Patient Informed Consent

Huntington Disease

Huntington disease (HD) is a progressive, fatal, inherited neurodegenerative disorder that typically has adult onset. HD is caused by an expansion of CAG repeats in the first coding region of the *HTT* gene, which results in an abnormal buildup of Huntingtin protein in the brain. The symptoms of HD are thought to be caused by the progressive buildup of Huntingtin protein deposits. HD is inherited in an autosomal dominant pattern, which means that only one of the two *HTT* alleles needs to be expanded for disease to occur. A parent with HD has a 50% chance of passing the expanded CAG region on to each of their children.

HD testing by PCR and fragment sizing analyzes the CAG repeat region of the *HTT* gene to measure the number of repeats. The number of repeats can tell whether person is at risk of developing HD. Understanding the number of repeats a person has may provide insight into what can be expected for the person in the future, whether other family members may be at risk for disease, and what the risk is for any children a person may have.

It is important to consider how the result may affect the person being tested or their family members. Genetic testing can have emotional, social, or financial consequences. Individuals may feel emotions such as anger, guilt, or anxiety relating to their results. Sometimes genetic test results can cause tension within a family if they reveal information about other family members in addition to the person who was tested originally. Genetic discrimination can also be a concern for individuals in the case of employment or insurance.

Types of Results

Result	Repeat Range	Interpretation
Unaffected	Up to 35 CAG Repeats	The number of repeats detected is not considered disease-causing. This individual is not at risk of developing disease. Alleles in the 27 to 35 repeats range are unstable and more likely to expand when passed to the next generation. Therefore, while this individual is not at risk for developing symptoms of Huntington disease, they are at risk for having affected children.
Reduced Penetrance	36-39 CAG Repeats	The number of repeats detected has variable clinical consequences. Some individuals with this number of repeats develop symptoms of Huntington disease, while some do not. This individual may develop disease, and they are at risk for having affected children.
Full Penetrance	40 or greater CAG Repeats	The number of repeats detected is considered disease-causing. This individual is affected, and any children of this individual have a 50% chance of developing disease.

Patient Informed Consent

Huntington Disease-Like 2

Huntington disease-Like 2 (HDL2) is a progressive, inherited disorder of movement and cognition. HDL2 is caused by an expansion of CTG repeats in the *JPH3* gene. While HDL2 has similar symptoms to Huntington disease, there is some variability in the course of disease. HDL2 is inherited in an autosomal dominant pattern, which means that only one of the two *JPH3* alleles needs to be expanded for disease to occur. A parent with HDL2 has a 50% chance of passing the expanded CTG region on to each of their children.

There are two described courses of HDL2. One course is marked by early onset, and usually results in rapid weight loss, decreased coordination, muscle weakness, and involuntary movement (chorea). People with HDL2 also develop dementia and other cognitive issues. The second course has slightly later onset, and usually presents with chorea and abnormal eye movements. This course typically progresses more slowly and may have milder psychiatric and cognitive symptoms.

HDL2 testing by PCR and fragment sizing analyzes the CTG repeats in the *JPH3* gene to measure the number of repeats. The number of repeats can tell whether person is at risk of developing Huntington disease-Like 2. HDL2 is a rare disorder, and research is still being done to understand the effect of specific repeat sizes. Understanding the number of repeats a person has may provide insight into what can be expected for the person in the future, whether other family members may be at risk for disease, and what the risk is for any children a person may have.

It is important to consider how the result may affect the person being tested or their family members. Genetic testing can have emotional, social, or financial consequences. Individuals may feel emotions such as anger, guilt, or anxiety relating to their results. Sometimes genetic test results can cause tension within a family if they reveal information about other family members in addition to the person who was tested originally. Genetic discrimination can also be a concern for individuals in the case of employment or insurance.

Types of Results

Result	Repeat Range	Interpretation
Unaffected	Up to 28 CTG Repeats	The number of repeats detected is not considered disease-causing. This individual is not at risk of developing disease.
Reduced Penetrance	29-40 CTG Repeats	The number of repeats detected has variable clinical consequences. Alleles in this range may be unstable and more likely to expand when passed to the next generation. Some individuals with this number of repeats develop symptoms, while some do not. This individual may develop disease, and they are at risk for having affected children.
Full Penetrance	41 or greater CTG Repeats	The number of repeats detected is considered disease-causing. This individual is affected, and any children of this individual have a 50% chance of developing disease.

HD and HDL2 Informed Consent

Patient Informed Consent

I grant permission for Johns Hopkins Genomics to perform the genetic test listed on this form for me/my child. The results of genetic testing may be dependent upon the clinical information provided to the laboratory by my physician. The laboratory cannot guarantee turn-around-time. Risks and limitations of this test may include, but are not limited to, disclosure of unexpected family information (non-paternity, consanguinity), uninformative negative results, unexpected findings, and lab error. De-identified clinical or genetic information may be used for quality control purposes, research, and shared in public healthcare databases. Results will be released only to the providers authorized on the test requisition. I understand the benefits, risks, and limitations of this genetic testing.

Patient Name (Print):

Signature: **Date:**

Relationship to patient (if not self):

Provider Alternate Consent

I, the health care provider requesting the above testing, have explained the benefits, drawbacks, and limitations of genetic testing to the patient, and have discussed the potential psychological impact the results may have on the patient and their family. I have obtained verbal consent or an alternate written consent (please attach) to order the test indicated. I have confirmed that the patient has consented for the testing ordered and that two matching identifiers are present on each page of this requisition.

Signature: **Date:**

Resources for Patients and Families

- **Huntington's Disease Center at Johns Hopkins**
  https://www.hopkinsmedicine.org/psychiatry/specialty_areas/huntingtons_disease/index.html
- **Huntington's Disease Society of America**
  https://hdsa.org/
- **National Organization for Rare Disorders**
  https://rarediseases.org/rare-diseases/huntingtons-disease/
- **National Institute of Neurological Disorders and Stroke**
  https://www.ninds.nih.gov/
- **Clinical Trial for the National Institutes of Health**
  https://clinicaltrials.gov/
- **HOPES: Huntington's Outreach Project for Education at Stanford**
  http://www.stanford.edu/group/hopes

**The information presented by these resources has not been verified by the DNA Diagnostic Laboratory. If you have questions about the information on these websites, please contact your doctor or genetic counselor.*