

FOR PHYSICIANS

# Nurture Genomics Fact Sheet

## What is Nurture?

Nurture's screening service provides medical services to seemingly healthy babies and children to identify those at an increased risk for an actionable genetic condition early in life to allow for proactive medical management.

Here is what's included:

- Whole genome sequencing for expertly curated, targeted analysis of over 400 genes associated with actionable pediatric-onset conditions.
- An at-home sample collection using a gentle and non-invasive cheek swab.
- Easy-to-interpret test results include clear, evidence based insights and recommendations.
- Genetic counseling before and after testing.
- Peer-to-peer consults between Nurture genetic counselors and primary clinicians.
- Recommendations for local specialists (as needed).
- Access to the child's whole genome for reanalysis (as needed).

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## Who is Nurture For?

Nurture is suitable for any family that wants to screen their healthy newborns and children for genetic risk factors for pediatric-onset conditions. (See our complete gene list on page 3.)

Nurture's panel has been curated to include genes which cause conditions that manifest in early childhood. While newborns and infants are expected to receive the greatest benefit, Nurture's service is open to anyone under the age of 18.

Nurture is designed to be used in addition to routine state newborn screening. Nurture is not suitable for indication-based testing.

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## Why Screen using Nurture?

With rapid advances in science, there are now hundreds of actionable, childhood-onset conditions where early intervention can have a meaningful impact on patient outcomes. While state newborn screen programs have expanded, states currently only screen between 31 and 77 conditions. Among patients who are not identified through these state programs, the diagnostic odyssey takes an average of five years or more.

Nurture is working to expand on the life changing impact that state newborn screening has had by giving parents and primary clinicians a roadmap to over 400 conditions, ensuring patients with actionable genetic conditions are provided every opportunity for the best health outcomes.

## How are Parents and Providers Supported?

Nurture’s clinical team helps caregivers and providers navigate their genomic journey from beginning to end. Parents have access to our medical team to get questions answered so they can make an informed decision about testing. Our service includes optional telehealth services to explain test results, clarify next steps, and connect them with medical specialists, as appropriate. Pediatricians receive screening results directly and in the event of a positive result, information about the condition and recommended next steps for further evaluation and care. Primary clinicians always have access to Nurture’s genetic counselors and rare disease specialists to support them throughout their patient’s journey.

## How is Nurture ordered?

Parents place orders directly for Nurture’s screening service on our website at **nurturegenomics.com**. Our physicians review and authorize these orders before sequencing begins. Please note: Insurance does not typically cover genomic screening of apparently healthy children.

## Specifications

<b>Test:</b> Whole Genome Sequencing (WGS)	<b>Specimen Type:</b> Buccal/Cheek
<b>Coverage:</b> 90%+ at $\geq 20x$ (mean $\geq 30x$ )	<b>Turnaround Time:</b> ~4-6 Weeks
<b>Report:</b> Pathogenic and Likely Pathogenic Variants in Targeted Gene List	<b>Analysis:</b> Broad Clinical Labs of MIT and Harvard, a CLIA/CAP Genetics Lab

### Data Security:

Genomic data is stored by our partner Broad Clinical Labs. Broad is experienced with handling large volumes of sensitive patient data. They have completed sequencing on half a million whole genome samples and counting. The systems used to host genomic data at the Broad meet the highest rigorous information security standards to achieve compliance with industry-accepted general security and privacy frameworks.

### Key Test Limitations:

- Genetic screening cannot identify all possible health conditions a child may develop in the future.
- Some health conditions are not genetic, and some conditions may not be detected by the selected test(s).
- Variants of uncertain significance (VUS) will not be reported. Variant classifications are updated over time such that variant calls are only accurate at time of release.
- Technical limitations may prevent accurate detection of some genetic results.
- In some cases, additional testing to confirm the results may be recommended.

## List of Genes included in Nurture Genomics’ Screening Panel for Actionable, Childhood-Onset Conditions

AAAS	BTD	CYP7B1	G6PC3	IGF1	MRAP	PMM2	SAMD9L	STAT5B
ABCC6	BTK	DCLRE1C	G6PD	IKBKB	MTHFD1	PNP	SBDS	STK4
ABCC8	CA2	DDC	GAA	IKZF1	MTHFR	PNPO	SFTPC	STX11
ABCD1	CA5A	DGAT1	GALC	IL21	MTR	POMC	SGPL1	STXBP2
ABCD4	CACNA1D	DHCR7	GALE	IL2RA	MTRR	POU1F1	SH2D1A	SUFU
ACAD8	CARD11	DHFR	GALK1	IRAK4	MTPP	PRDX1	SLC12A1	TAFAZZIN
ACAD9	CASQ2	DICER1	GALM	ITGB2	MYD88	PRF1	SLC12A3	TAT
ACADM	CBS	DKC1	GALNS	ITK	MYSM1	PRKDC	SLC16A1	TBX19
ACADVL	CD27	DLAT	GALT	IVD	NAGLU	PROP1	SLC19A1	TCF3
ACAT1	CD40	DLD	GAMT	JAGN1	NAGS	PTCH1	SLC19A2	TCIRG1
ADA	CD40LG	DMD	GATA1	KCNJ1	NBN	PTF1A	SLC19A3	TCN2
ADA2	CD70	DNAJC21	GATA6	KCNJ11	NCF1	PTS	SLC22A5	TERC
ADAMTS13	CD79A	DOCK2	GATM	KCNJ5	NCF2	PYGL	SLC25A13	TGFBR1
AGL	CD79B	DOCK8	GBA	KCNQ2	NCF4	QDPR	SLC25A15	TGFBR2
AGPAT2	CFTR	DOK7	GCDH	LAMTOR2	NEUROG3	RAB27A	SLC25A19	TH
AICDA	CHAT	DPAGT1	GCK	LDLR	NFKB2	RAD51C	SLC25A20	TINF2
AK2	CHRNA1	ECHS1	GFI1	LDLRAP1	NLRC4	RAG2	SLC26A3	TK2
AKR1D1	CIITA	EFL1	GFPT1	LEP	NNT	RB1	SLC2A1	TMEM165
ALAS2	CLCNKB	ELANE	GGCX	LHX3	NPC1	RET	SLC30A10	TNFRSF11A
ALDH5A1	COL3A1	ENPP1	GH1	LHX4	NPC2	RFWD3	SLC34A3	TNFRSF13B
ALDOB	COQ2	ERCC4	GHR	LIG4	NR5A1	RFX5	SLC35A2	TP53
ALG14	COQ4	ETFDH	GHRHR	LIPA	OAT	RFXANK	SLC35C1	TPK1
ALG2	COQ5	F13A1	GLA	LMBRD1	OTC	RFXAP	SLC37A4	TPP1
ALPL	COQ6	F13B	GLUD1	LMNA	OXCT1	RNPC3	SLC39A14	TRDN
AP3B1	COQ7	F9	GRHPR	LPL	PAH	RPE65	SLC39A4	TRMU
APC	COQ8A	FAH	GUSB	LRBA	PALB2	RPL11	SLC39A8	TRNT1
APOB	COQ8B	FANCA	HADHA	LYST	PCCA	RPL15	SLC46A1	TRPM6
AQP2	COQ9	FANCB	HADHB	MAD2L2	PCCB	RPL18	SLC4A1	TSR2
ARG1	CORO1A	FANCC	HAX1	MAGED2	PCSK9	RPL26	SLC4A4	TTC7A
ARSA	CP	FANCD2	HBB	MAGT1	PDHA1	RPL27	SLC52A2	TTPA
ARSB	CPS1	FANCE	HESX1	MAN2B1	PDHB	RPL35	SLC52A3	UBE2T
ASL	CPT1A	FANCF	HGSNAT	MC2R	PDHX	RPL35A	SLC5A1	UMPS
ASS1	CPT2	FANCG	HLCS	MCCC1	PDP1	RPL5	SLC5A6	UNC13D
ATP6V0A4	CSF3R	FANCI	HMBS	MCCC2	PDSS1	RPS10	SLC6A8	UNG
ATP6V1B1	CTNS	FANCL	HMGCL	MCEE	PDSS2	RPS15A	SLC7A7	VDR
ATP7A	CYBA	FBP1	HNF1A	MECOM	PGM1	RPS17	SLC9A3	VKORC1
ATP7B	CYBB	FECH	HNF1B	MECP2	PGM3	RPS19	SLX4	VPS45
AUH	CYBC1	FERMT3	HNF4A	MLYCD	PHEX	RPS24	SMAD3	WAS
AVPR2	CYP11A1	FGA	HOGA1	MMAA	PHKA2	RPS26	SMN1	WDR1
BCKDHA	CYP11B1	FGB	HOXA11	MMAB	PHKB	RPS27	SMPD1	WDR72
BCKDHB	CYP11B2	FGG	HPD	MMACHC	PHKG2	RPS28	SNX10	WFS1
BCKDK	CYP17A1	FLAD1	HSD11B2	MMADHC	PIK3R1	RPS29	SOX3	WIPF1
BLNK	CYP21A2	FOLR1	HSD3B2	MMUT	PKD1	RPS7	SP110	WT1
BRIP1	CYP27A1	FOXN1	HSD3B7	MOCS1	PKHD1	RTEL1	SPR	XIAP
BSCL2	CYP27B1	FOXP3	IDS	MPI	PKLR	RYR2	SRP54	ZAP70
BSND	CYP2R1	G6PC	IDUA	MPL	PLPBP	SAMD9	STAR	