

Menopausal health:

Diabetes

Diabetes is a chronic disease characterized by insufficient insulin production or impaired insulin action, leading to hyperglycemia. It is now considered to be part of a spectrum of interconnected diseases (cardiovascular disease, obesity, metabolic syndrome, non-alcoholic fatty liver disease and chronic kidney disease).

The global prevalence of diabetes increased from 200 million in 1990 to 830 million in 2022; the condition caused over 2 million deaths in 2021.

Risk factors

- Premature ovarian insufficiency (a risk factor for type 1 diabetes)
- Age (the prevalence of type 2 diabetes increases at midlife)
- Genetic predisposition and ethnicity
- Obesity (especially central visceral adiposity), physical inactivity and an unhealthy diet
- Smoking and excessive alcohol intake
- Chronic stress, depression and sleep disorders
- Hypertension
- Dyslipidemia
- Metabolic syndrome
- A history of gestational diabetes
- Polycystic ovarian syndrome
- Thyroid disorders
- Medications (e.g. antidepressants, anti-psychotics, statins, glucocorticoids)

Chronic diabetes leads to progressive vascular damage affecting the heart, eyes, kidneys and peripheral nerves.

Diagnosis and treatment

- **Diagnosis** is based on:
 - **HbA1c** levels
 - Fasting plasma **glucose** test; 2-hour plasma glucose during 75 g oral glucose tolerance test; random plasma glucose levels
- **Treatment** includes:
 - **Lifestyle** changes (diet, exercise)
 - **Medications** (insulin, metformin, SGLT2 inhibitors, receptor agonists, pioglitazone, sulfonylureas)

Menopausal hormone therapy (MHT) and diabetes

- Neither systemic nor topical MHT is contraindicated
- MHT should be individualized, taking into account age, metabolic and cardiovascular risk factors and lifestyle
- Oral estrogens may be preferred in women with low to moderate cardiovascular risk, as they may improve **insulin resistance**
- The effect of progestogens on **insulin resistance** varies with the type and route of administration
- Micronized progesterone, transdermal norethisterone or oral dydrogesterone may be preferred

Further information

WHO (2024). Diabetes <https://www.who.int/news-room/fact-sheets/detail/diabetes>

EMAS (2025). CareOnline. Health at menopause and beyond <https://emas-online.org/guidelines-and-education/#emas-care-online>

Lumsden et al. (2025). European Society of Endocrinology clinical practice guideline for evaluation and management of menopause and the perimenopause <https://doi.org/10.1093/ajeendo/lvaf206>