Information Leaflet for patients

Extensive genomic diagnostic testing

Your doctor has suggested that you undergo extensive genomic diagnostic testing. More information about this testing is provided below.

Why this test?
Your disorder/condition may be caused by a pathogenic variant in the DNA (a genetic alteration that directly contributes to the development of the disorder). The purpose of the genomic diagnostic testing is to trace this pathogenic variant.

What is required for testing?
You will be required to provide a blood sample but do not need to follow a nil-by-mouth regime for this. DNA will be extracted from this blood sample. A blood sample from your biological parents might also be required to compare your DNA with that of your parents.

Which test?

- **Gene set**: A genomic diagnostic test for several genes, known to be a cause of your disorder.
- **WES** (whole exome sequencing): A genomic diagnostic test in which all genes are examined.
- **WGS** (whole genome sequencing): A genomic diagnostic test in which all genes and the DNA material in between the genes is examined.

What are the possible outcomes?

1. Cause found
   A pathogenic variant is found in the DNA that is probably the cause of your disorder. This tells us more about the heredity aspect. Sometimes a prediction can be made on how your disorder will develop in the future and whether treatment is possible.
2. No cause found
   No pathogenic variant is found in your DNA that could be the cause of your disorder. There are two possible reasons for this:
   1. There is no pathogenic variant in the DNA that causes your disorder.
   2. There is a pathogenic variant in the DNA, but it cannot yet be identified with the current test. The doctor will discuss with you about whether there are any options for further testing.
3. Inconclusive result
   A variant in the DNA is found, but it is not clear if this is the cause of your disorder. It could be something of no significance and it might be helpful to test other family members. There is no obligation, and you are completely free in asking your family members for their cooperation.

Incidental findings
In addition to the above results, a pathogenic variant could be found in the DNA, which is not the cause of your disorder, but does play a role in another hereditary disease. This is called an incidental finding. There is only a slight chance of identifying any incidental findings and your doctor will provide you with some clear examples.

What types of incidental findings are there, and which ones will be reported to you?

1. The predisposition to a disorder **will** be reported to you if medical treatment or monitoring is possible. You can opt out if you do not wish to be informed of this.

2. The predisposition to a disorder is **not** reported to you if (based on the current data and information on the condition in question) **no** medical treatment or monitoring is possible. You can, however, opt in if you wish to be informed of this.

3. If there is a high risk of a disorder in any of your (unborn)children or your children's children (25% or higher), you **will** be informed of this. You can opt out if you do not wish to be informed of this.

What are the limitations of this test?

This test is unable to identify all hereditary disorders. The DNA test looks for the cause of your disorder. There are occasions when something else is found – an incidental finding – but this is not something that is actively sought for.

Implications for family members

The results may also be of significance for your family members, now or in the future. Perhaps they or their (unborn) children are at an increased risk of inheriting the disorder. If this is the case, your doctor will provide you with some information to be shared with your family.

When can I expect the results?

The doctor will inform you on how and when you will receive the results.

Insurance cover

The costs of the tests are covered by your health insurance, (with the exception of some budgetary stipulations). You can ask your own health insurance provider for more details. You only pay the excess if it has not yet already been used-up for that year. In the event that a DNA test is also being performed on your parents to compare their DNA with yours, then it is also covered by your health insurance.

Will the DNA test have any consequences for my insurance policies?

Heredity testing can sometimes affect the ability to take out some insurance policies, such as disability insurance or life insurance. More information about insurance and heredity can be found at www.erfelijkheid.nl. You can also ask your insurer or insurance advisor.

Future contact

On completion of a genomic diagnostic test, there is no further active search for the cause of the disorder. However, it is possible that new data or information, important to you, will become available in the future.

- If no cause has been found, you can contact our department again after 3-5 years. A decision can then be made on whether it may be useful to conduct fresh analysis on the data from the genomic diagnostic test.
- In rare cases, the department of Clinical Genetics will contact you itself. If you wish to opt out from this, you can do so in the consent form.

The costs of any follow-up tests are declared to the health insurer and may be charged against the excess.

What happens to the DNA?

- If necessary, your DNA will be sent to another national or international laboratory to perform the genomic diagnostic test. The privacy of your personal data is guaranteed during this process.
- The DNA is stored at the Genetics Department in accordance with the statutory regulations. The data will not be passed onto insurers, for example.
- To interpret the test results as accurately as possible, they may be shared with other national or international laboratories. The results are encrypted, which means that the name and date of birth are replaced by a code. Your details can only be traced back to the laboratory that carried out the test. This guarantees the privacy of personal data during the process.
- You can give permission for the DNA to be used for further scientific research. Your data will be handled with due diligence. You do not directly benefit from this. On rare occasions a researcher may discover something that could be important to your health or that of your family members. The doctor will inform you about this.

Questions

If you have any questions after reading this information or would like to change your consent status, please contact the doctor at the Clinical Genetics Department.