

# Genes and medications analyzed by the CBR Landscape™ genetic test



by CooperSurgical®

CBR Landscape™ analyzes 1,500+ genes and is one of the most comprehensive pediatric health screenings available. Also includes pharmacogenetic (PGx) testing, which helps determine how a child's genetic make-up influences their body's response to 100+ medications.<sup>1</sup>

## GENES TESTED



### Blood

ABCG8, ACTN1, ACVRL1, ADAMTS13, AMN, ANK1, ANKRD26, ANO6, ATRX, CD36, CDAN1, CFH, CYCS, EGLN1, ELANE, ENG, EPAS1, EPB42, F10, F11, F12, F13A1, F13B, F2, F5, F7, F8, F9, FGG, FLI1, GATA1, GFI1B, GGCX, GP1BA, GP1BB, GP6, HAX1, HBA1, HBA2, HBB, HOXA11, HRG, ITGA2B, ITGB3, JAK2, KLKB1, KNG1, LMAN1, MASTL, MCFD2, MPL, NBEA, NBEAL2, P2RY12, PLA2G4A, PLAU, PROC, PROS1, PUS1, RASGRP2, RBM8A, RHAG, SEC23B, SERPINC1, SERPIND1, SERPINE1, SERPINF2, SLC4A1, SLFN14, SPTB, TBXA2R, TBXAS1, TF, THBD, THPO, TUBB1, VWF, WIPF1



### Cancer

ALK, APC, BAP1, BMPR1A, BRCA1, BRCA2, BRIP1, BUB1B, CDC73, CDKN1C, CEBPA, COL7A1, DDB2, DICER1, DIS3L2, EPCAM, ERCC2, ERCC3, ERCC4, ERCC5, ETV6, EXT1, EXT2, FANCA, FANCB, FANCC, FANCD2, FANCE, FANCF, FANCG, FANCI, FANCL, FH, GATA2, KIF1B, MAX, MEN1, MLH1, MRE11, MSH2, MSH6, MUTYH, NF1, NF2, PALB2, PAX5, PHOX2B, PIK3CA, PMS2, POLH, PRKAR1A, PTCH1, PTCH2, PTEN, RAD50, RAD51C, RB1, RET, RUNX1, SAMD9, SDHAF2, SDHB, SDHC, SDHD, SLX4, SMAD4, SMARCA4, SMARCB1, SMARCE1, SRP72, STK11, SUFU, TMEM127, TP53, VHL, WRN, WT1, XPA, XPC



### Cardio

ABCC9, ACTA2, ACTC1, ACVR2B, AHI1, AKAP9, AKT3, ARL13B, ARL6, ARMC4, B9D1, B9D2, BAG3, BBIP1, BBS1, BBS10, BBS12, BBS2, BBS4, BBS5, BBS7, BBS9, BRAF, C8orf37, CACNA1C, CACNB2, CALM1, CALM2, CALM3, CASQ2, CAV3, CBL, CC2D2A, CCDC103, CCDC114, CCDC151, CCDC28B, CCDC39, CCDC40, CCDC65, CCNO, CEP104, CEP290, CFAP298, CFAP53, CHD7, CITED2, COL3A1, CPLANE1, CREBBP, CRELD1, CTNNA3, DES, DHCR7, DMD, DNAAF1, DNAAF2, DNAAF3, DNAAF4, DNAAF5, DNAH11, DNAH5, DNAI1, DNAI2, DNAL1, DRC1, DSC2, DSG2, DSP, DTNA, ELN, EMD, ESCO2, EVC, EVC2, FBN1, FHL1, FLNA, FLNC, FOXF1, FOXH1, GAS8, GATA4, GATA6, GDF1, GJA5, GPC3, GPD1L, GYG1, HAND1, HCN4, HRAS, HYDIN, HYLS1, INPP5E, JAG1, JUP, KAT6B, KCNA5, KCND3, KCNE2, KCNE3, KCNH2, KCNJ2, KCNJ5, KCNK3, KCNQ1, KDM6A, KIF7, KMT2D, KRAS, LDB3, LEFTY2, LIFR, LMNA, LRRC6, LZTFL1, LZTR1, MAP2K1, MAP2K2, MCIDAS, MED13L, MEGF8, MID1, MKKS, MKS1, MMP21, MYBPC3, MYH11, MYH6, MYH7, MYL2, MYL3, NEK8, NKX2-5, NKX2-6, NME8, NODAL, NOTCH1, NPHP1, NPHP3, NPPA, NR2F2, NRAS, NSD1, OFD1, PIH1D3, PIK3R2, PKP2, PLN, PRKAG2, PTPN11, RAB23, RAF1, RAI1, RASA1, RBM10, RBM20, RIT1, RPGRIPL, RSPH1, RSPH3, RSPH4A, RSPH9, RYR2, SCN10A, SCN1B, SCN2B, SCN3B, SCN4B, SCN5A, SCN9A, SDCCAG8, SEMA3E, SHOC2, SLC2A10, SMAD3, SMAD6, SNTA1, SOS1, SOS2, SPAG1, SPRED1, TAB2, TAZ, TBX1, TBX20, TBX5, TCTN1, TCTN2, TCTN3, TGFB3, TGFB1, TGFB2, TLL1, TMEM138, TMEM216, TMEM231, TMEM237, TMEM43, TMEM67, TNNC1, TNNI3, TNNT2, TPM1, TRDN, TRIM32, TRIM37, TRPM4, TTC8, TTN, TTR, WDPCP, ZFPM2, ZIC3, ZMYND10



### Epilepsy

ADGRG1, ADRA2B, ALDH3A2, ALDH7A1, AP1S2, ASAH1, ATP13A2, CACNA2D1, CLP1, CNTNAP2, CRADD, CUL4B, DCX, DEPDC5, DHCHR24, DPYD, EIF2B1, EIF2B2, EIF2B3, EIF2B4, EIF2B5, ERCC6, ERCC8, ETHE1, EXOSC3, HCN1, ITPA, KCNJ1, KCNQ2, KCNQ3, KCNT1, KCTD7, KDM5C, MECP2, MED17, MLC1, OPHN1, PAK3, PCDH19, PGK1, PIGA, PIGN, PLP1, PNPO, PRICKLE1, PRRT2, RARS2, ROGD1, SCN1A, SCN2A, SCN8A, SEPSECS, SLC12A1, SLC19A3, SLC1A4, SLC35A3, SLC6A19, SLC6A8, STXB1, SUOX, SYN1, TRPM6, TSC1, TSC2, TSEN2, TSEN34, TSEN54, VPS13A, VPS53, VRK1

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## GENES TESTED



### Hearing Loss

ABHD12, ACTB, ACTG1, ADCY1, ADGRV1, AIFM1, ALMS1, AMMECR1, ATP6V1B1, BCS1L, BDP1, BSND, CABP2, CACNA1D, CATSPER2, CCDC50, CDC42, CDH23, CEACAM16, CHSY1, CIB2, CISD2, CLDN14, CLIC5, CLPP, CLRN1, COCH, COL11A1, COL11A2, COL27A1, COL2A1, COL4A6, COL9A1, COL9A2, COL9A3, CRYL1, CRYM, DCAF17, DCDC2, DDX11, DIABLO, DIAPH1, DIAPH3, DNMT1, DSPP, EDN3, EDNRB, ELMOD3, EPS8, ERBB3, ESPN, ESRRB, EYA1, EYA4, FGF3, FGFR1, FGFR2, FOXI1, FRAS1, FREM2, GATA3, GIPC3, GJA1, GJB2, GJB3, GJB6, GPSM2, GRHL2, GRXCR1, GRXCR2, GSDME, HARS, HARS2, HGF, HOMER2, HOXB1, HSD17B4, ILDR1, KARS, KCNE1, KCNJ10, KCNQ4, KITLG, LARS2, LHFPL5, LOXHD1, LRP2, LRTOMT, MARVELD2, MET, MIR96, MITF, MSRB3, MYH14, MYH9, MYO15A, MYO1C, MYO3A, MYO6, MYO7A, NARS2, NDP, NLRP3, OSBPL2, OTOA, OTOF, OTOG, OTOGL, P2RX2, PAX3, PCDH15, PDZD7, PEX1, PEX6, PJVK, PMP22, PNPT1, POLR1C, POLR1D, POU3F4, POU4F3, PRPS1, PTPRQ, RDX, RIPOR2, SERPINB6, SIX1, SIX5, SLC17A8, SLC19A2, SLC26A4, SLC26A5, SLC4A11, SLC52A2, SLC52A3, SLITRK6, SMPX, SNAI2, SOX10, STRC, SYNE4, TBC1D24, TBL1X, TCOF1, TECTA, TFAP2A, TIMM8A, TJP2, TMC1, TMEM132E, TMIE, TMPRSS3, TNC, TPRN, TRIOBP, TSPEAR, TYR, USH1C, USH1G, USH2A, WFS1, WHRN



### Immunodeficiency

ACP5, ADA, ADA2, ADAR, AICDA, AIRE, AK2, ANTXR2, AP1S3, ATM, B2M, BLM, BLNK, BTK, C1QA, C1QB, C1QC, C1S, C3, C5, C6, C7, C8A, C9, CARD11, CARD14, CARD9, CASP10, CASP8, CAVIN1, CCBE1, CD19, CD247, CD27, CD3D, CD3E, CD3G, CD40, CD40LG, CD59, CD79A, CD79B, CD8A, CDCA7, CEBPE, CENPF, CFD, CFI, CFP, CLCN7, CLEC7A, COG6, COLEC11, CORO1A, CR2, CSF2RA, CSF2RB, CSF3R, CTC1, CTLA4, CTSC, CXCR4, CYBA, CYBB, DCLRE1C, DDX58, DGKE, DHFR, DKC1, DNASE1L3, DNMT3B, DOCK8, EXTL3, FAS, FASLG, FAT4, FERMT3, FGA, FGB, FOXN1, FOXP3, G6PC3, GF11, GP9, GTF2H5, HELLS, ICOS, IFIH1, IFNAR2, IFNGR1, IFNGR2, IGLL1, IKBKB, IL10, IL10RA, IL10RB, IL12RB1, IL17RA, IL1RN, IL21R, IL2RA, IL2RG, IL36RN, IL7R, IRAK4, IRF8, ITCH, ITGAM, ITGB2, ITK, JAK3, LCK, LIG1, LIG4, LPIN2, LRBA, LRRC8A, LYST, MAGT1, MALT1, MASP1, MASP2, MCM4, MKL1, MLPH, MPO, MS4A1, MTHFD1, MYD88, MYO5A, NBAS, NBN, NCF2, NCF4, NCSTN, NFKB2, NFKBIA, NHEJ1, NHP2, NLRP4, NLRP1, NLRP12, NOD2, ORAI1, OSTM1, PEPD, PGM3, PIK3CD, PIK3R1, PLCG2, PLG, PNP, POLE, PRF1, PRKCD, PRKDC, PSENEN, PSMB8, PSTPIP1, PTPRC, RAB27A, RAC2, RAG1, RAG2, RANBP2, RASGRP1, RBCK1, RECQL4, RFX5, RFXANK, RFXAP, RMRP, RNASEH2A, RNASEH2B, RNASEH2C, RNF168, RPL11, RPL35A, RPL5, RPS10, RPS17, RPS19, RPS24, RPS26, RPS7, RTEL1, SAMHD1, SBDS, SERPING1, SH2D1A, SH3BP2, SKIV2L, SLC26A3, SLC29A3, SLC46A1, SMARCA1, SNX10, SP110, SPINK5, STAT1, STAT3, STAT5B, STIM1, STK4, STX11, STXBP2, TBK1, TCF3, TERC, TERT, TFRC, TINF2, TLR3, TMC6, TMC8, TMEM173, TNFRSF11A, TNFRSF13B, TNFRSF13C, TNFRSF1A, TNFSF11, TRAF3IP2, TREX1, TRNT1, TTC37, TTC7A, TYK2, UNC119, UNC13D, UNG, USB1, VPS13B, VPS45, WAS, WRAP53, XIAP, XK, ZAP70, ZBTB24



### Metabolic

AAAS, ABCA3, ABCC8, ABCD1, ABCD4, ABCG5, ACAD8, ACAD9, ACADM, ACADS, ACADSB, ACADVL, ACAT1, ACOX1, ACSF3, ADK, AGL, AGXT, AHCY, AIMP1, AKR1D1, ALDH4A1, ALDOB, ALG1, ALG12, ALG3, ALG6, ALPL, AMT, AP1S1, APOPT1, AQP2, AR, ARG1, ARSA, ARSB, ASL, ASNS, ASPA, ASS1, ATP7A, ATP7B, AVPR2, BCHE, BCKDHA, BCKDHB, BTBD9, C19orf12, CASR, CBS, CCDC8, CIITA, CLCF1, CLCN5, CLCNKB, CLN3, CLN5, CLN6, CLN8, COQ4, COX10, COX15, COX20, COX6B1, CPS1, CPT1A, CPT2, CTNS, CTSA, CTSD, CTSF, CYP11A1, CYP11B1, CYP11B2, CYP17A1, CYP21A2, CYP27A1, CYP27B1, DBT, DDC, DGUOK, DLAT, DLD, DOLK, DUOX2, DUOX2A2, ETFA, ETFB, ETFDH, FAH, FBP1, FBXL4, FMO3, FOLR1, FOXRED1, FTCD, FUCA1, G6PC, G6PD, GAA, GALC, GALE, GALK1, GALNS, GALNT3, GALT, GAMT, GATM, GBA, GBE1, GCDH, GCH1, GFM1, GHR, GHRHR, GLA, GLB1, GLDC, GLUD1, GNPTAB, GNPTG, GNRHR, GNS, GRHPR, GSS, GUSB, GYS2, HADH, HADHA, HADHB, HAMP, HCFC1, HEXA, HEXB, HFE, HGD, HGSNAT, HJV, HLCS, HMGCL, HMGCS2, HNF4A, HOGA1, HPD, HSD17B10, HSD17B3, HSD3B2, HSD3B7, HYAL1, IDS, IDUA, IGSF1, INS, INVS, IVD, IYD, KCNJ11, LAMP2, LDLR, LHCGR, LHX3, LIPA, LMBRD1, LPL, LRPPRC, MAN2B1, MANBA, MAT1A, MC2R, MCCC1, MCCC2, MCEE, MCOLN1, MFSD8, MLYCD, MMAA, MMAB, MMACHC, MMADHC, MOGS, MPI, MPV17, MTHFR, MTR, MTRR, MTPP, MUT, MVK, NAGLU, NAGS, NDUFA11, NDUFAF2, NDUFAF5, NDUFS4, NDUFS6, NDUFS7, NDUFV1, NEU1, NGLY1, NPC1, NPC2, NROB1, OCRL, OPA3, OTC, PAH, PAX8, PC, PCBD1, PCCA, PCCB, PDHA1, PDHB, PDHX, PDP1, PET100, PEX10, PEX11B, PEX12, PEX13, PEX14, PEX16, PEX19, PEX2, PEX26, PEX3, PEX5, PFKM, PHEX, PHGDH, PHKA1, PHKA2, PHKB, PHKG2, PHYH, PKLR, PMM2, POLG, POR, POU1F1, PPT1, PROP1, PSAP, PTS, PYGL, PYGM, QDPR, SARS2, SCNN1A, SCNN1B, SCO1, SCO2, SDHA, SGSH, SLC17A5, SLC22A5, SLC25A13, SLC25A15, SLC25A20, SLC2A1, SLC34A3, SLC35A1, SLC35C1, SLC37A4, SLC39A4, SLC3A1, SLC5A5, SLC7A7, SLC7A9, SMPD1, SPR, SRD5A2, STAR, SUCLA2, SUMF1, SURF1, TAT, TBCE, TBX19, TCN2, TFR2, TG, TH, THRA, TK2, TMEM70, TPO, TPP1, TRHR, TRMU, TSFM, TSHB, TSHR, TWNK, TYMP, UGT1A1, VDR

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## GENES TESTED



### MODY & Neonatal Disorder

AKT2, BLK, CEL, CP, EIF2AK3, GCK, GLIS3, HNF1A, HNF1B, IER3IP1, INSR, KLF11, NEUROD1, NEUROG3, PAX4, PDX1, PPARG, PTF1A, RFX6, SLC16A1, SLC2A2, UCP2, ZFP57



### Vision Loss

ABCA4, ABCC6, ACBD5, ACO2, ADAM9, ADAMTS18, AIPL1, AMACR, AMPD2, AP3B1, AP3D1, ARL2BP, ARL3, ATF6, BCOR, BEST1, BLOC1S3, BLOC1S6, C12orf65, C1QTNF5, C2orf71, CA2, CABP4, CACNA1F, CACNA2D4, CDH3, CDHR1, CERKL, CHM, CHMP1A, CHST6, CNGA1, CNGA3, CNGB1, CNGB3, CNNM4, CRB1, CRX, CTNNA1, CTNNB1, CWC27, CYP1B1, CYP4V2, DHDDS, DHX38, DNAJC5, DRAM2, DTNBP1, EFEMP1, ELOVL4, EMC1, EYS, FAM126A, FAM161A, FKRP, FKTN, FLVCR1, FOXC1, FSCN2, FZD4, GDF6, GNAT1, GNAT2, GNB3, GPR143, GPR179, GRK1, GRM6, GRN, GUCA1A, GUCA1B, GUCY2D, HK1, HMCN1, HMX1, HPS1, HPS3, HPS4, HPS5, HPS6, IDH3B, IFT140, IFT172, IMPDH1, IMPG2, IQCB1, ITM2B, KCNV2, KIZ, KLHL7, LAMA1, LCA5, LRAT, LRIT3, MAK, MERTK, MFN2, MFRP, MYOC, NAGA, NEK2, NMNAT1, NPHP4, NR2E3, NR2F1, NRL, NYX, OAT, OCA2, OPA1, OPTN, OTX2, PANK2, PAX2, PAX6, PDE6A, PDE6B, PDE6C, PDE6G, PDE6H, PITPNM3, PITX2, PLA2G5, PLA2G6, PLK4, PNPLA6, POC1B, POMGNT1, POMT1, POMT2, PQBP1, PRCD, PRDM5, PROM1, PRPF3, PRPF31, PRPF4, PRPF6, PRPF8, PRPH2, RAB28, RAX, RAX2, RBP3, RBP4, RD3, RDH11, RDH12, RDH5, RGR, RGS9, RHO, RIMS1, RLBP1, ROM1, RP1, RP1L1, RP2, RP9, RPE65, RPGR, RPGRIP1, SAG, SEMA4A, SLC24A1, SLC45A2, SLC7A14, SNRNP200, SOX2, SPATA7, SPG11, ST3GAL5, TEAD1, TIMP3, TMEM126A, TOPORS, TRPM1, TSPAN12, TTC21B, TTL5, TUB, TUBGCP4, TUBGCP6, TULP1, TYRP1, VCAN, VSX2, WDR19, ZNF408, ZNF469, ZNF513



### Other

ABCA12, ABCB11, ABCB4, ADAMTS2, AFF2, AGA, AGPAT2, AGPS, ALOX12B, ALOXE3, AMH, AMHR2, ANKH, ANO10, ANO5, APOB, ARSE, ARX, ATP6V0A2, ATP6V0A4, ATP6V1E1, ATP8B1, BMP1, BMPER, BRWD3, C1R, CACNA1S, CAD, CANT1, CAPN3, CASP14, CC2D1A, CCDC88C, CEP152, CERS3, CFHR5, CFTR, CHAT, CHRNE, CHRNG, CLCN1, COASY, COL17A1, COL1A1, COL1A2, COL4A3, COL4A4, COL4A5, COLQ, CRLF1, CRTAP, CTSK, CUL7, CYP19A1, CYP4F22, CYP7B1, DDR2, DLG3, DLL3, DOK7, DYNC2H1, DYSF, EDA, EFEMP2, ELP1, FA2H, FGD1, FKBP10, FMR1, FTSJ1, FXN, GDAP1, GDF5, GFPT1, GJB1, GLE1, GNE, GNPAT, GORAB, GRIP1, HINT1, IGHMBP2, IL1RAPL1, ITGA6, ITGB4, KIF14, L1CAM, LAMA2, LAMA3, LAMB3, LAMC2, LARS, LDLRAP1, LIPN, LPAR6, LTBP4, MCPH1, MEFV, MESP2, MTM1, MTMR2, NDRG1, NEB, NIPAL4, NONO, NPHS1, NPHS2, NTRK1, OBSL1, P3H1, PCNT, PCSK9, PEX7, PHF8, PIP5K1C, PKD2, PKHD1, PLEKHG5, PLOD1, PLOD2, PNPLA1, POC1A, PPIB, PYCR1, RAPSN, RS1, RYR1, SACS, SDR9C7, SELENON, SERPINA1, SERPINF1, SGCA, SGCB, SGCD, SGCG, SH3TC2, SLC12A3, SLC12A6, SLC16A2, SLC26A2, SLC27A4, SMN1, SMN2, SNAP29, SPG21, SPG7, TCIRG1, TECPR2, TGM1, THOC2, TMEM38B, TNXB, TRAPPC11, TTPA, UPF3B, VLDLR, WISP3, WNT1, WNT10A, ZDHHC9, ZFYVE26, ZNF711

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## MEDICATIONS TESTED

Pharmacogenetic results are generally broken down into three categories based on the current available scientific evidence: actionable, informative, and standard precautions.

**“Actionable”** results may be used by the treating physician to adjust dosages or medications. (No adjustments should be made before consulting a physician.)

**“Informative”** results have implications for the patient’s metabolism of certain drugs; however, no actionable guidelines are currently associated with them.

**“Standard precautions”** means that at the time of testing, the results did not indicate any implications for the patient’s metabolism of that drug, and therefore standard precautions should be taken.

### Anesthesiology

Desflurane, Enflurane, Halothane, Isoflurane, Methoxyflurane, Mivacurium, Sevoflurane, Succinylcholine

### Cardiology

Acenocoumarol, Atorvastatin, Clopidogrel, Flecainide, Fluvastatin, Lovastatin, Metoprolol, Pitavastatin, Pravastatin, Propafenone, Rosuvastatin, Simvastatin, Warfarin

### Gastroenterology

Dexlansoprazole, Lansoprazole, Omeprazole, Pantoprazole, Rabeprazole

### Gynecology

Flibanserin

### Immunology

Azathioprine, Siponimod, Tacrolimus

### Infectious Disease

Abacavir, Atazanavir, Efavirenz, Isoniazid, Nevirapine, Peginterferon Alfa-2A, Peginterferon Alfa-2B, Ribavirin, Voriconazole

### Neurology

Amifampridine, Amifampridine Phosphate, Brivaracetam, Carbamazepine, Clobazam, Deutetrabenazine, Fosphenytoin, Oxcarbazepine, Phenytoin, Tetrabenazine, Valbenazine

### Oncology

Belinostat, Belzutifan, Capecitabine, Dronabinol, Erdafitinib, Fluorouracil, Gefitinib, Irinotecan, Mercaptopurine, Metoclopramide, Ondansetron, Rasburicase, Sacituzumab Govitecan-hziy, Tamoxifen, Tegafur, Thioguanine, Tropicisetron

### Pain Management

Celecoxib, Codeine, Flurbiprofen, Hydrocodone, Ibuprofen, Lofexidine, Lornoxicam, Meloxicam, Methadone, Oliceridine, Piroxicam, Tenoxicam, Tramadol

### Psychiatry

Amitriptyline, Aripiprazole, Aripiprazole Lauroxil, Atomoxetine, Brexpiprazole, Bupropion, Citalopram, Clomipramine, Clozapine, Desipramine, Doxepin, Escitalopram, Fluvoxamine, Haloperidol, Iloperidone, Imipramine, Nortriptyline, Paroxetine, Pimozide, Risperidone, Sertraline, Thioridazine, Trimipramine, Venlafaxine, Vortioxetine, Zuclopenthixol

### Other

Eliglustat, Meclizine, Pitolisant