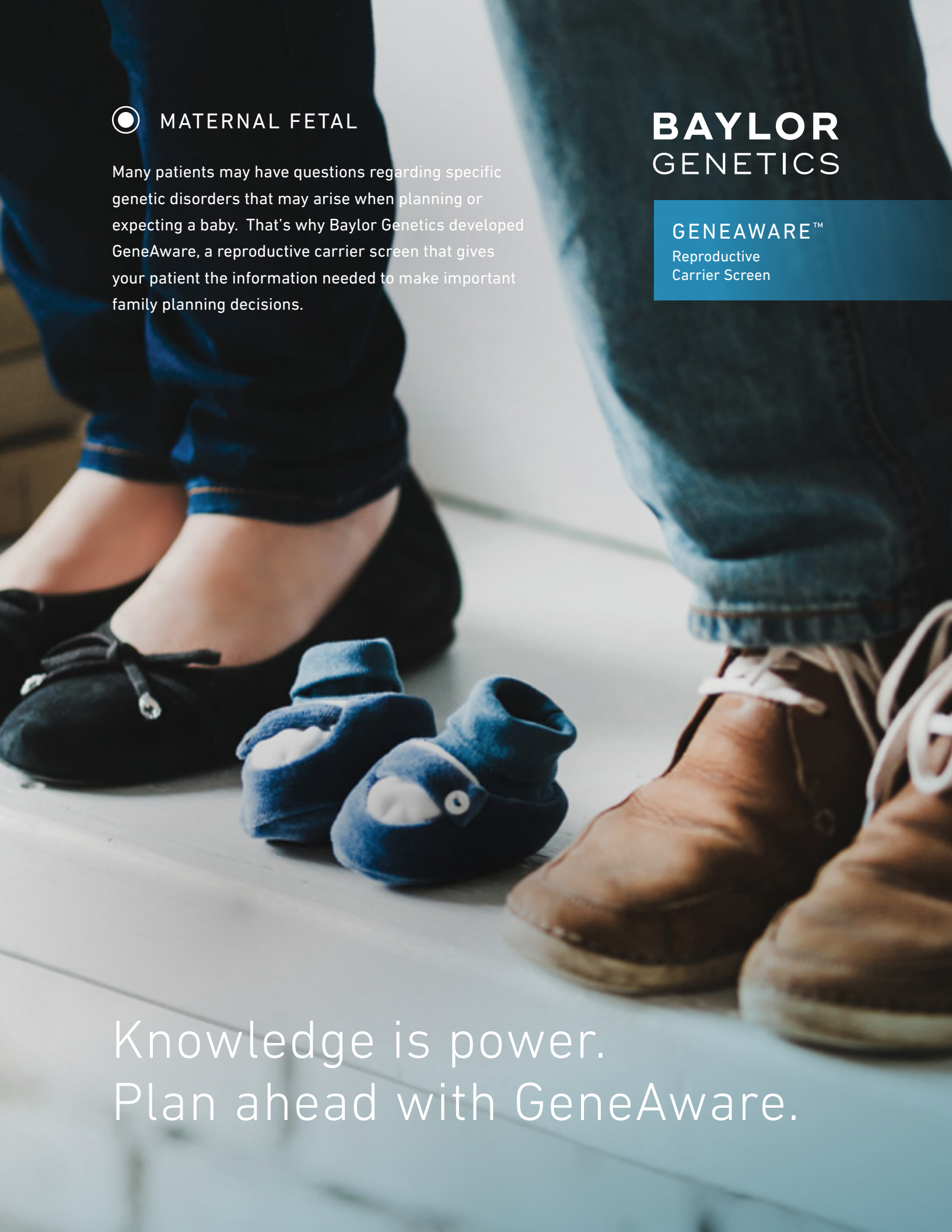


MATERNAL FETAL

Many patients may have questions regarding specific genetic disorders that may arise when planning or expecting a baby. That's why Baylor Genetics developed GeneAware, a reproductive carrier screen that gives your patient the information needed to make important family planning decisions.

BAYLOR GENETICS

GENEAWARE™
Reproductive
Carrier Screen

Knowledge is power.
Plan ahead with GeneAware.

Gain the knowledge needed to provide your patients empowered family planning decisions.

GeneAware is a reproductive carrier screen that analyzes small amounts of your patient's blood or saliva to reveal a world of medical knowledge that is beneficial for their family. Individuals and couples of reproductive age can have GeneAware testing to identify potential risks of having a child with a genetic condition.

We all have 23 pairs of chromosomes.

One pair of chromosomes determines our sex. The other 22 pairs of chromosomes are non-sex chromosomes and contain the rest of our genetic information. Every person has two copies of each gene in their body. Genes act like our body's instruction manual. Genes tell our cells what type of cell to be and what to do.

Below you will see the illustration of how DNA, genes, and chromosomes relate to each other in the coding of genetic information.

DNA

A LONG MOLECULE THAT ENCODES OUR GENETIC INFORMATION.

GENE

EACH CHROMOSOME IS MADE UP OF MANY GENES. EACH GENE, IN TURN, IS COMPRISED OF A REGION OF DNA.

CHROMOSOME

A STRUCTURE FOUND IN MOST LIVING CELLS THAT CARRY GENETIC INFORMATION IN THE FORM OF GENES.

Quick Facts

150+

GENES

GeneAware screens for disease-causing variants in over 150 genes by full gene sequencing

---

Four GeneAware Panel Options

ACMG & ACOG

DISORDERS RECOMMENDED BY THE ACMG & ACOG

ASHKENAZI JEWISH

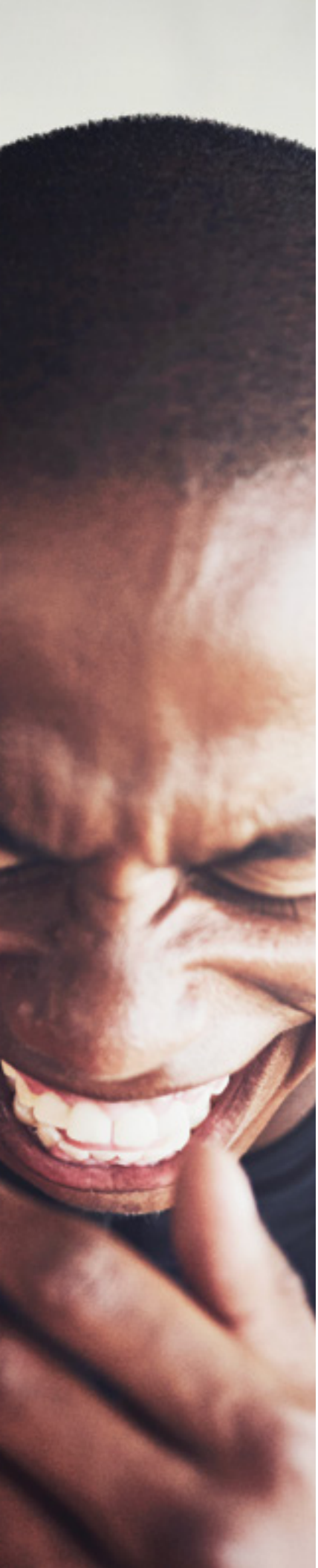
DISORDERS SPECIFIC FOR INDIVIDUALS OF ASHKENAZI JEWISH DESCENT

BASIC

THE MOST COMMONLY REQUESTED DISORDERS

COMPLETE

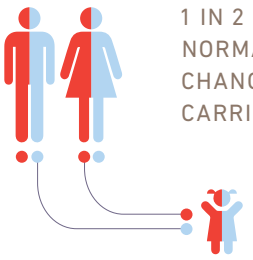
THE MOST COMPREHENSIVE SCREENING



Scientists can study a person's genes and identify changes in those genes.

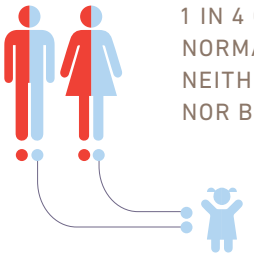
Some changes, known as pathogenic variants, are severe and cause genetic disorders. Many of these genetic changes are inherited. For the majority of conditions tested in GeneAware, both copies of the gene need to have a gene change to cause disease. Therefore, a person who has a gene change in one copy of the gene is a carrier and most likely does not have any symptoms of the disease. Below is an illustration of how a genetic condition can be inherited by the children of "carrier" parents.

When a mother or a father is a carrier, they could pass on the gene change to any of their children. Their children would only be at risk of having symptoms of the condition if both parents are carriers of the same condition. If both parents are carriers of the same genetic condition, the chances of passing on the gene change to their children are:



1 IN 2 CHANCE THAT A CHILD WILL INHERIT A NORMAL GENE FROM ONE PARENT AND THE GENE CHANGE FROM THE OTHER PARENT AND WILL BE A CARRIER OF THE GENETIC CONDITION.

50%



1 IN 4 CHANCE THAT A CHILD WILL INHERIT THE NORMAL GENE FROM BOTH MOM AND DAD AND WILL NEITHER BE A CARRIER OF THE GENETIC CONDITION NOR BE AFFECTED BY THE CONDITION.

25%

1 IN 4 CHANCE THAT A CHILD WILL INHERIT THE GENE CHANGE, FROM BOTH MOM AND DAD, AND WILL BE AFFECTED BY THE CONDITION.

25%

If a woman is a carrier of an X-linked condition, each later child is at increased risk for this condition (50% risk of inheriting the gene change).

Understanding the Results

Positive (Carrier)
One or more condition-causing gene change(s) was detected in the genes included in GeneAware. If your partner was not tested he or she should be tested to determine carrier status.

Negative
No known condition-causing gene change was detected in the genes included in GeneAware.

Test Codes

60101	Female Complete
60201	Female Ashkenazi Jewish
60301	Female ACMG & ACOG
60401	Female Basic
60106	Male Complete
60206	Male Ashkenazi Jewish
60306	Male ACMG & ACOG
60406	Male Basic

How it Works

1. Order appropriate testing for your patient.
2. The patient's sample is collected.
3. The patient's sample is sent to Baylor Genetics.
4. 14 CALENDAR DAYS — Results are sent to the physician.
5. Discuss the results with the patient.
6. More questions? Please contact us by calling 1.800.411.4363.

40 YEARS OF INNOVATION

4 MILLION+ CLINICAL TESTS PERFORMED

1 MILLION+ FAMILIES HELPED

3 THOUSAND+ TESTS OFFERED

1 MISSION IMPROVE HEALTHCARE THROUGH GENETICS

Baylor Genetics pioneered the history of genetic testing. Now, we're leading the way in precision medicine.

Baylor Genetics is a joint venture of Miraca Holdings, Inc. and Baylor College of Medicine, including the #1NIH funded Department of Molecular and Human Genetics. A pioneer of precision medicine for nearly 40 years, Baylor Genetics now offers a full spectrum of clinically relevant genetic testing, access to world-renowned experts, and the confidence to provide patients with the best care.

1.800.411.4363
BAYLORGENETICS.COM

BAYLOR GENETICS

09.27.18

GeneAware Genes List

GeneAware Reproductive Carrier Screen

BAYLOR GENETICS

GeneAware is a reproductive carrier screen that detects disease-causing variants in over 150 genes by full gene sequencing, supplemented with copy number analysis for genes with frequent deletions and Fragile X triplet repeat analysis.

These pathogenic variants are associated with serious disorders such as Duchenne muscular dystrophy, alpha-thalassemia, and MECP2 duplication syndrome, which may not be routinely included in other carrier testing panels. The risk for carrying certain genetic conditions varies from patient to patient based on several factors. Because of this diversity, we offer four different GeneAware panels to better meet the needs of your patients. All individuals are screened for cystic fibrosis and spinal muscular atrophy in all four panel options. Females are screened for X-linked Duchenne and Becker muscular dystrophies and Fragile-X syndrome in all four panel options.

ACMG AND ACOG	Disorders recommended for screening by the ACMG and ACOG
ASHKENAZI JEWISH	Disorders specific for individuals of Ashkenazi Jewish descent
BASIC	The most commonly requested disorders
COMPLETE	The most comprehensive screening

KEY

C	Copy number analysis	S	Full Sequencing Analysis	‡	SMA Silent Carrier Analysis
CGG	CGG Repeat Analysis	*	Females Only		

ACMG AND ACOG

Alpha-Thalassemia (HBA1 and HBA2)	C	S
Beta-Hemoglobinopathies (Beta-Thalassemia and Sickle Cell Disease, HBB)	C	S
Bloom Syndrome (BLM)		S
Canavan Disease (ASPA)		S
Cystic Fibrosis (CFTR)	C	S
Duchenne/Becker Muscular Dystrophy (DMD) *	C	S
Familial Dysautonomia (IKBKAP)		S

Fanconi Anemia (FANCC)		S
Fragile-X Syndrome (FMR1) *	CGG	
Gaucher Disease (GBA)		S
Mucolipidosis IV (MCOLN1)	C	S
Niemann-Pick Disease, Type A (SMPD1)		S
Spinal Muscular Atrophy (SMN1) ‡	C	
Tay-Sachs Disease (HEXA)	C	S

BASIC

Alpha-Thalassemia (HBA1 and HBA2)	C	S
Beta-Hemoglobinopathies (Beta-Thalassemia and Sickle Cell Disease, HBB)	C	S
Cystic Fibrosis (CFTR)	C	S
Duchenne/Becker Muscular Dystrophy (DMD) *	C	S
Fragile-X Syndrome (FMR1) *	CGG	
Spinal Muscular Atrophy (SMN1) ‡	C	

ASHKENAZI JEWISH

3-Phosphoglycerate Dehydrogenase Deficiency (PHGDH)		S
Abetalipoproteinaemia (MTTP)		S
Alport Syndrome (COL4A3)		S
Arthrogryposis, Mental Retardataion and Seizures (SLC35A3)		S
Autosomal Recessive Polycystic Kidney Disease (PKHD1)		S
Bardet-Biedl Syndrome: BBS2 Related (BBS2)		S
Bloom Syndrome (BLM)		S
Canavan Disease (ASPA)		S
Carnitine Palmitoyltransferase II Deficiency (CPT2)		S
Congenital Amegakaryocytic Thrombocytopenia (MPL)		S
Congenital Disorder of Glycosylation: Type 1A: PMM2 Related (PMM2)		S
Cystic Fibrosis (CFTR)	C	S
Dihydrolipoamide Dehydrogenase Deficiency (DLD)		S
Duchenne/Becker Muscular Dystrophy (DMD) *	C	S
Dyskeratosis Congenita (RTEL1)		S
Ehlers-Danlos Syndrome VIIc (ADAMTS2)		S
Familial Dysautonomia (IKBKAP)		S
Familial Hyperinsulinism (ABCC8)		S
Fanconi Anemia (FANCC)		S
Fragile-X Syndrome (FMR1) *	CGG	
Fukuyama Congenital Muscular Dystrophy/Walker-Warburg Congenital Muscular Dystrophy (FKTN)		S
Galactosemia (GALT)	C	S
Gaucher Disease (GBA)		S
Glycogen Storage Disease: Type IA (G6PC)		S
Joubert Syndrome, TMEM216 Related (TMEM216)		S
Maple Syrup Urine Disease: Type 1B (BCKDHB)		S
Mucolipidosis IV (MCOLN1)	C	S
Multiple Sulphatase Deficiency (SUMF1)		S
Nemaline Myopathy: NEB Related (NEB)	C	
Niemann-Pick Disease, Type A (SMPD1)		S
Retinitis Pigmentosa, Autosomal Recessive (DHDDS)		S
Smith-Lemli-Opitz Syndrome (DHCR7)		S
Spinal Muscular Atrophy (SMN1) ‡	C	
Tay-Sachs Disease (HEXA)	C	S
Tyrosinemia: Type I (FAH)		S
Usher Syndrome: Type 1F (PCDH15)		S
Usher Syndrome: Type 3A (CLRN1)		S
Wilson Disease (ATP7B)		S
Zellweger Spectrum Disorders: PEX2 Related (PEX2)		S

COMPLETE

3-Hydroxy-3-Methylglutaryl CoA Lyase Deficiency (HMGCL)		S
3-Phosphoglycerate Dehydrogenase Deficiency (PHGDH)		S
Abetalipoproteinaemia (MTTP)		S
Adenosine Deaminase Deficiency (ADA)		S
Adrenoleukodystrophy (ABCD1) *		S
Agammaglobulinemia, X-linked 1 (BTK) *		S
Alpha-1-Antitrypsin Deficiency (SERPINA1)		S
Alpha-Mannosidosis (MAN2B1)		S
Alpha-Thalassemia (HBA1 and HBA2)	C	S
Alport Syndrome (COL4A3)		S
Angelman Syndrome (UBE3A)		S
Argininosuccinate Lyase Deficiency (ASL)		S
Arthrogryposis, Mental Retardataion and Seizures (SLC35A3)		S
Aspartylglucosaminuria (AGA)		S
Ataxia with Vitamin E Deficiency (TTPA)		S
Ataxia-Telangiectasia (ATM)		S
Atelosteogenesis Type 2 (SLC26A2)		S
Autosomal Recessive Congenital Ichthyosis, TGM1 Related (TGM1)		S
Autosomal Recessive Polycystic Kidney Disease (PKHD1)		S
Autosomal Recessive Spastic Ataxia of Charlevoix-Saguenay (SACS)		S
Bardet-Biedl Syndrome: BBS1 Related (BBS1)		S
Bardet-Biedl Syndrome: BBS10 Related (BBS10)		S
Bardet-Biedl Syndrome: BBS2 Related (BBS2)		S
Beta-Hemoglobinopathies (Beta-Thalassemia and Sickle Cell Disease, HBB)	C	S
BH4-Deficient Hyperphenylalaninemia A (PTS)		S
Biotinidase Deficiency (BTD)		S
Bloom Syndrome (BLM)		S
Canavan Disease (ASPA)		S
Carnitine Deficiency, Systemic Primary (SLC22A5)		S
Carnitine Palmitoyltransferase IA Deficiency (CPT1A)		S
Carnitine Palmitoyltransferase II Deficiency (CPT2)		S
Cartilage-Hair Hypoplasia (RMRP)		S
Cerebrotendinous Xanthomatosis (CYP27A1)		S
Chronic Granulomatous Disease, X-linked (CYBB) *		S
Citrin Deficiency (SLC25A13)		S
Citrullinemia Type 1 (ASS1)		S
Congenital Amegakaryocytic Thrombocytopenia (MPL)		S
Congenital Disorder of Glycosylation: Type 1A: PMM2 Related (PMM2)		S
Congenital Disorder of Glycosylation: Type 1B: MPI Related (MPI)		S
Congenital Myasthenic Syndrome, CHAT Related (CHAT)		S
Congenital Myasthenic Syndrome, CHRNE Related (CHRNE)		S
Congenital Myasthenic Syndrome, DOK7 Related (DOK7)		S
Congenital Myasthenic Syndrome, RAPSN Related (RAPSN)		S
Crigler-Najjar Syndrome (UGT1A1)		S
Cystic Fibrosis (CFTR)	C	S
Cystinosis (CTNS)	C	S
D-Bifunctional Protein Deficiency (HSD17B4)		S
Dihydrolipoamide Dehydrogenase Deficiency (DLD)		S
Dihydropyrimidine Dehydrogenase Deficiency (DPYD)		S
Duchenne/Becker Muscular Dystrophy (DMD) *	C	S
Dyskeratosis Congenita (RTEL1)		S
Ehlers-Danlos Syndrome VIIc (ADAMTS2)		S
Ethylmalonic Encephalopathy (ETHE1)		S
Familial Dysautonomia (IKBKAP)		S
Familial Hyperinsulinism (ABCC8)		S
Fanconi Anemia (FANCC)		S
Fragile-X Syndrome (FMR1) *	CGG	
Fukuyama Congenital Muscular Dystrophy/Walker-Warburg Congenital Muscular Dystrophy (FKTN)		S
Fumarase Hydratase Deficiency (FH)		S
Galactosemia (GALT)	C	S
Gaucher Disease (GBA)		S
Glucose-6-Phosphate Dehydrogenase Deficiency (G6PD) *		S
Glutaric Acidemia I (GCDH)		S
Glycine Encephalopathy (AMT)		S
Glycine Encephalopathy (GLDC)		S
Glycogen Storage Disease: Type IA (G6PC)		S
Glycogen Storage Disease: Type IB (SLC37A4)		S
Glycogen Storage Disease: Type II (Pompe Disease) (GAA)		S
Glycogen Storage Disease: Type III (AGL)		S
GM1-Gangliosidosis (GLB1)		S
GRACILE Syndrome (BCS1L)		S
Hereditary Fructose Intolerance (ALDOB)		S
Hereditary Motor and Sensory Neuropathy with Agenesis of the Corpus Callosum (SLC12A6)		S
Herlitz Junctional Epidermolysis Bullosa: LAMA3 Related (LAMA3)		S
Herlitz Junctional Epidermolysis Bullosa: LAMB3 Related (LAMB3)		S
Herlitz Junctional Epidermolysis Bullosa: LAMC2 Related (LAMC2)		S
Hermansky-Pudlak Syndrome: HPS3 Related (HPS3)		S
Homocystinuria Caused by Cystathionine Beta-Synthase Deficiency (CBS)		S
Hyperornithinemia-Hyperammonemia-Homocitrullinuria (HHH) Syndrome (SLC25A15)		S
Hypophosphatasia (ALPL)		S
Inclusion Body Myopathy: Type 2 (GNE)		S
Infantile Neuroaxonal Dystrophy 1 (PLA2G6)		S
Isovaleric Acidemia (IVD)		S

COMPLETE

Joubert Syndrome, TMEM216 Related (TMEM216)		S
Juvenile Nephronopthisis (NPHP1)	C	
Krabbe Disease (GALC)	C	S
Leigh Syndrome: French-Canadian Type (LRPPRC)		S
Leukoencephalopathy with Vanishing White Matter, EIF2B5 Related (EIF2B5)		S
Limb-Girdle Muscular Dystrophy, Type 2A (CAPN3)		S
Limb-Girdle Muscular Dystrophy, Type 2C (SGCG)		S
Limb-Girdle Muscular Dystrophy, Type 2D (SGCA)		S
Limb-Girdle Muscular Dystrophy, Type 2E (SGCB)		S
Long Chain 3-Hydroxyacyl-CoA Dehydrogenase Deficiency (HADHA)		S
Lowe Syndrome (OCRL) *		S
Lysinuric Protein Intolerance (SLC7A7)		S
Maple Syrup Urine Disease: Type 1A (BCKDHA)		S
Maple Syrup Urine Disease: Type 1B (BCKDHB)		S
Maple Syrup Urine Disease: Type II (DBT)		S
MECP2 Duplication Syndrome (MECP2) *	C	
Medium Chain Acyl-CoA Dehydrogenase Deficiency (ACADM)		S
Megalencephalic Leukoencephalopathy with Subcortical Cysts, MLC1 Related (MLC1)		S
Metachromatic Leukodystrophy (ARSA)		S
Methylmalonic Aciduria and Homocystinuria: Type cblC (MMACHC)		S
Mucolipidosis II (GNPTAB)		S
Mucolipidosis IV (MCOLN1)	C	S
Mucopolysaccharidosis, Type I (IDUA)		S
Mucopolysaccharidosis, Type IIIA (Sanfilippo Syndrome A) (SGSH)		S
Multiple Sulphatase Deficiency (SUMF1)		S
Muscle-Eye-Brain Disease (POMGNT1)		S
Nemaline Myopathy: NEB Related (NEB)	C	
Nephrotic Syndrome: Type 1 (NPHS1)		S
Nephrotic Syndrome: Type 2 (NPHS2)		S
Neuronal Ceroid Lipofuscinosis, CLN3 Related (CLN3)	C	
Neuronal Ceroid Lipofuscinosis, CLN5 Related (CLN5)		S
Neuronal Ceroid Lipofuscinosis, CLN6 Related (CLN6)		S
Neuronal Ceroid Lipofuscinosis, CLN8 Related (CLN8)		S
Neuronal Ceroid Lipofuscinosis, PPT1 Related (PPT1)		S
Neuronal Ceroid Lipofuscinosis, TPP1 Related (TPP1)		S
Niemann-Pick Disease, Type A (SMPD1)		S
Niemann-Pick Disease, Type C (NPC1)		S
Nijmegen Breakage Syndrome (NBN)		S
Nonsyndromic Hearing Loss and Deafness: GJB2 Related DFNB1 (GJB2)		S
Nonsyndromic Hearing Loss and Deafness: GJB6 Related DFNB1 (GJB6)	C	
Ornithine Transcarbamylase Deficiency (OTC) *		S
Pendred Syndrome (SLC26A4)		S
Phenylalanine Hydroxylase Deficiency (PAH)		S
POLG-Related Disorders (POLG)		S
Primary Congenital Glaucoma (CYP1B1)		S
Primary Hyperoxaluria: Type 1 (AGXT)		S
Primary Hyperoxaluria: Type 2 (GRHPR)		S
PROP1-Related Combined Pituitary Hormone Deficiency (PROP1)		S
Propionic Acidemia, PCCA Related (PCCA)		S
Propionic Acidemia, PCCB Related (PCCB)		S
Pycnodysostosis (CTSK)		S
Pyruvate Carboxylase Deficiency (PC)		S
Retinitis Pigmentosa, Autosomal Recessive (DHDDS)		S
Rhizomelic Chondrodysplasia Punctata: Type I (PEX7)		S
Salla Disease (SLC17A5)		S
Sandhoff Disease (HEXB)		S
Severe Combined Immunodeficiency, Athabascan Type (DCLRE1C)		S
Severe Combined Immunodeficiency, X-linked (IL2RG) *		S
Sjogren-Larsson Syndrome (ALDH3A2)		S
Smith-Lemli-Opitz Syndrome (DHCR7)		S
Spinal Muscular Atrophy (SMN1) ‡	C	
Tay-Sachs Disease (HEXA)	C	S
Tyrosine Hydroxylase Deficiency (TH)		S
Tyrosinemia: Type I (FAH)		S
Usher Syndrome: Type 1B (MYO7A)		S
Usher Syndrome: Type 1C (USH1C)		S
Usher Syndrome: Type 1D (CDH23)		S
Usher Syndrome: Type 1F (PCDH15)		S
Usher Syndrome: Type 2A (USH2A)		S
Usher Syndrome: Type 3A (CLRN1)		S
Very Long-Chain Acyl-CoA Dehydrogenase Deficiency (ACADVL)		S
Wilson Disease (ATP7B)		S
Wiskott-Aldrich Syndrome (WAS)		S
Zellweger Spectrum Disorders: PEX1 Related (PEX1)		S
Zellweger Spectrum Disorders: PEX2 Related (PEX2)		S