04 SERVICE FLOW

STEP 1

Collect a specimen of 3ml EDTA anticoagulant blood or saliva*

STEP 2

The specimen will be delivered directly to our testing centre

STEP 3

Your health report will be completed in 50 working days

STEP 4

The report will be explained to you by your healthcare provider

* Please check with your doctor or our service provider for sampling arrangements

05 ABOUT US

GemVCare - commited to helping the public prevent chronic diseases and improving the health of patients.

With professional genetic testing technology for chronic diseases, medical professionals can customize precise treatments and management models according to your personal genetic profile and health conditions so that you can live your best life.

OUR PARTNERS

GemVCare Limited
Unit 628, Biotech Centre 2, 11 Science Park West Ave.,
Hong Kong Science Park, Shatin, N.T., Hong Kong
Tel: (852) 2809 2893
Email: info@gemvcare.com
Website: www.gemvcare.com

GemVCare GemVCare

GemVCare
Your Genes • Your Gem • Your Health

MD35
MONOGENIC DIABETES TEST

01 ABOUT MONOGENIC DIABETES

Monogenic diabetes (MD) is a subtype of diabetes caused by a **single gene mutation**. Maturity Onset Diabetes of the Young (MODY) is the main form of monogenic diabetes and is usually diagnosed during **late childhood to adulthood**, accounting for 1-5% of diabetic patients. [1] Mutations in the gene can reduce insulin production, causing the patient's blood sugar level to be persistently high. Since MODY is a genetic disease, family screening should be performed once a patient is diagnosed to understand the genetic risk to family members. [2]

The clinical presentation of MODY usually overlaps with other types of diabetes, making **misdiagnosis common in children with MODY and young patients with diabetes**.

Who should get tested:

- Diabetes patients diagnosed before the age of 25
- Those with a family history of diabetes
- Those with a negative antibodies test result, low to normal C-peptide level

Sources:

1. Kreider, K. E. (2019). The Diagnosis and Management of Atypical Types of Diabetes. The Journal for Nurse Practitioners, 15(2). doi:10.1016/j.nurpra.2018.09.022
2. Hattersley, A. T., & Patel, K. A. (2017). Precision diabetes: Learning from monogenic diabetes. Diabetologia, 60(5), 769-777. doi:10.1007/s00125-017-4226-2

02 DISTINGUISH YOUR MD SUBTYPE

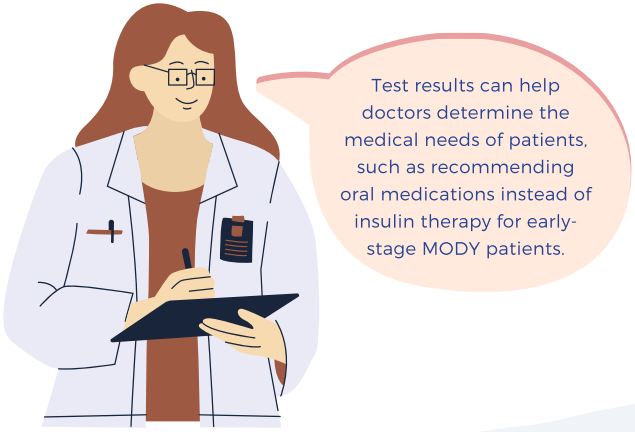
Correct identification of the monogenic diabetes subtype will help doctors provide patients with the most suitable treatment plan. According to a report jointly published by two reputable diabetes organizations, the **American Diabetes Association** and the **European Association for the Study of Diabetes**, genetic testing is the best way to distinguish the different subtypes. [1]

SOME COMMON GENES THAT CAUSE MD [2]

- Maturity-onset diabetes of the young
- Neonatal diabetes mellitus
- Syndrome
- Major clinical phenotype
- Rare clinical phenotype

Gene Mutation	Clinical phenotype(s)	Recommended treatment option
ABCC8	● ◖	High-dose oral sulfonylureas
GCK	●	No treatment needed for most patients
HNF1A	●	Low-dose oral sulfonylureas
HNF1B	●	Optimal treatment not well established
HNF4A	●	Low-dose oral sulfonylureas
INS	● ◖	Early intensive insulin treatment
KCNJ11	● ◖	High-dose oral sulfonylureas

Note: Diabetes is caused by a variety of factors, and the presence of other genetic or non-genetic factors will also affect treatment strategies.



Sources:

1. Chung, W.K., Erion, K., Florez, J.C. et al. (2020). Precision medicine in diabetes: a Consensus Report from the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD). Diabetologia 63, 1671–1693. https://doi.org/10.1007/s00125-020-05181-w.
2. Riddle, M. C., Philipson, L. H., Rich, S. S., Carlsson, A., Franks, P. W., Greeley, S., Nolan, J. J., Pearson, E. R., Zeitler, P. S., & Hattersley, A. T. (2020). Monogenic Diabetes: From Genetic Insights to Population-Based Precision in Care, Reflections From a Diabetes Care Editors' Expert Forum. Diabetes care, 43(12), 3117–3128. https://doi.org/10.2337/dci20-0065

03 GEMVCARE TEST

- Tests 35 up-to-date genes related to MODY
  34 sequenced genes + 1 hotspot (MtA3243G)
- Double verification of results
- Technical Accuracy - Validated by a local university research team (ranked No. 1 [1] in Endocrinology and Metabolism in Asia)
- Quality Assurance - periodical independent verification. GemVCare is a participant of the EMQN[#] programme
- GemVCare has licensed the patent for monogenic diabetes testing

[#] EMQN (European Molecular Genetics Quality Network) is a reputable provider of molecular genetics quality assessment services in Europe.

Sources:

1. Best Global Universities for Endocrinology and Metabolism. U.S.News. https://www.usnews.com/education/best-global-universities/endocrinology-metabolism?region=asia. Published 2021.