MANAGEMENT AND TREATMENT OF DIABETES MELLITUS

EVIDENCE-BASED PRACTICE



Diabetes is a long-term condition, however, with the right care individuals will effectively manage diabetes, enabling them to live a full and healthy life. Treatment for diabetes is about managing blood glucose levels within a safe range and reducing the risk and managing the complications of diabetes. In the UK, the majority of individuals receive their care and support and management of diabetes within the National Health Service (NHS) incorporating evidence-based guidelines provided by the National Institute for Health and Care Excellence (NICE).



Medical Treatments

Insulin Therapy:

- This therapy is crucial for those with Type 1 diabetes and can be a necessary option for Type 2 when oral medications are inadequate. (NICE, 2023; WHO, 2023)
- Insulin is available in various forms: rapid-acting (generally taken before meals), long-acting, or in a combination form. (NHS England, 2024)
- Insulin is administered via injections or through a continuous supply of insulin provided by an insulin pump.
- Patients will be educated on how to adjust insulin doses based on blood glucose readings and meal plans. (Diabetes UK, 2024).

Oral Medications for Type 2 Diabetes:

- Metformin is the first choice medication for most persons with Type 2 diabetes. Other oral medications include:
- Sulfonylureas, which help to increase the production of insulin. (NICE, 2023)
- DPP-4 inhibitors and GLP-1 agonists, which improve the body's ability to use insulin (WHO, 2023; NICE, 2023).
- SGLT2 inhibitors, which assist the kidneys in removing excess glucose from the body through urine.

According to the NICE (2024), if one medication is insufficient, a combination of medications, diet and exercise should also be considered.

Life Style Modification and blood glucose monitoring



Lifestyle Modification

Lifestyle alterations are crucial for the treatment and prevention of type 2 diabetes mellitus (T2DM). Lifestyle alterations refer to the incorporation of healthy behaviours that improve insulin sensitivity, aid with weight management, and help avoid complications. Eating a diet high in fibre, fruits, vegetable, and whole grains and low in refined carbohydrates and additional sugars is essential to effectively manage blood glucose levels. Participating in physical exercise regularly, such as accumulating 150 minutes of moderate physical activity per week, also provides cardiovascular benefits and improves the body's insulin response. A 5–10% loss of body weight can dramatically improve glycaemic control, and refraining from smoking and limiting alcoholic drinks lowers the risk of cardiovascular disease. Eating well and exercising regularly is guided by dietitians and diabetes educators in the National Health Service (NHS) who help individuals create a meal and moving plan which is achievable and feasible with culture (NHS England, 2024; WHO, 2023; Diabetes UK, 2024).

Blood Glucose Monitoring

Consistent blood glucose monitoring is an important part of Type 2 diabetes care, allowing patients to observe the effects of food, exercise, and drugs on their blood sugar levels. For patients, self-monitoring with devices, such as finger-prick glucometers and continuous glucose monitors (CGM), facilitates the identification and management of hyperglycemia and hypoglycemia with relative ease. The NHS provides eligible patients with FreeStyle Libre sensors, providing ease of access to real-time glucose levels and helping to facilitate diabetes self-management. Monitoring before blood glucose becomes dangerously low (hypoglycaemia) or high (hyperglycaemia) are vitally important. Along with education, consistent monitoring helps patients with Type 2 diabetes be proactive in maintaining stable glucose control (NICE, 2023; NHS England, 2024; WHO, 2023).

House of Care model in the UK:

The NHS House of Care model supports partnership working and person centred management of Type 2 Diabetes Mellitus (T2DM). It consists of six inter-related components that are: personalised care planning, empowerment, coordinated services, education, psychological support, and technology. Together, these ensure holistic care addressing both physical and emotional needs (NHS England, 2024)

Psychological and Educational Support

Diabetes can be a taxing illness and requires both mental and physical adjustment.

The NHS has developed structured education programmes:

DESMOND (Diabetes Education and Self-Management for Ongoing and Newly Diagnosed) for diabetes and **DAFNE** (Dose Adjustment for Normal Eating) for Type 1 Diabetes.

The aim of these programmes is to help individuals learn how to manage diabetes, gain a better understanding of the medications, and develop a personal action plan for the challenges of their daily life.

Technology in Diabetes Care

Digital technologies, like insulin pumps, continuous glucose monitoring (CGM) systems, and FreeStyle Libre sensors, facilitate management of blood glucose levels. Mobile applications and telehealth consultations provide monitoring and help from professionals, promoting independent use and adherence to treatment plans (NICE, 2023; WHO, 2023).

Frequent Check-Ups and Preventive Care

Diabetes management recommends annual reviews for:

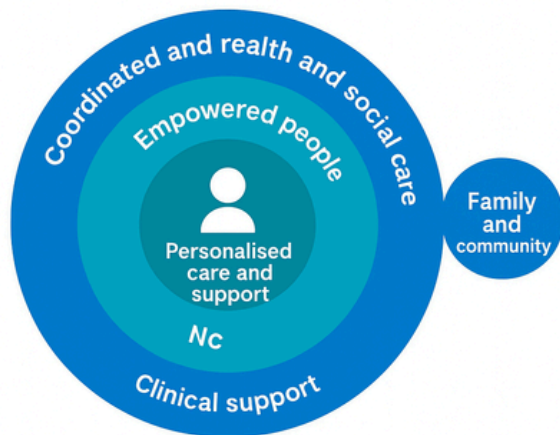
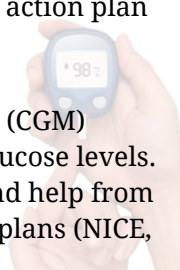
Blood tests for HbA1c (summary average over 3 months).

Eye screening for diabetic retinopathy.

Foot checks for circulation and nerve problems.

Blood and urine amyloid assessments and testing to check kidney function.

If detected early, these interventions will proactively assist you with complications.



Diabetes Mellitus Type 2 Management Models and Frameworks

Healthcare systems use existing models to outline guidance for healthcare professionals and patients in managing long-term conditions like diabetes. Models develop a basis for person-centred, evidence-based and sustainable support for management.

UK Model – NHS Long Term Plan & Self-Management Framework

The NHS Long Term Plan (2019–2024) endorses a person-centred strategy to facilitate individuals with Type 2 Diabetes Mellitus (T2DM) to become involved in their care. The model focuses on self-management, which is later described as educational, integrated care, digital, and prevention. Structured programmes, such as DESMOND and DAFNE, provide education for patients about self-care in diabetes management to be able to understand treatment and modify academics in a more effective manner. Patients visit various members of a multidisciplinary team (e.g. GPs, nurses, dietitians, and pharmacists) but receive similar care during the consultations.

Digital solutions, including continuous glucose monitors and telehealth consultations, support increased access to care while allowing patients to improve their daily management of blood glucose levels. There is also a focus on prevention with the NHS Diabetes Prevention Programme provided lifestyle information to those at risk of Type 2 diabetes. This framework indicates that educated and supported patients receive better outcomes, lower rates of admission to hospital, and improved quality of life (NHS England, 2024; Diabetes UK, 2024; NICE, 2023).

Global Framework - The Chronic Care Model (CCM)

The Chronic Care Model, created by Wagner et al. (1998), has been facilitated globally to enhance management for long-term conditions.

It involves six interrelated concepts:

- Community resources and policies
- Health-care organization support
- Self-management support
- Delivery system design
- Decision support (with evidence-based guidelines)
- Clinical information systems

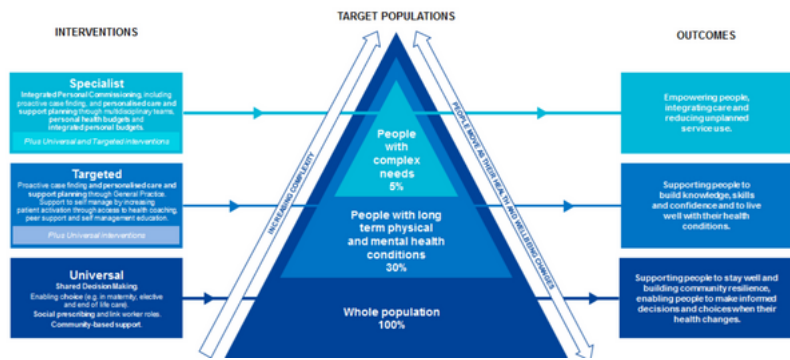
In the context of the management of diabetes, the CCM framework promotes an alliance between patients and health-care teams that endorses care continuity, education, and proactive management versus crisis-driven management.

Why These Models Are Important

Both the NHS Framework and the CCM emphasize the same idea that people with diabetes need to be engaged partners in their care. Working a treatment plan of medication and supporting individuals with education, technology, and emotional support leads to individuals sustaining healthy lives and avoiding long term complications.

Comprehensive Personalised Care Model

All age, whole population approach to Personalised Care



National , Local Health and Social Care Agendas



To aid diabetes prevention, management, and long-term care, there are several national programmes from the UK government and the NHS, aimed at reducing complications while encouraging people to manage their condition and be active in communities.

NHS Long-Term Plan (2019-2024)

Diabetes is a priority in the NHS Long Term Plan.

Key targets include:-

Expansion of the NHS Diabetes Prevention Programme for people at risk of type 2 diabetes.

Increased access to digital tools and education programmes.

The reduction of diabetes related amputation and admissions into hospital.

Provision of free continuous glucose monitors for patients with type 1 diabetes.

The Long-Term Plan promotes early diagnosis and care integration, in which patients are supported to take control of their condition.

NICE Guidelines (NG17 & NG28)

The National Institute for Health and Care Excellence (NICE) provides national guidance for managing type 1 and type 2 diabetes.

This includes:-

Recommendations for evidence-based treatment.

Structured education and support on lifestyle.

Annual reviews of individuals' eyes, feet, and kidney function

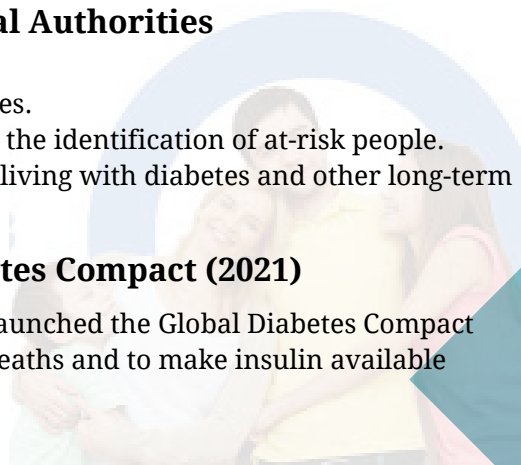
Public Health England (PHE) & Local Authorities

PHE and local authorities collaborate to:

- Encourage healthy eating and active lifestyles.
- Deliver community screening initiatives for the identification of at-risk people.
- Support social care programmes for people living with diabetes and other long-term conditions.

Global Agenda – WHO Global Diabetes Compact (2021)

The World Health Organization (WHO) has launched the Global Diabetes Compact to bring countries together to reduce early deaths and to make insulin available and affordable across the globe.



Suggestions for Person-Centered Care and Self-Management

Successful management of diabetes encompasses not only medical input but also personal input. Approaches to care that are person-centered involve providing care in the context of individual needs, preferences, and choice of lifestyle.

1. Education and Empowerment

Patients need to receive clear information about their diagnosis, medication management, diet and lifestyle. Programmes such as DESMOND and DAFNE focus on helping patients develop confidence in being able to self-manage and adjust their diabetes.

2. Healthy Lifestyle

Promoting a healthy diet, physical activity, controlling weight, and stopping smoking and no excessive alcohol consumption can reduce complications. Arranging small achievable steps help to keep motivation for the long term.

3. Regular Monitoring

Patients need to routinely monitor their blood glucose levels and attend annual reviews for eyes, feet, and kidneys. The identification of problems early in the process leads to better outcomes.

4. Emotional and Social Support

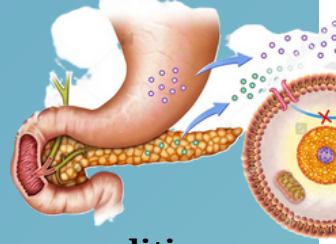
Managing a condition over a long time can lead to stress. Support groups, counseling, and family involvement contribute to mental well-being as well as compliance with treatment.

5. End-of-Life Care

For patients with advanced Type 2 Diabetes Mellitus (T2DM) or associated severe morbidities, a successful model of end-of-life care aims to ensure comfort, dignity, and some quality of life during the time remaining. Care planning can be coordinated by working together in consultation with general practitioners, nursing, diabetes medical experts, and palliative care teams, ensuring symptom monitoring and support with emotional needs as they arise. Safely managing blood glucose, preventing dehydration, and gentle, human care are very important. The NHS Long Term Plan mentions integrated, person-centred palliation support to support patients and families in making appropriate decisions about continued care (NHS England, 2024; Diabetes UK, 2024).



Conclusion



Diabetes mellitus is a serious and often long-term condition which impacts millions of people around the world. It is something that can be effectively managed with the appropriate knowledge and care. Timely diagnosis, healthy lifestyle choices, and the monitoring of health all contribute to reducing the risks of complications developing.

The NHS and international organizations are constantly developing educational material, implementing technology, and developing quality improvement initiatives in person-centered learning, while practicing compassion for those living with diabetes. Integrating medication with self-management strategies and emotional support means people can live purposeful lives, despite the potential burden of diabetes.



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