Dynacare®

Form 1a: Informed Consent to Perform Genetic Testing for Retinoblastoma (RB) (NY)

By signing below, I acknowledge that:

1. My participation or, as applicable, my child's participation in this DNA testing is voluntary. The decision to consent to, or to refuse the above testing is entirely mine.
2. This testing is done on small biological samples.
3. It is possible that the quantity or quality of sample submitted may be inadequate for testing or that a variant cannot be identified.
4. No tests other than those authorized shall be performed on this biological sample.
5. When DNA testing shows a variant, then the person is a carrier or is affected with that condition or disease, or, in the case of cancer genetic testing, the person is a carrier of a variant that may be associated with an increased risk for certain cancer(s) compared to the general population. Consulting a doctor or genetic counsellor is recommended to learn the full meaning of the results and to learn if additional testing might be necessary.
6. When the DNA testing does not show a variant, the chance that the person is a carrier or is affected is reduced, or, in the case of cancer genetic testing, the person's risk for certain cancer(s) compared to the general population will depend on additional personal factors. There is still a chance to be a carrier or to be affected because the current testing cannot find all the possible variants within a gene.
7. Impact Genetics will only collect, use, and disclose your personal health information as permitted/designated on the requisition/order form or required by applicable laws. For example, if necessary to obtain reimbursement of test fees, Impact Genetics, its agents and legal representatives, may disclose personal health information (including test results) for such purpose.
8. Impact Genetics is not a DNA banking facility and patient DNA samples may not be available for future testing.
9. An error in diagnosis may occur if the true biological relationships of the family members are not as stated in the pedigree submitted with the requisition/order form. It is possible that the test may disclose non-paternity (someone who is not the biological father), or some other previously unknown information about family relationships, such as adoption, and I consent that this finding be reported to the referring specialist designated on the requisition/order form.
10. There is a chance that the test may reveal unexpected abnormalities that may be of medical value in the patient's care. Impact Genetics will inform the referring specialist designated on the requisition/order form.
11. Until the results of this test are reported, the patient and members of the patient's family should still undergo examinations as prescribed by the referring specialist.
12. I have read or have had read to me, the above information and I understand it. I have also read or had explained to me the specific disease or condition tested for, and the specific test(s) I am having, including the test descriptions, principles and limitations. I have had the opportunity to discuss the purposes and possible risks of this testing with my doctor or someone my doctor has designated.

Consent for Storing a Sample

Impact Genetics is not a DNA banking facility and patient DNA samples may not always be available for future testing. However, Impact Genetics has my consent to store any surplus DNA samples indefinitely, for future clinical testing as requested by me. If "No" is checked or if neither box below is checked, the sample will be destroyed within 60 days after test completion.

☐ **Yes** ☐ **No**

Signature of Patient or Consenting Parent/Guardian:_____ Date: _____

Signature of Witness:_____ Date:_____

Statement of Referring Physician

I reviewed this form with my Patient. I offered to answer any questions.

Signature of Referring Physician:_____ Date: _____

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Information about the Retinoblastoma (RB) Genetic Test

What is Retinoblastoma (RB)?

Retinoblastoma *(Reh-tin-oh-blast-oma)* is a cancer of one or both eyes that occurs in young children. Retinoblastoma affects about 1 in 15,000 live births, and an estimated 9,000 children develop the cancer each year around the world. Retinoblastoma affects children of all races and both boys and girls.

The retinoblastoma tumor(s) originate in the retina, the light sensitive layer of the eye that enables the eye to see. When the tumors are present in one eye, it is referred to as unilateral retinoblastoma, and when it occurs in both eyes it is referred to as bilateral retinoblastoma. 60% of cases involve only one eye (unilateral) and the rest (40%) affect both eyes (bilateral). The majority (90%) of retinoblastoma patients have no family history of the disease. The most common early sign of retinoblastoma is a white glow in the child's eye. This cancer is easy to diagnose, and treatment is very effective when tumors are found early.

Purpose and Principle of the Test

Genetic testing for retinoblastoma searches for *RB1* gene variants in DNA obtained from patient blood and/or tumor. Results are useful to determine whether the retinoblastoma is heritable, and to estimate the probability of passing the *RB1* gene variant to subsequent family members. The results can also be useful to assess the patient's risk of other eye tumors or cancers outside the eye, affecting the patient's treatment and level of clinical surveillance that is required to discover cancers early.

Most importantly, for bilaterally affected patients and the 18% of unilaterally affected **patients who are shown to carry an *RB1* variant in blood**, identification of the *RB1* variant enables variant **testing of the patient's parents, siblings and offspring**, to determine whether they carry the patient's *RB1* variant. Offspring of the retinoblastoma patient are usually at 50% risk to inherit the *RB1* variant, and those children who inherit the *RB1* variant have a 95% risk to develop retinal tumors. Child relatives who are shown to carry o carry the *RB1* gene variant require close clinical surveillance to discover small tumors when they can be treated with minimal risks. Child relatives who do **not** carry the *RB1* variant are at population risk for retinoblastoma, and do not require close clinical surveillance. The 5% of parents who carry the *RB1* variant are at increased risk of other cancers, and their other children are at risk of inheriting the *RB1* variant.

For unilaterally affected patients who do not show a *RB1* variant in blood, clinical treatment for the patient can be modified based on the fact that no *RB1* variant is detected in blood; siblings, parents, and offspring have a much reduced risk of retinoblastoma, and clinical surveillance can be modified accordingly.

Test Method: Impact Genetics' *RB1* Variant Identification Strategy

For unilateral patients with no family history of retinoblastoma, Impact Genetics requests both blood and a fresh or frozen tumor sample. If no tumor tissue is available, blood analysis is helpful but can be less definitive. For most unilateral patients with positive family history and for bilateral patients, Impact Genetics can successfully diagnose from a blood sample only, but fresh or frozen tumor tissue is helpful for some families, so Impact strongly recommends that every retinoblastoma tumor sample be preserved by flash freezing for future analysis. Blood samples from relatives may be required to determine if family members carry the same *RB1* variant as the affected patient. Impact Genetics isolates DNA from the specimens of blood and tumor and performs a series of molecular tests to maximize efficiency in finding *RB1* variants. Testing includes screening for large deletions as well as sequencing for point mutations or small insertions or deletions.

Impact Genetics is certified under the US Clinical Laboratory Improvement Amendments of 1988 (CLIA-88) as qualified to perform high complexity clinical laboratory testing. Impact Genetics's tests were developed, and their performance characteristics determined, by Impact Genetics. They have not been cleared or approved by the US Food and Drug Administration, which has determined that such approval is not necessary. Impact Genetics does not perform linkage analysis.