GENETIC TESTS INFORMATION TEXT AND EXPLICIT CONSENT FORM

***Patient Name-Surname:** **Protocol No:**

***Date of Birth:** ***Date of Arrival:**

***TR ID / PASSPORT NUMBER:** ***Gender:**

***Sending Institution:**

This form documents that you will be informed about the genetic test/analysis/evaluation deemed necessary by your physician for yourself and/or the individual for whom you are legally responsible, in accordance with the relevant articles of the "Genetic Diseases Evaluation Centers Regulation1". A suitable sample will be needed to obtain the required genetic material for the procedure to be performed for genetic testing/analysis/evaluation. Then, this sample will be processed and will be ready for analysis by going through various stages (obtaining a sufficient cell population with cell culture, isolating DNA, targeting and amplifying certain genes on DNA, etc.). A final report will be prepared after the analysis; This report will be prepared in an appropriate medical language, in accordance with international standards and rules, to help make the necessary clinical decision. The result to be obtained will be accurate, limited by factors such as the type of data evaluated by the analysis, the characteristics and limitations of the technical method applied, and the level of information provided by current literature data. You can receive "genetic counseling" service from a specialist physician to inform you about the procedure to be performed, to monitor you and your family regarding the results and to contribute to the planning of your treatment process, and to discuss issues such as the reliability of the result obtained. In this case, your physician can also guide you. Please do not forget to ask for consultancy service from authorized personnel on issues you do not understand. Publications, regulations, etc. used to support some of the information contained in this form. References are referred to as header information in the text, and links to these references are given at the end of the form.

What Sample Type Will Be Needed?

In order to perform genetic tests, different sample types such as 5-10 ml of blood, 1 cm2 tissue, 20 ml of amniotic fluid are required depending on the indication. Your physician will decide the type of sample to be used for the test and the method of collection. The suitability of the sample is important for the performance of the test and the reliability of the result. Special samples such as amniotic fluid and chorionic villus biopsy (CVS), abortion material, and tissue biopsy may need to be taken by your physician under special conditions and with a separate consent form. The samples taken may be exhausted after the tests are carried out.

What are the Genetic Testing/Analysis/Evaluation Process and Its Features?

Medical Genetic Analyzes can be classified into three main disciplines: Conventional cytogenetic and molecular cytogenetic analyzes and molecular genetic analyses.

1.Conventional Cytogenetics (Karyotyping Test, Chromosome Analysis): Structural and numerical anomalies of chromosomes are evaluated. This analysis consists of a sample such as amniotic fluid taken during the prenatal period, as well as your blood sample, bone marrow aspiration material, etc. can be done. For conventional examination, dividing cells are needed to make the chromosomes visible and examine them. In cases where direct examination is not possible to obtain this cell population, cell - tissue culture is applied. Some examinations require direct preparation. The material taken for study may not contain sufficient or suitable cells and tissues, existing cells may not proliferate, or the study may not be possible due to contamination. Although the cells proliferate, the resulting chromosome quality may not be sufficient for the study.

In such cases, the sample may need to be taken again. From time to time it may not be possible to obtain a new sample. The most important technical limitation of the conventional method is that it is susceptible to false positive or false negative results due to its low resolution. Some structural anomalies may not be detected, and "mosaicism", which indicates the formation of more than one chromosome, may not be detected due to the low number of cells examined. It may be useful to support chromosome analysis with additional methods.

2.Molecular Cytogenetics (FISH and Array Tests): The desired regions of the chromosomes are marked with fluorescent dyes and examined using a method called FISH. This method only gives an idea about the targeted area. Molecular Karyotyping (array karyotyping, chromosomal microarray) analysis are methods applied using special chips developed to simultaneously scan DNA deletions and duplications and copy number variations that are too small to be detected by standard chromosome analysis. The result obtained with array karyotyping varies depending on the resolution of the chip used.

3. Molecular Genetic Analyzes:These are methods for analysis of DNA code. After DNA extraction, a target region or gene can be amplified and analyzed using molecular methods. These analyzes can be applied using the following methods; DNA can be visualized directly by gel electrophoresis.
DNA sequence can be read by capillary electrophoresis method.
By applying the new generation sequencing method;heMany genes can be analyzed simultaneously with panel tests.heAll 4500 genes associated with genetic diseases identified by clinical exome sequencing can be read simultaneously.heApproximately 20 thousand genes encoded by DNA can be sequenced with whole exome sequencing.heWith whole genome sequencing, the entire DNA sequence consisting of 3 billion base pairs can be scanned.
The nature and size of the data to be obtained will vary depending on the scope and technical characteristics and limitations of the examination to be performed. For the same reasons, there is a possibility of false positive and false negative results in this type of analysis.

Is Genetic Testing Necessarily Diagnostic?

Genetic analyzes are not performed only for the purpose of making a diagnosis, confirming the diagnosis, or determining the genetic background of a disease or predisposition. Sometimes it aims to decide on treatment, sometimes to determine prognosis, to get an idea about the course of the disease and to estimate the possibilities of recurrence. Some genetic tests, such as screening whether embryos obtained using Assisted Reproductive Methods have an unbalanced chromosome structure by preimplantation genetic screening method before being transferred to the mother's womb, and non-invasive prenatal screening based on free fetal DNA examination, which is used especially for trisomy 21 screening in pregnant women, are completely called "Screening Tests". It may also have the characteristics of . However, even if this is the purpose of the test, it may not always be diagnostic. The fact that the method used is technologically advanced and more data is obtained does not guarantee that the genetic test will provide a definitive diagnosis. Although the scope of the test is very wide due to technological limitations, it may not provide the opportunity to examine every targeted region equally. Since the information about some genes and regions outside the genes is not yet sufficient, the changes on the tested DNA may not be associated with a disease. The information obtained as a result of the test may need to be reanalyzed and/or supported by additional tests in line with technological and scientific advances. It is the responsibility of the attending physician to request reanalysis and/or additional tests. However, matching laboratory data with other data, especially clinical findings, is of great importance in genetic diagnosis and follow-up.

Test Conclusion and Reporting, Additional Testing and Retest Requirement

At our center, tests are run as quickly as possible and result delivery times are based on average test run times. However, due to patient or laboratory-specific situations and the need for additional testing and further examination, your results may be given to you in a longer or shorter period than stated.
Sometimes the result obtained may not be sufficient to make a definitive judgment. For this reason, a confirmation study, repeat analysis, an additional test or referral to a further center may be recommended in your report. For these cases, you may sometimes need to provide a new sample and pay an additional fee for the new test. The result stated in the genetic test report may need to be re-analyzed after a while, including clinical evaluation. In this way, evaluation and analysis are possible with the latest information and the report remains up-to-date.
It is possible that the test result may require a radical treatment approach such as a surgical procedure or termination of pregnancy. For this reason, the evaluation of the following clinician is very important and it is the responsibility of the following physician to evaluate and interpret the test result in terms of compatibility with the clinic, and to apply for

additional tests, advanced examinations and genetic counseling when necessary. As with all laboratory tests, in case of even the slightest clinical doubt, a repeat test – confirmation test should be requested. These may require new samples to be taken.
In prenatal diagnostic tests and some other analyses, additional samples may need to be taken from the mother and/or father and other family members to support the diagnosis. These samples serve purposes such as increasing the reliability of the analysis, ensuring verification of the sample, excluding contamination, and determining the intrafamilial distribution of a mutation detected in the patient. In genetic tests performed on family members, the biological relationships reported by the patient may not coincide with the biological relationships revealed as a result of the test; paternity status or other genetic characteristics may be revealed unintentionally. There may be cases where samples of the mother and/or father or additional tests need to be run. In accordance with ethical and legal rules, data other than the purpose of testing are not reported. Separate approval is required for additional studies requested by the physician. In addition, in the prenatal period, gender information cannot be reported in prenatal diagnosis karyotyping reports, preimplantation screening and diagnostic tests, and prenatal trisomy screenings, except for gender-related diseases and anomalies.

Situations That Need to Be Processed in More than One Center and Things to Know About Your Data

All our genetic information is classified as qualified personal data. The provisions of the relevant regulation1 are complied with regarding the protection, storage and sharing of data with third parties. In the confirmation section, you can choose not to have a copy of your result sent to anyone, including the requesting physician. Otherwise, preliminary information can only be given via e-mail to the physician who requested the test, and your own physician(s) can access your results in the hospital automation system. You can change this preference later. The signed result report is delivered to the patient/parent/guardian by hand. If you give approval or request a signature, your signed report can be sent by mail or other means to the physician or physicians who made the request and follow you clinically, to you or to another person you authorize. From time to time, a solution for your genetic test may be provided through interlaboratory collaboration in accordance with relevant laws. The laboratory to collaborate may be domestic or abroad. In some cases, an additional consent form may need to be completed. Responsibility for your result is assumed by our center, which receives your approval, together with the laboratory from which we receive service. In addition, we are responsible for the security of your data and sample. However, with your approval, you accept that possible delays and other similar technical - medical problems may occur due to reasons beyond the control of the sender, especially in cases where testing / analysis is required abroad. While some of the procedures for some tests are carried out within the center, both inter-laboratory and cloud-based data - sample transfer may be possible for purposes such as device use and data processing.
5/2(c) and 6/3 of the Personal Data Protection Law. Based on the legal reasons specified in the article,
By carrying out examination, diagnosis and treatment services in accordance with the Genetic Diseases Evaluation Centers Regulation1, personal data are collected for the purpose of sample acceptance and registration, wet laboratory study of the sample, study of the sample in digital environment (bioinformatics), reporting, shipment of samples to other centers, invoicing of summary tests. Your data may be shared privately.
Genetic Diseases Evaluation Centers work under the District and Provincial Health Directorate and the Ministry of Health. The public authority may request data from the centers from time to time. However, the payment support required for the test may be provided by SGK and affiliated institutions. Test results may need to be shared in cases required by law or mandated by the authority.

Test Conclusion and Reporting, Additional Testing and Retest Requirement

At the center, reports, electronic records and their backups, informed consent forms taken from patients before the genetic study, and genetic counseling information report samples and samples are kept under appropriate conditions for the period required by legal obligations.

☐ I have read and understood the information text. I asked my questions. I know that I can meet again when necessary.

INFORMED EXPLICIT CONSENT FORM

This form becomes valid when the approval section is signed and confirms that the necessary information has been provided by your physician, that you have read and understood the information in the form, and that you approve it. You do not need to initial all pages separately, except for the confirmation section. Your approval is a declaration that you have read all the pages, understood them, discussed the areas you did not understand, and received satisfactory answers and given your consent. You should keep a copy of the form you signed and keep it for your benefit. There are four separate approval sections. The first is to continue to store your sample and data after the legal periods have expired, if appropriate, the second is to use your data in statistical studies with ethics committee approval after anonymization and complete purification of your identity information, the third is to report incidental findings, and the fourth is to conduct the test. You also reserve the right to withdraw your consent, and you can contact us at any time and inform us in writing that you have changed your preference, and have it processed according to your new preference. When giving your consent, please remember that your genetic data is also the personal data of all individuals who are related to you.

1. In accordance with the Personal Data Protection Law No. 6698, the processing and transfer of data is approved.

Within the framework announced as the data controller within the scope of the Personal Data Protection Law No. 6698 ("Law") and the relevant Genetic Diseases Evaluation Centers Regulation, and the Health Services Fundamental Law No. 3359, Law No. 2827 on Population Planning, General Hygiene Law No. 1593, Organ and Tissue Law No. 2238. Your explicit consent is required to keep and process your personal data in accordance with the Law on Collection, Storage, Vaccination and Transfer, Ministry of Health regulations and other legislation.
My personal and special data; If it is mandatory for the performance of the contract, if it is clearly foreseen by law, if it is mandatory for the genetic test/analysis/evaluation to be carried out, my personal data regarding health and sexual life can only be used for the protection of public health, preventive medicine, medical diagnosis, execution of treatment and care services, planning and financing of health services. to be preserved, processed and transferred in accordance with the matters specified in the Information Form for Genetic Tests, except for the cases where it is processed and transferred to the extent necessary for management purposes,

□I Accept With My Explicit Consent.

□I do not accept.

2. Incidental Findings

Reading the DNA code with clinical exome sequencing, whole exome sequencing, and whole genome sequencing methods, especially using new generation sequencing technologies; In cases where copy number variations carried throughout the genome are detected by chromosomal microarray analysis, diseases and predispositions that have not yet manifested symptoms other than the genes targeted for diagnostic purposes may emerge. In accordance with the principle of not using genetic data for purposes other than its intended purpose, findings independent of the tested condition are not reported; However, information can be shared upon request for genes/diseases that can be treated and/or prevented with necessary preventive medicine services. This authority will be updated in accordance with the relevant guidelines2 and will be used and information will be shared in line with the person's approval. Following the detection of these incidental findings, family members may also need to be tested and receive genetic counseling.

□ Incidental findings may be reported.

□ Incidental findings cannot be reported

3. Analysis Data and Sample Use Consent

Test results and patient samples are an important research resource for physicians, scientists, and universities. In order to improve the treatment of diseases and improve the statistics of our country, it is important to grant the right to use your personal information for research and development and statistical information, provided that it is hidden, anonymized and encrypted. The use of anonymised information is under the authority of the centre. Your analysis data can be shared anonymously on scientific platforms, provided that your identity information is kept confidential. Your sample and data can be used as a control sample. In addition to your approval, university ethics committee approval will also be obtained.

□I agree. For a study that has received Ethics Committee approval, it can be used for statistical/control purposes as anonymous data/sample stripped of my identity information.

□I do not accept.

TEST CONSENT

Test / Procedure / Evaluation to be performed:

…… ……
…… ……

This part will be filled in by the patient himself or his legal representative.
I understand that the above-mentioned test/procedure/evaluation must be performed on me/my child/my unborn child/the patient for whom I am the guardian.
I was informed about the technical features and limitations of the genetic tests to be performed and I understood the positive/negative aspects of the procedure in full detail.
Possibilities of false positive/false negative results, need to rerun and/or analyze the test, etc. The necessary information, including but not limited to those specified in this form, was disclosed to me during my meeting with my physician.
I was informed about the possibility of re-taking the sample and requesting additional samples when necessary.
The medical terms in the article were explained in a way I could understand, and I was given enough time to ask questions and make a decision. I have read the text on this form / it was read to me by the responsible person and I understand it. I declare that I am aware of my responsibilities in matters related to genetic diagnosis, that I accept the genetic diagnosis without being under any threat, material or moral pressure, that I allow the above-mentioned genetic diagnosis procedure to be performed on me, and that I know that I can withdraw this permission at any time.

Patient's Name and Surname:……

Patient's Relative/Representative Name and Surname, Degree of Relation……

Reason for not informing the patient but informing the patient's relative:

□The patient is unconscious□The patient has no decision-making authority□Urgent

□Other:……

Contact Number (Patient/Relative/Representative):……**Addre ss City/District**

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(Patient/Relative/Representative):.....
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☐ **Patient is under 18 years old**

Contact Number:
(Mother).....**(Father)**.....**Name Surname:**
(Mother).....**(Father)**.....

Signature: Signature:

INTERPRETER (If the patient has a Language/Communication Problem)
I translated the explanations made by the doctor to the patient. In my opinion, the information I translated was understood by the patient.

Name & Surname of the Translator:.....

I.....,

My doctor explained in detail what the procedure would be, its duration, possible results and complications, risks, alternative methods, and the consequences that would occur if I did not accept it, and I understood these in my right mind. I have read and understood the 3-page Information and Consent Form for Genetic Tests given to me. I asked questions to the doctor about my concerns about my condition, risks, procedures and options, and conveyed all my thoughts to him, and I was convinced by the answers I received. As a result of the information, I was adequately enlightened. I ALLOW. Write “I have read, I understand, I approve” in your own handwriting:

....

Date/Time: Signature:

PHYSICIAN
I explained to the patient the diagnosis I made as a result of the patient's complaints, tests and examination findings and its reason, the content of the proposed procedure, its purpose and chance of success, its advantages and risks, the results of alternative diagnostic methods, if any, and the risks that may arise in case the procedure is rejected, and gave the information form to the patient. I fully answered all the questions asked to me by the patient / patient's relatives.

- Special risks (if any)):.....

Physician's Name & Surname:.....**Date/Time: Signature**

It is based on the REGULATION ON GENETIC DISEASES EVALUATION CENTERS, which is published and regularly updated by the Ministry of Health:https://www.saglik.gov.tr/TR,10413/yonetmeLİK.html
Guidelines for reporting Secondary-incidental findings published and regularly updated by the American College of Medical Genetics (ACMG): https://www.acmg.net/ACMG/Advocacy/Policy-Statements/ACMG/Advocacy/PolicyStatements.aspx?hkey=31d4ab23 - 4888412f-953e-b5a2be3af63d