

## 2021 Type and Severity Summary of Identified Cases of Hearing Loss

**Data Source:** 2021 CDC Early Hearing Detection and Intervention (EHDI) Hearing Screening & Follow-up Survey (HSFS)

**Background:** CDC's National Center on Birth Defects and Developmental Disabilities promotes the health of babies, children, and adults, with a focus on preventing birth defects and developmental disabilities and optimizing the health outcomes of people with disabilities. As part of these efforts, the center is actively involved in addressing the early identification of permanent hearing loss among newborns and infants.

Hearing loss affects between 1 and 2 per 1,000 infants in the United States and, when left undetected or untreated, can delay a child's speech and language, social, and emotional development.<sup>1</sup> To ensure children with permanent hearing loss are identified and receive services as soon after birth as possible, states and territories have implemented Early Hearing Detection and Intervention (EHDI) programs. These EHDI programs work to ensure all infants

- Are screened for hearing loss, by 1 month of age
- Receive diagnostic, audiologic evaluation (for those not passing the screening), by 3 months of age
- Are enrolled in early intervention (for those identified with permanent hearing loss), by 6 months of age<sup>2</sup>

The Hearing Screening & Follow-up Survey (HSFS) is a voluntary survey sent out annually by CDC to each jurisdictional EHDI program. It requests aggregated hearing information on infants born in a specified calendar year (e.g., 2021). The survey helps to assess the progress of EHDI efforts to identify infants with permanent hearing loss across the United States.

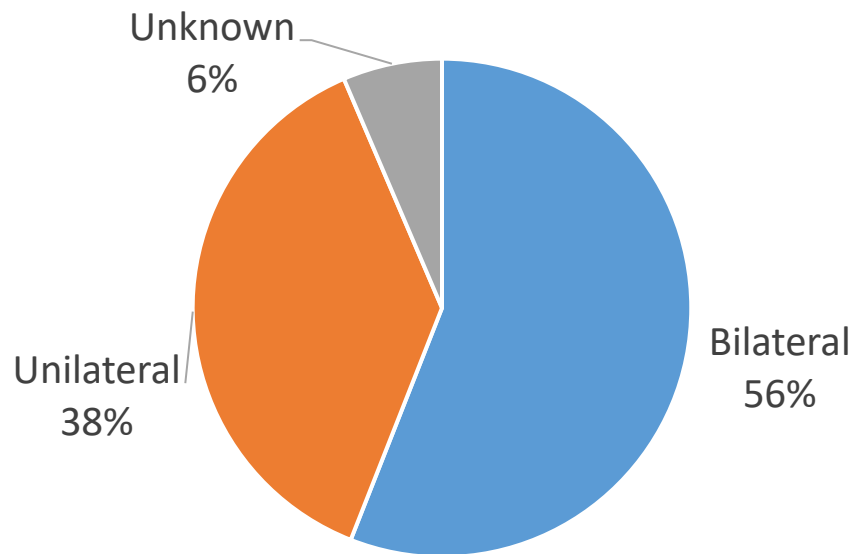
This summary highlights type, severity, and laterality of permanent hearing loss for babies born between January 1, 2021 and December 31, 2021. Categories of severity are based on the American Speech-Language-Hearing Association (ASHA) classification system for hearing loss. The ASHA categories are as follows:

Severity of Hearing Loss	ASHA Hearing Loss Range (dB HL)
Normal	-10 to 15
Slight	16 to 25
Mild	26 to 40
Moderate	41 to 55
Moderately severe	56 to 70
Severe	71 to 90
Profound	91+

**Number of Survey Respondents Who Provided Type and Severity Data:** 52<sup>a</sup> (48 states, 3 territories, 1 district) AK, AZ, AR, CA, CO, Commonwealth of the Northern Mariana Islands, CT, DE, District of Columbia, FL, GA, Guam, HI, ID, IL, IN, IA, KS, KY, LA, ME, MD, MA, MI, MN, MO, MT, NE, NV, NH, NJ, NM, NY, NC, ND, OH, OK, OR, PA, Puerto Rico, RI, SC, SD, TN, TX, UT, VT, VA, WA, WV, WI, WY

		<b>Total Number of Reported Infants with Hearing Loss, 2021 CDC EHDH HSFS</b>							<b>6,520 Children</b>
		<b>BILATERAL (by Ear)</b>				<b>UNILATERAL (by Ear)</b>			<b>LATERALITY UNKNOWN</b> <i>(i.e., unknown if case is a unilateral or bilateral loss)</i>
		<b>RIGHT EAR</b>	<b>LEFT EAR</b>	<b>UNKNOWN EAR</b> <i>(severity of loss for each ear)</i>		<b>RIGHT EAR</b>	<b>LEFT EAR</b>	<b>UNKNOWN EAR</b>	
<b>Sensorineural</b>	Slight	33	31	0	0	13	11	0	1
	Mild	595	592	0	0	98	106	0	0
	Moderate	697	681	0	0	90	114	0	2
	Moderately Severe	279	294	0	0	56	68	0	2
	Severe	242	240	0	0	85	80	0	2
	Profound	526	537	0	0	166	162	0	1
	Unknown Severity	62	69	0	0	23	20	0	70
<b>Conductive</b>	Slight	76	6	0	0	4	1	0	0
	Mild	70	62	0	0	33	33	0	0
	Moderate	92	90	0	0	100	68	0	1
	Moderately Severe	85	85	0	0	187	88	0	0
	Severe	34	30	0	0	47	41	0	1
	Unknown Severity	48	50	0	0	90	44	0	16
<b>Mixed</b>	Slight	1	4	0	0	1	0	0	0
	Mild	43	41	0	0	6	8	0	0
	Moderate	76	85	0	0	14	27	0	1
	Moderately Severe	81	85	0	0	27	25	0	1
	Severe	58	49	0	0	23	21	0	0
	Profound	24	33	0	0	11	7	0	0
	Unknown Severity	20	20	0	0	8	3	0	11
<b>Type Unknown</b>	Slight	13	16	0	0	5	11	0	0
	Mild	66	76	0	0	31	23	0	16
	Moderate	58	64	0	0	9	23	1	18
	Moderately Severe	27	36	0	0	16	18	0	3
	Severe	29	15	0	0	7	8	0	0
	Profound	31	31	0	0	6	7	0	6
	Unknown Severity	96	79	2	2	37	30	1	257
<b>Auditory Neuropathy</b>	Slight	1	0	0	0	0	0	0	0
	Mild	4	3	0	0	0	0	0	0
	Moderate	1	1	0	0	4	7	0	0
	Moderately Severe	4	2	0	0	0	2	0	0
	Severe	11	9	0	0	2	8	0	0
	Profound	20	21	0	0	17	19	0	0
	Unknown Severity	125	126	0	0	42	50	0	1
<b>Totals by Ear</b>		<b>3,559</b>	<b>3,563</b>	<b>2</b>	<b>2</b>	<b>1,258</b>	<b>1,133</b>	<b>2</b>	<b>410</b>
<b>Totals by Child</b>		<b>3,561</b>		<b>2</b>		<b>1,258</b>	<b>1,133</b>	<b>2</b>	<b>410</b>
<b>Laterality Totals (by Child)</b>		<b>3,563 Bilateral Cases</b>				<b>2,393 Unilateral Cases</b>			
<b>Total all Types and Severity (by Child)</b>									<b>6,366</b>
<b>Cases Resolved (i.e., hearing loss to no hearing loss)</b>									<b>154</b>
<b>Overall Total (by Child)</b>									<b>6,520</b>

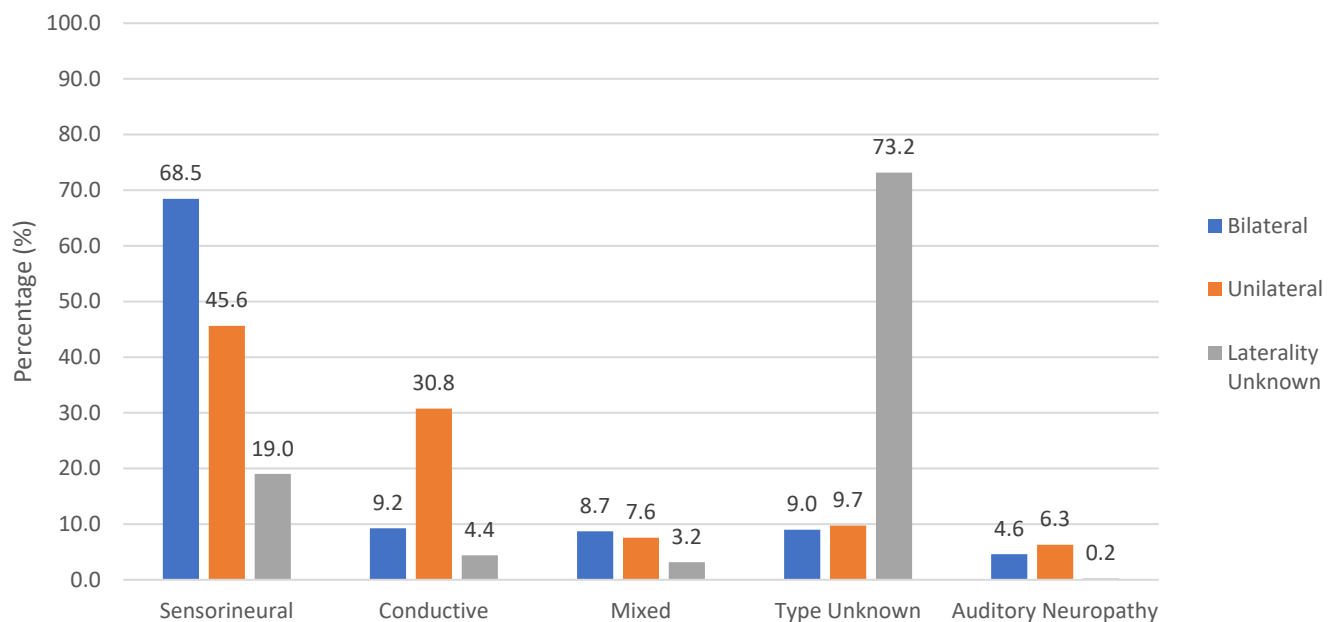
### Laterality of Hearing Loss (U.S., 2021) n=6,366\*



\*In 2021, 6,520 cases of permanent hearing loss were reported among 52 jurisdictions. However, 154 cases were determined to not have hearing loss.

	Numerator	Denominator	Percentage
Bilateral	3,563	6,366	56%
Unilateral	2,393	6,366	38%
Unknown	410	6,366	6%

### Type and Laterality of Hearing Loss, (U.S., 2021) n=6,366\*



\*In 2021, 6,520 cases of permanent hearing loss were reported among 52 jurisdictions. However, 154 cases were determined to not have hearing loss.

	Numerator	Denominator	Percentage
<b>Sensorineural</b>			
Bilateral	2,439	3,563	68.5%
Unilateral	1,092	2,393	45.6%
Unknown	78	410	19.0%
<b>Conductive</b>			
Bilateral	330	3,563	9.2%
Unilateral	736	2,393	30.8%
Unknown	18	410	4.4%
<b>Mixed</b>			
Bilateral	310	3,563	8.7%
Unilateral	181	2,393	7.6%
Unknown	13	410	3.2%
<b>Type Unknown</b>			
Bilateral	321	3,563	9.0%
Unilateral	233	2,393	9.7%
Unknown	300	410	73.2%
<b>Auditory Neuropathy</b>			
Bilateral	164	3,563	4.6%
Unilateral	151	2,393	6.3%
Unknown	1	410	0.2%

References:

<sup>1</sup>American Speech-Language-Hearing Association (ASHA). Effects of hearing loss on development. Available at: <https://www.asha.org/public/hearing/effects-of-hearing-loss-on-development>.

Accessed April 8, 2021

<sup>2</sup>Year 2019 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs (2019). *Journal of Early Hearing Detection and Intervention*, 4(2), 1-44.

<https://digitalcommons.usu.edu/jehdi/vol4/iss2/1/>