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PATIENT REPORT

Patient Age/Sex: 35 years Female

Specimen Collected: 5/6/2025 08:15 MDT

Ashkenazi Jewish Diseases |**Received: 5/6/2025 08:15 MDT** **Report/Verified: 5/7/2025 16:19 MDT**

Procedure	Result	Units	Reference Interval
Ashkenazi Jewish Diseases, Specimen	Whole Blood		
Ashkenazi Jewish Diseases,Panel Results	**Positive** *		
Ashkenazi Jewish Diseases,Gene 1	**HEXA** *		
AJP Gene 1,Allele 1	**c.1073+1G>A** *		
AJP Gene 1,Allele 2	Negative		
Ashkenazi Jewish Diseases,Gene 2	N/A		
AJP Gene 2,Allele 1	N/A		
AJP Gene 2,Allele 2	N/A		
Ashkenazi Jewish Diseases Carrier Status	**Yes** *		
Ashkenazi Jewish Diseases,Interp	See Note f1 i1		

Result Footnote

f1: Ashkenazi Jewish Diseases, Interp

Indication for testing: Carrier screening for genetic disorders common in Ashkenazi Jewish individuals.

Positive: One pathogenic variant, c.1073+1G>A, was detected in the HEXA gene; therefore, this individual is a carrier of Tay-Sachs disease. Genetic counseling is recommended. This individual's reproductive partner should be offered screening for the disorder. At-risk family members should be offered testing to determine carrier status for the identified variant. None of the other targeted variants associated with the 16 common Ashkenazi Jewish disorders screened by this panel were identified. If this individual is of Ashkenazi Jewish descent, he/she may use the table below to review the residual carrier risk for the other disorders. If this individual has a positive family history of a disorder covered by this panel, the figures for that disorder do not apply. Tay- Sachs disease is a lysosomal storage disorder caused by accumulation of glycosphingolipid (GM2) ganglioside. In the most severe childhood onset form, it leads to loss of motor skills beginning at 3- to 6-months of age and progresses to blindness, seizures, total incapacitation and eventual death typically by 4 years of age.

This result has been reviewed and approved by [redacted]

Test Information

i1: Ashkenazi Jewish Diseases, Interp

BACKGROUND INFORMATION: Ashkenazi Jewish Diseases, 16 Genes

OVERVIEW: This targeted panel detects 51 variants common in the Ashkenazi Jewish population associated with 16 disorders, including ABCC8-related hyperinsulinism, Bloom syndrome, Canavan disease, familial dysautonomia, Fanconi anemia group C, Gaucher disease, glycogen storage disease 1A, Joubert syndrome type 2, lipoamide dehydrogenase deficiency, maple syrup urine disease type 1B, mucolipidosis type IV, NEB-related nemaline myopathy, Niemann-Pick disease type A, Tay-Sachs disease, Usher syndrome type 1F and type 3.
INHERITANCE: Autosomal recessive.
CLINICAL SENSITIVITY: Among Ashkenazi Jewish individuals:

Test Information

i1: Ashkenazi Jewish Diseases, Interp

- 99 percent for Canavan disease, lipoamide dehydrogenase deficiency, familial dysautonomia, Fanconi anemia group C, glycogen storage disease type 1A, Joubert syndrome type 2, maple syrup urine disease type 1B, and NEB-related nemaline myopathy
- 98 percent for Usher syndrome type 3
- 97 percent for ABCC8-related hyperinsulinism and Bloom syndrome
- 95 percent for mucolipidosis type IV
- 94 percent for Tay-Sachs disease
- 90 percent for Gaucher disease and Niemann-Pick disease type A
- 62 percent for Usher syndrome type 1F

METHODOLOGY: Polymerase chain reaction (PCR) and fluorescence monitoring. See table below for specific variants tested.
ANALYTICAL SENSITIVITY AND SPECIFICITY: 99 percent.
LIMITATIONS: Variants other than those tested on this panel will not be detected. Diagnostic errors can occur due to rare sequence variations.

DISEASE (GENE)	VARIANTS TESTED	ASHKENAZI DISEASE INCIDENCE	ASHKENAZI PRETEST CARRIER RISK	ASHKENAZI CARRIER RISK AFTER NEG RESULT
ABCC8-related hyperinsulinism (ABCC8)	p.F1388del (c.4163_4165del) p.V187D (c.560T>A) c.3992-9G>A	1/7,800	1/52	1/1,700
Bloom syndrome (BLM)	p.Y736Lfs (c.2207_2212delinsTAGATTC)	1/40,000	1/100	1/3,300
Canavan disease (ASPA)	c.433-2A>G p.Y231X (c.693C>A) p.E285A (c.854A>C) p.A305E (c.914C>A)	1/10,000	1/50	1/4,900
Familial dysautonomia (ELP1)	p.R696P (c.2087G>C) c.2204+6T>C	1/3,600	1/32	1/3,100

*=Abnormal, #=Corrected, C=Critical, f=Result Footnote, H-High, i-Test Information, L-Low, t-Interpretive Text, @=Performing lab

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Fanconi anemia group C (FANCC)	p.D23Ifs (c.67delG) c.456+4A>T	1/32,000	1/89	1/8,800
Gaucher disease (GBA)	p.L29Afs (c.84dupG) c.115+1G>A p.N409S (c.1226A>G) c.1263_1317del55 p.V433L (c.1297G>T) p.D448H (c.1342G>C) p.L483P (c.1448T>C) p.R535H (c.1604G>A)	1/900	1/15	1/141
Glycogen storage disease type 1A (G6PC)	p.Q27Rfs (c.79delC) p.R83H (c.248G>A) p.R83C (c.247C>T) p.Y128Tfs (c.379_380dupTA) p.G188R (c.562G>C) p.Q242X (c.724C>T) p.Q347X (c.1039C>T) p.G270V (c.809G>T) p.F327del (c.979_981delTTC)	1/20,000	1/71	1/7,000
Joubert syndrome type 2 (TMEM216)	p.R73L (c.218G>T)	1/34,000	1/92	1/9,100
Lipoamide dehydro-genase deficiency (DLD)	p.Y35X (c.104dupA) p.G229C (c.685G>T)	1/35,000	1/94	1/9,300
Maple syrup urine disease type 1B (BCKDHB)	p.R183P (c.548G>C) p.G278S (c.832G>A) p.E372X (c.1114G>T)	1/50,000	1/113	1/11,200
Mucolip-	c.406-2A>G	1/63,000	1/127	1/2,500

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idosis IV (MCOLN1)	g.511_6943del			
NEB-related nemaline myopathy (NEB)	exon 55 del (p.R2478_D2512del)	1/47,000	1/108	1/10,700
Niemann-Pick type-A disease (SMPD1)	p.L304P (c.911T>C) p.F333Sfs (c.996delC) p.R498L (c.1493G>T) p.R610del (c.1829_1831delGCC)	1/32,000	1/90	1/890
Tay-Sachs disease (HEXA)	7.6 kb del p.G269S (c.805G>A) c.1073+1G>A p.Y427Ifs (c.1274_1277dupTATC) c.1421+1G>C Pseudodeficiency alleles: p.R247W(c.739C>T) p.R249W (c.745C>T)	1/3,000	1/30	1/480
Usher syndrome type 1F (PCDH15)	p.R245X (c.733C>T)	1/20,500	1/72	1/190
Usher syndrome type 3 (CLRN1)	p.N48K (c.144T>G)	1/82,000	1/143	1/7,100

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the U.S. Food and Drug Administration. This test was performed in a CLIA-certified laboratory and is intended for clinical purposes.

Test Information

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Counseling and informed consent are recommended for genetic testing. Consent forms are available online.

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