

2024 REGISTRY REPORT

A report on birth defects and developmental disabilities in 6588 children reported to the National Birth Defect Registry founded and operated by Birth Defect Research for Children



From the National
Birth Defect Registry



**BIRTH DEFECT RESEARCH
FOR CHILDREN, INC**

Report

National Birth Defect Registry

May 2024

- **Purpose:** The National Birth Defect Registry, established in 1990, collects data on various birth defects (both structural and functional) and gathers information about preconceptional and prenatal health, genetic history, and exposure histories of parents.
- **Design and Evaluation:** An advisory board of seven prominent scientists from diverse fields, including obstetrics, genetics, epidemiology, and toxic exposures, designed and evaluated the project.
- **Data Collection:** Initially, 4000 parents filled out a 16-page booklet and mailed it to Birth Defect Research for Children. Later, the registry transitioned online, allowing parents to complete the questionnaire conveniently.
- **Improved Accuracy:** Online data entry ensures more accurate information, and the registry identifies patterns of similar birth defects related to common conditions or exposures during pregnancy or pre-conception.
- **Impact:** [Over 6,588 online case reports have been completed for children \(multiple children from the same family can be reported\)](#)¹.

¹For more details, you can refer to this slide presentation explaining the registry's operation and birth defect research conducted using registry data: https://birthdefects.org/wp-content/uploads/2014/02/niehs_pres.pdf

Results by Birth Defect

Birth Defect	Count
Allergies	1547
Motor Skills Delay	1329
Speech	1154
Reflux/GERD	1131
Depression	1114
Frequent Ear Infections	1057
Mood Swings	1029
Speech Delay	1008
Frequent Headaches	986

Anger	977
Anxiety Disorder	970
Asthma	960
Joint Pain	943
Frequent Upper Respiratory Infections	930
Math	895
Spelling/Writing	893
Muscle Pain/Weakness	849
Chronic Stomach Problems	795
Drug Reaction	774
Attention Deficit With Hyperactivity	773
Comprehension	762
Food Sensitivity	752
Eczema	745
Jaundice At Birth	737
Sleep Disorder	733
Language Processing	720
Scoliosis	715
Memory Problems	708
Hay Fever (Allergic Rhinitis)	674
Colic As Baby	667
Heart Murmur	665
Distractibility	635
Heat/Cold Sensitivity	620
Dyslexia/Reading	599
Attention Deficit Without Hyperactivity	578
Menstrual Problems	576
Obsessive/Compulsive	576
Abnormal Teeth	568

Chronic Fatigue Syndrome (ME/CFS)	535
Vision Defect	535
Seizure Disorder	497
Light Sensitivity	469
Retardation	468
Acne-Like Rash	455
Astigmatism	443
Partial Hearing Loss	443
Frequent Urinary Tract Infections	430
Unexplained Fevers	423
Sensory Integration Dysfunction	410
Hives	386
Ovarian Cyst	377
Anemia	370
Arthritis	361
Auditory Processing Deficit	355
Cleft Palate	354
Gastroschisis	344
Hypotonia (Floppy Muscles)	344
Malformed Fingers, Hands Or Arms	341
Strawberry Birth Mark	338
Apnea	311
Hair Loss	302
Muscle (Absent Or Underdeveloped)	302
Amblyopia (Lazy Eye)	301
Malformed Toes, Feet Or Legs	296
Thyroid Defect	291
Undescended Testicles	287
Latex	285

Malformations Of Vertebrae	283
Clubfoot	276
Autoimmune Disorder	275
Bi-Polar	272
Frequent Nose Bleeds	265
Frequent Pneumonia	265
Visual Memory Deficits	263
High Arched Palate	261
Postural Orthostatic Tachycardia Syndrome	258
Hydrocephalus	256
Ventricular Septal Defect	255
Autism	249
Walks On Tiptoes	246
Chronic Tinnitus (Ringing In Ears)	233
External Ear Or Ears (Absent or Malformed)	230
Breaks Law/Rules Of Society	228
Hypertension	228
Atrial Septal Defect	227
Cerebral Palsy	223
Reduction Deformity Upper Limb	222
Facial Asymmetry	221
Lung (Absent Or Underdeveloped)	221
Cleft Lip	216
Strabismus	216
Spina Bifida	215
Micrognathia (Small Jaw)	212
Oppositional Defiant Disorder	212
Dislocated Hip/Hip Dysplasia	207
Immune Deficiency	202

Infertility	201
Diabetes	193
Early Puberty	191
Psoriasis	191
Migraines	190
Low Set Ears	187
Chiari Malformation	186
Endometriosis	186
Tethered Spinal Cord	180
Rib Abnormality	178
Cafe Au Lait Birth Mark	172
Microcephaly	169
Vitiligo	168
Changes In Skin Color	166
Umbilical Hernia	165
Borderline Personality Disorder	164
Syndactyly (Webbed Fingers Or Toes)	163
Diaphragmatic Hernia	162
Swollen/Or Bleeding Gums	160
Irritable Bowel Syndrome	157
Manic Depression	157
Tracheoesophageal Fistula/Esophageal Atresia	156
Skin Fungus	153
Thrush/Chronic Candida	153
Hiatal Hernia	151
Neurogenic Bladder	149
Reduction Deformity Lower Limb	146
Delayed Puberty	142
Hypoactivity	141

Early Tooth Eruption	138
Internal Ear Or Ears (Absent or Malformed)	138
Cardiac Arrhythmia	137
Dysmorphic Features	136
Absence Corpus Callosum	132
Chromosome Disorder	132
Imperforate Anus	132
Deafness	129
Hypoglycemia	129
Perseveration	128
Contractures Of Elbows/Knees/Joints	126
Malformed Ureter	124
Rheumatoid Arthritis	123
Bony Defect Of Skull	120
Constitutional Short Stature	116
Inguinal Hernia	116
Absent Kidney	115
Malformed Kidney	115
Pectus Excavatum	115
In Utero Growth Retardation	114
Facial Bone Deformity	111
Hypospadias	109
Patent Ductus Arteriosus	108
Small Sex Organs	108
Nystagmus	105
Malformed Sex Organs	104
Asperger	103
Hemangioma	103
Spina Bifida Occulta	103

Fibromyalgia	102
Anencephaly	100
Craniosynostosis	100
Ear Tag(S)	100
Clubfoot With Bone Deformity	99
Apraxia	98
PDD (Pervasive Development Disorder)	98
Vater (Vacterl)	98
Ganglion Cyst	95
Goldenhar (Hemifacial Microsomia)	95
Pectoralis (Absent Or Underdeveloped)	92
Blind	91
Chronic Virus	90
Sensorineural Hearing Loss	89
Growth Hormone Deficiency	87
Mitral Valve Prolapse	87
Lipoma	84
Aortic Valve Stenosis/Atresia	83
Polycystic Ovarian Syndrome	83
Cataract	82
Liver Function Disorder	81
Neurogenic Bowel	81
Port Wine Stain	81
Brain Cyst	79
Pulmonary Valve Stenosis/Atresia	79
MCS (Multiple Chemical Sensitivity)	78
Hypoplastic Left Heart Syndrome	75
Optic Nerve Atrophy	74
Pituitary Defect	74

Twisted Lower Limb	74
Hypothyroidism	73
Fibroids/Fibroid Tumors	70
Coarctation Of Aorta	69
Prune Belly	68
Pigeon Chest	67
Poland's	67
Pulmonary Hypertension	66
Tetralogy Of Fallot	66
Polydactyly (Extra Digits)	64
Down	63
Facial Nerve Paralysis	63
Transposition Great Arteries	63
Anorexia Or Bulimia	62
Rectal And/Or Intestinal Atresia	62
Broncho-pulmonary Dysplasia	60
Schizophrenia	60
Aphasia	57
Coloboma	56
Amniotic Band	55
Bicuspid Aortic Valve	55
Pyloric Stenosis	55
Hepatomegaly (Enlarged Liver)	54
Pierre Robin	53
Thin Corpus Callosum	53
Single Umbilical Artery	52
Cortical Blindness	51
Mitral Valve Regurgitation	51
Hydrocele	50

Microphthalmia	50
Spondylolisthesis	50
Encephalocele	49
Polycystic Kidney	49
Absent Gallbladder	48
Bradycardia	48
Spinal Stenosis	48
Clubbed Hands	45
Constipation/Chronic Constipation	45
Glaucoma	44
Other Birthmark	44
Crohn's Disease	43
Ehlers-Danlos	43
Ptosis	43
Trisomy	42
Hirschsprung's Disease	40
Holoprosencephaly	39
Bladder Exstrophy	38
Dermoid Cysts	38
Exotropia	38
Primary Immune Defect	38
Thyroid Cancer	38
Horseshoe Kidney	37
Leukemia	37
Macrocephaly	37
Syringomyelia	37
Omphalocele	36
Arthrogyrosis	35
Cystic Hygroma	34

Pulmonary Atresia/Hypoplasia	34
Ataxia	33
Cardiomyopathy	33
Hashimoto's Disease	33
Pulmonary Artery Anomaly	33
Failure to Thrive	32
Hypertelorism	32
Sacral Agenesis	32
Short Bowel	32
Spinal Muscular Atrophy	32
Dextrocardia	31
Diabetes Insipidus	31
Neurofibromatosis	31
Pilonidal Cyst	31
Dysthymia	30
Lupus	30
Muscular Dystrophy	30
Overgrowth Of Lower Limb	30
Spondylosis	30
Dandy Walker Malformation	29
Tourettes'	29
Splenomegaly (Enlarged Spleen)	28
Intrauterine Stroke	27
Macroglossia	27
Septo-Optic Dysplasia	27
Ankyloglossia (Tongue Tied)	25
Cardiomegaly	25
Schizencephaly	25
Bicornuate Uterus	24

Clinodactyly	24
Double Outlet Right Ventricle	24
Interstitial Cystitis	24
Tricuspid Valve Stenosis/Atresia	24
Absence Of Septum Pellucidum	23
Hypogammaglobulinemia	23
Multiple Sclerosis	23
Preauricular Pits	23
Ambiguous Genitalia	21
Chondromalacia Patella	21
Psoriatic Arthritis	21
Sarcoma	21
Cerebellar Hypoplasia	20
Delayed Myelination	20
Digeorge	20
Mitral Valve Stenosis	20
Twisted Upper Limb	20
Celiac's Disease	19
Choanal Atresia	19
Hypoplastic Right Heart Syndrome	19
Lipomyelomeningocele	19
Overgrowth Of Upper Limb	19
Absent Bladder	18
Endocardial Cushion Defect	18
Potter	18
Pseudotumor Cerebri	18
Wolff-Parkinson-White	18
Anophthalmia (Missing Eye)	17
Cloacal Anomaly	17

Hydronephrosis	17
Malrotation of the Intestines	17
Cavernous Hemangioma	16
Edwards (Trisomy 18)	16
Fibular Hemimelia	16
Neuroblastoma	16
Neuropathy	16
Overgrowth (Giant)	16
Temporomandibular Joint Disorder (TMJ)	16
Biliary Atresia	15
Charge	15
Epispadias	15
Klippel-Feil	15
Lissencephaly	15
Lordosis	15
Peripheral Pulmonary Stenosis	15
Teratomas	15
Vascular Ring	15
Breast Cancer	14
Ebstein Anomaly	14
Hemihypertrophy	14
Osteogenesis Imperfecta	14
Patent Foramen Ovale (PFO)	14
Turner's	14
Colpocephaly	13
Graves Disease	13
Hypertonia	13
Kyphosis	13
Lymphangioma	13

Static Encephalopathy	13
Achondroplastic Dwarfism	12
Caudal Regression	12
CMV Virus	12
Lymphoma	12
Moebius	12
Non-Hodgkins Lymphoma	12
Periventricular Leukomalacia	12
Sacral Dimple	12
Spastic Paralysis	12
Tracheomalacia	12
Cholesterol High	11
Congenital Cystic Adenomatoid Malformation/CPAM	11
Gall Stones	11
Hydranencephaly	11
Macrostomia	11
PDD/NOS	11
Raynaud's Phenomenon	11
Tachycardia	11
Truncus Arteriosus	11
Von Willebrand Disease	11
Absent Uterus/Mayer-Rokitansky-Kuster-Hauser	10
Cervical Cancer	10
Colitis/Ulcerative Colitis	10
Degenerative Disc Disease	10
Hodgkins Disease	10
Torticollis	10
Cystic Fibrosis	9
Diarrhea/Chronic Diarrhea	9

Hemimegalencephaly	9
Williams	9
Adams-Oliver Syndrome	8
Addison's	8
Cushing	8
Duane Refraction	8
Hyperpigmentation Of Gums	8
Klippel-Trenaunay-Weber	8
Noonan	8
Stickler	8
Tar	8
Treacher Collins	8
Tuberous Sclerosis	8
Absent Spleen	7
Arteriovenous Malformation	7
Astrocytoma	7
Beckwith-Wiedemann	7
Brain or CNS	7
Cloacal Exstrophy	7
Fragile X	7
Klinefelter	7
Lamellar Ichthyosis	7
Nail-Patella	7
Polymicrogyria	7
Polysplenia	7
Porencephaly	7
Prader-Willi	7
Albinism	6
Angelman	6

Apert	6
Congestive Heart Failure	6
Cornelia De Lange	6
Crouzon	6
Fetal Alcohol Syndrome	6
Lennox-Gastaut	6
Marfan	6
Smith-Lemli-Opitz	6
Ankylosing Spondylitis	5
Barrett's Esophagus	5
Colon Cancer	5
Exophthalmos	5
Gastroparesis	5
Holt-Oram	5
Leukodystrophy	5
Malposition of the Heart	5
Medullary Sponge Kidney	5
Osteoporosis	5
Rett	5
Alagille	4
Anorchia (Absence Of Testes)	4
Ectodermal Dysplasia	4
Myoblastoma	4
Sids	4
Aicardi	3
Fetal Hydantoin	3
Fetal Valproate	3
Horner	3
Orofacialdigital	3

Retinoblastoma	3
Sturge-Weber	3
Browns Vertical Retraction	2
Cri Du Chat	2
Kabuki	2
Larsen	2
Soto	2
Alport	1
Aniridia	1
Cholesterol Low	1
Fryns	1
Hepatoblastoma	1
Hermaphrodite	1
Ivemark	1
Miller-Dieker	1
Rhabdomyosarcoma	1
Rubenstein-Taybi	1
Walker-Warburg	1
Wilms Tumor	1

Results by Category

Birth Defect Category	Count
Miscellaneous	2999
Allergies	2679
Learning Disabilities	2307
Gastrointestinal	2306
Immune Response Disorders	2097
Emotional/Behavioral	2067
Developmental Delay	1783
Skin	1719
Central Nervous System	1640
Cranial/Facial	1556
Cardiovascular	1530
Attention Deficit/Activity Disorders	1518
Eye	1454
Limb Defects	1371
Spine	1084
Syndromes	1067
Muscle	1036
Ear	1027
Genitourinary	955
Endocrine	924
Liver/Bile Duct/Spleen	873
Chest	563
Cysts	538
Autistic Spectrum Disorders	374
Tumors-Benign	352
Growth Disorders	345
Cancer	175

Results by Location (Gestational)

Location	Count
California	466
Florida	387
Texas	371
New York	341
Ohio	335
Not Provided	307
Illinois	264
Michigan	254
New Jersey	246
Pennsylvania	236
Virginia	183
North Carolina	170
Georgia	159
Indiana	148
Massachusetts	142
Missouri	140
Other/Non-US	146
Tennessee	120
Washington	120
Kentucky	116
Maryland	113
Minnesota	109
Wisconsin	108
Arizona	91
Alabama	90
Colorado	90
Louisiana	90

South Carolina	83
Kansas	81
Arkansas	78
Oklahoma	77
Oregon	77
Iowa	73
West Virginia	65
Connecticut	50
Nebraska	48
Utah	47
Montana	38
Mississippi	37
Idaho	35
Maine	35
Nevada	34
New Mexico	33
South Dakota	29
New Hampshire	26
Alaska	24
North Dakota	24
Hawai'i	23
Rhode Island	21
Delaware	20
Armed Forces AE	16
Vermont	14
Wyoming	12
Puerto Rico	7
Armed Forces AP	6
Armed Forces AA	4

District of Columbia	4
Guam	2
Federated States of Micronesia	1
Northern Mariana Islands	1
Palau	1
Virgin Islands	1