

UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF CALIFORNIA

Reyes v. Apple, Inc.

Reyes · No. 3:22-cv-02900-JSC · Decided April 28, 2025

SUMMARY

The United States District Court for the Northern District of California grants Apple’s motion to exclude plaintiffs’ causation expert, Dr. Yoav Hahn, and grants Apple’s motion for summary judgment in an AirPods-related personal injury and product liability action. The court concludes that plaintiffs failed to establish reliable general or specific causation for the alleged hearing injury from a brief 113.5-decibel Amber Alert delivered through AirPods Pro.

CASE DETAILS

COURT	United States District Court for the Northern District of California
WRITING FOR THE COURT	Jacqueline Scott Corley
JURISDICTION	United States District Court for the Northern District of California
DECIDED	April 28, 2025
DOCKET	3:22-cv-02900-JSC
DISPOSITION	other
PROCEDURAL POSTURE	Plaintiffs brought personal injury and product-defect claims arising from alleged hearing injuries caused by an Amber Alert played through Apple AirPods Pro. After discovery closed, Apple moved to exclude plaintiffs' causation expert under Federal Rule of Evidence 702 and for summary judgment. Plaintiffs moved for partial summary judgment on Apple's comparative-negligence affirmative defense.
STANDARD OF REVIEW	Summary judgment is appropriate when the evidence would not permit a reasonable trier of fact to find for the nonmoving party on an essential element. Expert testimony is admissible under Federal Rule of Evidence 702 only when the proponent establishes that the expert is qualified, the testimony will assist the trier of fact, the methodology is reliable, and the methodology has been reliably applied to the facts. The district court acts as a gatekeeper and evaluates relevance and reliability rather than simply accepting the expert's conclusions.
PRECEDENTIAL VALUE	unknown

PARTIES

Ariani Reyes, B.G. v. Apple, Inc.

TOPICS

products liability

expert testimony

daubert standard

summary judgment

personal injury

PRACTICE AREAS

products liability

personal injury

expert testimony

summary judgment

civil procedure

QUESTIONS PRESENTED

1. Whether Dr. Yoav Hahn's causation opinions were admissible under Federal Rule of Evidence 702 and Daubert.
2. Whether plaintiffs presented sufficient admissible evidence of general causation to show that a brief exposure to sound of no more than 113.5 decibels through AirPods Pro could cause the alleged hearing injury.
3. Whether plaintiffs presented sufficient admissible evidence of specific causation to show that the Amber Alert played through B.G.'s AirPods Pro actually caused his injuries.
4. Whether Apple was entitled to summary judgment on plaintiffs' negligence, strict-liability, breach-of-implied-warranty, and negligent-infliction-of-emotional-distress claims because plaintiffs lacked evidence of causation.
5. Whether plaintiffs' motion for partial summary judgment on Apple's comparative-negligence defense remained justiciable after summary judgment was granted for Apple on all claims.

HOLDINGS

1. Dr. Hahn was not qualified to offer a general-causation opinion regarding the sound level capable of causing the alleged hearing injury, and his opinion was not supported by reliable scientific methodology or objective evidence. His testimony was excluded under Federal Rule of Evidence 702 and Daubert.
2. Plaintiffs failed to present admissible evidence from which a reasonable trier of fact could find that a brief exposure to sound of no more than 113.5 decibels through an AirPods Pro earbud was capable of causing the alleged hearing injury. Because general causation was unsupported, Apple was entitled to summary judgment.
3. Plaintiffs failed to present admissible evidence from which a reasonable trier of fact could find that the Amber Alert played through B.G.'s AirPods Pro actually caused his injuries. Dr. Hahn's specific-causation opinion was unreliable because it depended on an unsupported differential diagnosis and failed to reliably rule out COVID-related viral labyrinthitis or other plausible causes.
4. Apple was entitled to summary judgment on all of plaintiffs' remaining claims because causation was an essential element of each claim and plaintiffs had no admissible evidence establishing either general or specific causation.

KEY QUOTATIONS

“California ‘law is well settled that in a personal injury action causation must be proven within a reasonable medical probability based upon competent expert testimony.’” (Opinion at 3)

“The court’s ‘task ... is to analyze not what the experts say, but what basis they have for saying it.’” (Opinion at 5)

“The focus of the reliability inquiry is on the principles and methodology an expert uses in forming [his] opinions rather than the expert’s conclusions.” (Opinion at 6)

“Differential diagnosis cannot be used ‘to demonstrate general causation, because it assumes, without proving, that all of the potential causes considered are capable of causing the condition at issue.’” (Opinion at 9)

“Without Dr. Hahn’s testimony—testimony the Court has found unreliable—Plaintiffs cannot create a triable issue of fact on general or specific causation.” (Opinion at 14)

FACTUAL BACKGROUND

B.G. allegedly suffered sudden hearing loss and related ear injuries after an Amber Alert played through his first-generation Apple AirPods Pro. The undisputed evidence showed that the signal's maximum output was 113.5 decibels, while the cited medical evidence indicated that short-exposure acoustic trauma generally requires sound exceeding 130 decibels. B.G.'s treating otologist observed no redness, swelling, bleeding, edema, or eardrum abnormality shortly after the incident, findings the court considered inconsistent with injury from a very loud sound. Plaintiffs' sole causation expert, Dr. Yoav Hahn, attributed the injury to an acoustic shock causing a perilymphatic fistula, but relied principally on temporal proximity and did not identify supporting scientific research.

PROCEDURAL HISTORY

Plaintiffs filed the action on May 16, 2022, against Apple and the Luxshare defendants. The Court dismissed the gross-negligence and fraud-by-nondisclosure claims, plaintiffs filed a Second Amended Complaint after Carlos Gordo's death, and the Court later granted voluntary dismissal of the claims against the Luxshare defendants. The Court granted Apple's motion to exclude Dr. Hahn, granted Apple's motion for summary judgment on all remaining claims, denied plaintiffs' partial-summary-judgment motion as moot, and stated that judgment would be entered separately.

DISPOSITION

other

CASES CITED

- Onglyza Products Cases, 90 Cal. App. 5th 776, 791 (2023)
- Garner v. BNSF Railway Co., 98 Cal. App. 5th 660, 671 n.3 (2024)
- Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 593-94 (1993)
- Daubert v. Merrell Dow Pharmaceuticals, Inc., 43 F.3d 1311, 1316-19 (9th Cir. 1995)

- *Ellis v. Costco Wholesale Corp.*, 657 F.3d 970, 982 (9th Cir. 2011)
- *Elosu v. Middlefork Ranch Inc.*, 26 F.4th 1017, 1024 (9th Cir. 2022)
- *United States v. Valencia-Lopez*, 971 F.3d 891, 898-99 (9th Cir. 2020)
- *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 152 (1999)
- *Murray v. S. Route Maritime SA*, 870 F.3d 915, 922 (9th Cir. 2017)
- *Lust ex rel. Lust v. Merrell Dow Pharmaceuticals, Inc.*, 89 F.3d 594, 598 (9th Cir. 1996)
- *In re Bextra & Celebrex Marketing Sales Practices & Products Liability Litigation*, 524 F. Supp. 2d 1166, 1184 (N.D. Cal. 2007)
- *Avila v. Willits Environmental Remediation Trust*, 633 F.3d 828, 838-39 (9th Cir. 2011)
- *In re Silicone Gel Breast Implants Products Liability Litigation*, 318 F. Supp. 2d 879, 892 (C.D. Cal. 2004)
- *General Electric Co. v. Joiner*, 522 U.S. 136, 146 (1997)
- *In re Viagra (Sildenafil Citrate) & Cialis (Tadalafil) Products Liability Litigation*, 424 F. Supp. 3d 781, 790 (N.D. Cal. 2020)
- *In re Roundup Products Liability Litigation*, 390 F. Supp. 3d 1102, 1112 (N.D. Cal. 2018)
- *Hardeman v. Monsanto Co.*, 997 F.3d 941, 953 (9th Cir. 2021)
- *Messick v. Novartis Pharmaceuticals Corp.*, 747 F.3d 1193, 1198 (9th Cir. 2014)
- *In re Roundup Products Liability Litigation*, 737 F. Supp. 3d 893, 897-98 (N.D. Cal. 2024)
- *Johnson & Johnson Talcum Powder Cases*, 37 Cal. App. 5th 292, 323-24, 330 (2019)
- *Heller v. Shaw Industries, Inc.*, 167 F.3d 146, 154-56 (3d Cir. 1999)
- *Clausen v. M/V New Carissa*, 339 F.3d 1049, 1057-60 (9th Cir. 2003)
- *Wendell v. GlaxoSmithKline LLC*, 858 F.3d 1227, 1236 (9th Cir. 2017)
- *Kennedy v. Collagen Corp.*, 161 F.3d 1226, 1228 (9th Cir. 1998)
- *In re Incretin-Based Therapies Products Liability Litigation*, 524 F. Supp. 3d 1007, 1051 (S.D. Cal. 2021)
- *Sanderson v. International Flavors & Fragrances, Inc.*, 950 F. Supp. 981, 1004 (C.D. Cal. 1996)

OPINION

1 2 3 4 5 6 7 UNITED STATES DISTRICT COURT 8 NORTHERN DISTRICT OF
 CALIFORNIA 9 10 ARIANI REYES, et al., Case No. 3:22-cv-02900-JSC 11 Plaintiffs, ORDER
 RE: APPLE’S MOTION FOR 12 v. SUMMARY JUDGMENT AND MOTION TO EXCLUDE
 DR. HAHN 13 APPLE, INC., Re: Dkt. Nos. 196, 197, 201 Defendant. 14 15 16 Plaintiffs B.G.
 and his mother bring personal injury and product defect claims against 17 Apple regarding Apple’s
 AirPods product.

In their complaint, Plaintiffs alleged B.G.’s AirPods 18 Pro “produced ear shattering sound levels
 that ripped open B.G.’s right ear drum and damaged his 19 cochlea during an Amber Alert
 notification.” (Dkt. No. 1 at ¶ 4. 1) But now that discovery has 20 closed, the undisputed evidence
 shows the Amber Alert produced a sound no greater than 113.5 21 decibels—a volume below

sounds commonly experienced in everyday life—and a volume 22 magnitudes less than that which is scientifically recognized to cause hearing loss or injury.

Apple 23 now moves to exclude Plaintiffs' causation expert Dr. Yaov Hahn and moves for summary 24 judgment. (Dkt. Nos. 196, 197.) Having considered the parties' briefs and the relevant legal 25 authority, and having had the benefit of oral argument on April 24, 2025, the Court GRANTS 26 Apple's motion to exclude to Dr. Hahn and GRANTS Apple's motion for summary judgment.

27 1 BACKGROUND 2 Carlos Gordoia and Ariani Reyes, along with their minor son, B.G., filed this personal 3 injury action on May 16, 2022. (Dkt. No. 1.) Plaintiffs brought claims of (1) negligence, (2) strict 4 liability (design defect), (3) strict liability (failure to warn), (4) strict liability (manufacturing 5 defect), (5) gross negligence, (6) breach of implied warranty, (7) fraud by non-disclosure, and (8) 6 negligent infliction of emotional distress as to Carlos Gordoia, against Apple, Luxshare Precision, 7 and Luxshare-ICT.

Apple partners with Luxshare to manufacture, import, market, distribute, and 8 sell their AirPods Products. (Id. at ¶¶ 7-8.) The Court granted Apple's motion to dismiss the 9 gross negligence and fraud by non-disclosure claims. (Dkt. No. 57.) 10 Over the following two and a half years, the parties engaged in discovery, bringing 11 frequent discovery disputes to the Court, and the Court granted numerous stipulations to extend 12 the case schedule to accommodate the parties' discovery.

(See, e.g., Dkt. Nos. 75, 88, 91, 99, 101, 13 104, 109, 112, 117, 125, 127, 131, 144, 154, 160, 163, 170, 172.) On March 15, 2024, Plaintiffs 14 filed the operative Second Amended Complaint following the death of Carlos Gordoia, which 15 otherwise repleads all the claims except the negligent infliction of emotional distress claim. (Dkt. 16 No. 136.) Four months later, the Court granted Plaintiffs' motion to voluntarily dismiss their 17 claims against the Luxshare Defendants.

(Dkt. No. 167.) 18 Apple now moves for summary judgment on all of Plaintiffs' claims and to exclude 19 Plaintiffs' causation expert Dr. Hahn. (Dkt. Nos. 196, 197.) Plaintiffs move for partial summary 20 judgment on Apple's affirmative defense of comparative negligence which Apple does not 21 oppose. (Dkt. Nos. 201, 207.) 22 SUMMARY JUDGMENT EVIDENCE 23 The following undisputed facts frame the Court's analysis.

First, the maximum acoustical output of the Amber Alert signal that played through B.G.'s AirPods Pro was 113.5 decibels. 24 (Dkt. No. 196-2, Ex. D, Casali Depo. at 204:1-25, 208:2-209:2; Dkt. No. 196-2, Ex. I, Hahn Depo. 25 at 17:23-18:3.2) Second, exposure to sounds in the range of 120 decibels—more than double the 26 27 1 sound pressure B.G. experienced—is common in everyday life.³ (Dkt.

No. 196-2, Ex. I, Hahn. 2 Depo. at 44:11-18; Dkt. No. 196-2, Ex. L, Jackson Depo. at 22:6-11.) Third, according to the 3 medical literature, sound in excess of 130 decibels is required to cause acoustic trauma for a short 4 exposure in even the most susceptible human ear. (Dkt. No. 196-2, Ex. I, Hahn. Depo. at 17:9- 5 15.)

Finally, when B.G. was examined by his treating otologist, Dr. Jackson, shortly after the 6 incident, “there was no redness, swelling, bleeding, edema. The ear looked perfectly normal, and 7 the eardrum looked perfectly normal, which is what you would expect in a viral inner ear infection 8 but not in a very loud sound, which would also injure the eardrum.” (Dkt.

No. 196-2, Ex. K, 9 Jackler Depo. at 152:8-15.) 10 DISCUSSION 11 California “law is well settled that in a personal injury action causation must be proven 12 within a reasonable medical probability based upon competent expert testimony.” Onglyza Prod. 13 Cases, 90 Cal. App. 5th 776, 791 (2023), reh’g denied (May 9, 2023), review denied (July 26, 14 2023). “[A]dmissible expert testimony must first be provided to show that the defendants’ 15 products were capable of causing the [injury] at issue, in anyone.

Without any evidence 16 demonstrating the [product] was even capable of causing [the injury], the experts could not 17 reliably conclude the [product] caused the plaintiff’s [injury], even if other known causes were 18 ruled out.” Id. (cleaned up). So, “[i]n general, expert testimony is required to establish general 19 causation in products liability cases.” Id.; see also Garner v. BNSF Ry.

Co., 98 Cal. App. 5th 660, 20 671 n.3 (2024), reh’g denied (Jan. 22, 2024), review denied (Apr. 17, 2024) (cleaned up). 21 (“General causation refers to whether a substance is capable of causing a particular injury or 22 condition in the general population. Specific causation refers to whether the substance caused a 23 particular individual’s injury or condition.”).

24 Apple moves for summary judgment on all of Plaintiffs’ claims arguing the evidence is 25 insufficient to support a finding the Apple AirPods Pro (first generation) could have caused the 26 injury B.G. alleges (general causation), and there is no evidence to support Plaintiffs’ theory of 27 1 specific causation because their specific causation expert’s opinion is inadmissible under Daubert.

2 The Court agrees. 3 A. Plaintiffs’ Causation Theory 4 Plaintiffs’ causation expert, Dr. Yoav Hahn, opines B.G.’s exposure to the Amber Alert 5 through his AirPods Pro earbud, which was no more than 113.5 decibels, caused an acoustic shock 6 that resulted in a perilymph fistula (“PLF”) and caused B.G.’s hearing loss. (Dkt. No. 196-2, Ex. 7 I, Hahn Depo. at 78:4-9; Dkt.

No. 208-3, Ex. 2, Supp. Hahn Decl. at ECF 3.) His opinion is based 8 on a differential diagnosis of B.G.’s symptoms.⁴ 9 A PLF is a condition “where you have the perilymph fluid of the inner ear leaking from 10 one of the windows of the inner ear into the middle ear.” (Dkt. No. 196-2, Ex. I,

Hahn Depo. at 11 50:19-22.) There are two different membranes or windows that can rupture in a PLF—a round 12 window and an oval window.

(Id. at 50:23-24; 70:16-19.) Dr. Hahn acknowledged it was unclear 13 whether the round or the oval window sustained damage because no one documented perilymph 14 fluid in B.G.’s ear following the incident, but he nonetheless opined the Amber Alert caused a PLF 15 because “what we do know is that immediately after the tone came through his ear that he had 16 symptoms consistent with a perilymphatic fistula.” (Id. at 71:19-23; 88:17-89:5.)

So, Dr. Hahn’s 17 opinion is based on the temporal proximity between the Amber Alert and B.G.’s discovery of his 18 injury. 19 A PLF is most commonly caused by a blunt or penetrating trauma or a sudden or extreme 20 barometric pressure change. (Id. at 50:25-51:23.) Dr. Hahn could identify only one documented 21 case of noise-induced PLF which was reported more than 33 years ago by a firefighter whose right 22 ear was 18 inches away from a siren which produced sound at 140 decibels—more than 100 times 23 louder than the Amber Alert B.G. experienced.

(Id. at 56:14-57:3.) Dr. Hahn was unaware of any 24 report in any peer-reviewed medical or scientific journal of a PLF caused by a noise exposure 25 under 120 decibels. (Id. at 57:5-12.) 26 4 “Differential diagnosis is ‘the determination of which of two or more diseases with similar 27 symptoms is the one from which the patient is suffering, by a systematic comparison and 1 According to Dr. Hahn, an “acoustic shock” occurs when “a sudden tone around 120 2 decibels is delivered to the ear.” (Id. at 22:3-9.)

Dr. Hahn testified an “acoustic shock” can cause 3 hearing loss, dizziness, pressure, ear pain, or hypersensitivity to sound. (Id. at 26:6-18.) Dr. 4 Hahn was unaware of any documented cases of “acoustic shock” causing permanent hearing loss 5 in peer-reviewed medical or scientific literature, nor had he seen a report of someone using an in- 6 ear headphone or ear bud being diagnosed with or suspected of having acoustic shock as a result 7 of exposure to noise through an in-ear headphone or earbud.

(Id. at 28:1-5; 28:2-25; 48:23-29:24.) 8 He described acoustic shock as “a newer diagnosis.” (Id. at 29-1-5.) He acknowledged an 9 “acoustic trauma,” in contrast, is well-established in the medical literature as causing permanent 10 hearing loss where there is a short exposure to sound in excess of 130 decibels. (Id. at 16:13- 11 17:14.) 12 B. General Causation 13 The general causation inquiry asks whether the product at issue is capable of causing the 14 injury alleged.

Onglyza Prod. Cases, 90 Cal. App. 5th at 791. Here, the inquiry is whether 15 Plaintiffs have offered evidence from which a reasonable trier of fact could conclude a brief 16 exposure to a sound of no more than 113.5 decibels through an AirPods Pro earbud is capable of 17 causing hearing injury of the type alleged. 18 The evidence is insufficient to support a finding in Plaintiffs’ favor on general causation.

19 Dr. Hahn, Plaintiffs' sole causation expert, is not qualified to offer a general causation opinion,
20 does not offer a general causation opinion, and, in any event, does not identify any basis for a
21 general causation opinion. 22 1. Daubert Legal Standard 23 Under Federal Rule of Evidence
702, a witness may offer expert testimony if the witness 24 "is qualified as an expert by
knowledge, skill, experience, training, or education," and the 25 proponent of the witness
demonstrates to the court that it is more likely than not that: 26 (a) the expert's scientific,
technical, or other specialized knowledge will help the trier of fact to understand the 27 evidence
or to determine a fact in issue; 1 (c) the testimony is the product of reliable principles and
methods; and 2 (d) the expert's opinion reflects a reliable application of the 3 principles and
methods to the facts of the case.

4 Fed. R. Evid. 702. These criteria can be distilled to two overarching considerations: "reliability 5
and relevance." *Ellis v. Costco Wholesale Corp.*, 657 F.3d 970, 982 (9th Cir. 2011). The court's 6
"task... is to analyze not what the experts say, but what basis they have for saying it." *Daubert v. 7*
Merrell Dow Pharmaceuticals, Inc. (Daubert II), 43 F.3d 1311, 1316 (9th Cir.

1995). 8 When determining the admissibility of expert testimony, a district court's role under Rule
9 702 is not to be a "fact finder" but a "gatekeeper." *Elosu v. Middlefork Ranch Inc.*, 26 F.4th
1017, 10 1024 (9th Cir. 2022) (cleaned up).

To fulfill its gatekeeper role, a district court must "ensure that 11 the testimony is both relevant
and reliable" before it allows such testimony. *United States v. 12 Valencia-Lopez*, 971 F.3d 891,
898-99 (9th Cir. 2020) (cleaned up). By acting as a gatekeeper for 13 all proffered expert
testimony, a court "make[s] certain that an expert, whether basing testimony 14 upon professional
studies or personal experience, employs in the courtroom the same level of 15 intellectual rigor
that characterizes the practice of an expert in the relevant field." *Kumho Tire Co. 16 v.*
Carmichael, 526 U.S. 137, 152 (1999).

17 "The question of reliability probes whether the reasoning or methodology underlying the 18
testimony" is valid. *Murray v. S. Route Mar. SA*, 870 F.3d 915, 922 (9th Cir. 2017) (cleaned up).
19 To aid a court's evaluation of reliability, the Supreme Court in *Daubert I* "identified four factors
20 that may bear on the analysis": 21 (1) whether the theory can be and has been tested, 22 (2)
whether the theory has been peer reviewed and published, 23 (3) what the theory's known or
potential error rate is, and 24 (4) whether the theory enjoys general acceptance in the applicable
scientific community.

25 *Id.* (citing *Daubert v. Merrell Dow Pharms., Inc. (Daubert I)*, 509 U.S. 579, 593-94 (1993)).
The 26 expert's proponent "has the burden of proving admissibility." *Lust ex rel. Lust v. Merrell*
Dow 27 Pharms., Inc., 89 F.3d 594, 598 (9th Cir. 1996). 2. Dr. Hahn is Not Qualified to Render a
General Causation Opinion 1 Dr. Hahn is a clinical physician specializing in the fields of
otolaryngology and 2 neurotology who spends 99 percent of his time seeing patients in the office.

He reached his 3 opinion based on his experience seeing thousands of patients in his years of practice. (Dkt. No. 4 208-4, Hahn Depo. at 113:13-16.) Dr. Hahn has not conducted any research on the subject of 5 hearing loss, participated in any observational studies, or published in medical or scientific 6 literature related to hearing loss. (Dkt. No. 196-2, Ex. I, Hahn Depo. at 174:7-12.)

His opinion 7 was developed exclusively for purposes of this litigation. 8 Dr. Hahn is not qualified to provide an opinion as to general hearing loss causation 9 because he has no relevant research or publication experience and has not engaged with the 10 epidemiological data regarding hearing loss. See *Daubert II*, 43 F.3d at 1317 (holding that in 11 deciding whether an expert is qualified, courts must consider “whether the experts are proposing 12 to testify about matters growing naturally and directly out of research they have conducted 13 independent of the litigation, or whether they have developed their opinions expressly for 14 purposes of testifying”); see also *In re Bextra & Celebrex Mktg.*

Sales Pracs. & Prod. Liab. Litig., 15 524 F. Supp. 2d 1166, 1184 (N.D. Cal. 2007) (excluding general causation opinion of expert who 16 was “a clinical physician with no relevant research experience and who developed his opinion for 17 the purpose of testifying”). Issues of general causation—the level of sound capable of causing the 18 injury alleged here—are outside of Dr. Hahn’s expertise.

See *Avila v. Willits Env’t Remediation* 19 Tr., 633 F.3d 828, 838-39 (9th Cir. 2011) (holding the district court did not err in excluding expert 20 on general causation based on his lack of scientific expertise regarding whether the challenged 21 activity “could or did result in the creation of toxicologically significant amounts of dioxins”). 22 3. Dr. Hahn Does Not Offer a General Causation Opinion 23 Aside from his lack of qualifications, Dr. Hahn has not attempted to answer the question of 24 whether a 10-second exposure to noise stimulus of 113.5 decibels or less could cause a sudden 25 profound hearing injury such as B.G.’s.

Plaintiffs’ insistence that Dr. Hahn’s testimony “that 26 acoustic shock is capable of causing hearing loss, dizziness, pressure, and ear pain” and 27 “perilymphatic fistula is capable of causing tinnitus, vertigo, dizziness, ear fullness, and hearing 1 loss” and both caused B.G.’s injuries is sufficient to establish general causation is unpersuasive. 2 (Dkt.

No. 210 at 19.) Neither opinion addresses whether a 10-second exposure to noise stimulus 3 of 113.5 decibels or less is capable of causing a profound hearing injury such as B.G.’s. 4 And Plaintiffs cannot rely on Dr. Hahn’s differential diagnosis to establish general 5 causation. Differential diagnosis cannot be used “to demonstrate general causation, because it 6 assumes, without proving, that all of the potential causes considered are capable of causing the 7 condition at issue.

Indeed differential diagnosis assumes that general causation has been proven 8 for the list of possible causes it eliminates.” See *In re Silicone Gel Breast Implants Prods. Liab.* 9 Litig., 318 F. Supp. 2d 879, 892 (C.D. Cal. 2004) (cleaned up). 10 4. Any General Causation Opinion is Unreliable 11 It follows from the above that to the extent Dr. Hahn’s opinion can somehow be 12 interpreted as a general causation opinion, it is unreliable and thus inadmissible.

When an expert’s 13 opinion does not spring from research independent of the litigation, “the party proffering it must 14 come forward with other objective, verifiable evidence that the testimony is based on scientifically 15 valid principles” like peer-reviewed studies or a reputable source showing that the expert 16 “followed the scientific method, as it is practiced by (at least) a recognized minority of scientists 17 in their field.” *Daubert II*, 43 F.3d at 1317-19. “The focus of the reliability inquiry is on the 18 principles and methodology an expert uses in forming [his] opinions rather than the expert’s 19 conclusions.” *In re Viagra (Sildenafil Citrate) & Cialis (Tadalafil) Prod.*

Liab. Litig., 424 F. Supp. 20 3d 781, 790 (N.D. Cal. Jan. 13, 2020). The Court must consider whether, for a given conclusion, 21 “there is simply too great an analytical gap between the data and the opinion proffered.” *General 22 Electric Co. v. Joiner*, 522 U.S. 136, 146 (1997); see also *In re Roundup Prods. Liab. Litig.*, 390 23 F. Supp. 3d 1102, 1112 (N.D.

Cal. 2018), *aff’d sub nom. Hardeman v. Monsanto Co.*, 997 F.3d 24 941 (9th Cir. 2021) (“Both unsound methods and unjustified extrapolations from existing data can 25 require the Court to exclude an expert.”). 26 Dr. Hahn does not identify anything other than temporal proximity related to one case (the 27 litigation for which he is being paid) to support an opinion that a short exposure to noise at 113.5 1 He does not identify any research.

And he does not explain why the decades of peer-reviewed 2 research showing hearing loss only occurs at levels exponentially higher than what B.G. 3 experienced is incorrect. In short, there is no basis for Dr. Hahn to offer a reliable general 4 causation opinion. See *Daubert I*, 509 U.S. at 565 (“Expert opinion testimony ... is reliable if the 5 knowledge underlying it has a reliable basis in the knowledge and experience of the relevant 6 discipline.”).

7 The cases on which Plaintiffs rely do not suggest otherwise. See *Clausen v. M/V NEW 8 CARISSA*, 339 F.3d 1049, 1057 (9th Cir. 2003), as amended on denial of reh’g (Sept. 25, 2003); 9 *Wendell v. GlaxoSmithKlin e LLC*, 858 F.3d 1227 (9th Cir. 2017).

In both *Clausen* and *Wendell* 10 the diseases at issue were so rare there was a paucity of literature concerning causation. *Clausen*, 11 339 F.3d at 1060 (“Oil spills, fortunately, are a rare enough occurrence, and the opportunities for 12 scholarly research are few.

In such a situation, a lack of published studies should not bar otherwise 13 scientifically valid testimony.”); *Wendell*, 858 F.3d at 1236 (“HSTCL is an exceedingly rare 14 cancer, with only 100

to 200 cases reported since it was first recognized. It is not surprising that 15 the scientific community has not invested substantial time or resources into investigating the 16 causes of such a rare disease.”).

Noise-related hearing loss is neither rare nor is there a paucity of 17 research regarding the casual relationship between noise and hearing loss. (Dkt. No. 196-2, Ex. I, 18 Hahn Depo. at 13:19-15:12) (discussing the decades of research and wide breadth of scientific and 19 medical research regarding noise-induced hearing loss and injuries). Unlike in Wendell and 20 Clausen, “the causal relationship between [noise] and [hearing loss] has for several years been the 21 topic of various scientific, medical, and regulatory examination, resulting in numerous animal and 22 clinical studies and peer-reviewed literature.” In re Incretin-Based Therapies Prods.

Liab. Litig., 23 524 F. Supp. 3d 1007, 1051 (S.D. Cal. 2021) (rejecting the plaintiffs’ argument they could use 24 differential diagnosis to prove general causation). 25 Plaintiffs’ reliance on Kennedy v. Collagen Corp., 161 F.3d 1226, 1228 (9th Cir. 1998), is 26 also unavailing.

In Kennedy, the expert “relied upon a wide variety of objective, verifiable 27 evidence” and the Ninth Circuit found the district court erred by ignoring the scientific studies 1 unreliable. Id. at 1228. Dr. Hahn, in contrast, can point to no case study or anything in the 2 medical literature supporting his opinion that an “acoustic shock” of less than 130 decibels (let 3 alone less than 114 decibels) could cause a PLF resulting in permanent hearing loss.

(Dkt. No. 4 196-2, Ex. I, Hahn Depo. at 78:10-14; 89:13-90:1; 103:1-104:10.) Indeed, he did not rely on any 5 scientific studies to support his methodology—or lack thereof. 6 Plaintiffs insist “the novelty of the AirPods Pro delivery of noise directly into the ear also 7 add to the unique nature of this case.” (Dkt. No. 210 at 21.) But Plaintiffs’ own expert Dr. Casali 8 testified that the test fixture he developed to determine the AirPods Pro’s output when playing the 9 Amber Alert signal was 113.5 decibels was designed “to be securely fitted to the concha and ear 10 canal regions of the ear simulator...closely mimic[ing] a human ear.”⁵ (Dkt.

No. 208-8 at ECF 11 11.) So, there is no foundation for Dr. Hahn’s speculation that something about the ear bud’s 12 placement in the ear would affect the sound pressure as that is exactly what Dr. Casali tested. And 13 Dr. Hahn testified he had never come across any scientific or medical literature discussing 14 someone having been diagnosed with or suspected of having acoustic shock as a result of exposure 15 to a noise that came through an in-ear headphone or earbud.

(Dkt. No. 196-2, Ex. I, Hahn. Depo. 16 at 49:15-24.) See Daubert II, 43 F.3d at 1319 (“We’ve been presented with only the experts’ 17 qualifications, their conclusions and their assurances of reliability. Under Daubert, that’s not 18 enough.”). 19 *** 20 Because Plaintiffs have not offered evidence sufficient to support a finding of general 21 causation, Apple is entitled to summary judgment in its favor.

See *In re Roundup Prods. Liab.* 22 Litig., 737 F. Supp. 3d 893, 898 (N.D. Cal. 2024). 23 C. Specific Causation 24 Plaintiffs have likewise failed to offer evidence from which a trier of fact could conclude 25 5 Dr. Casali attests the “inanimate acoustical manikin” he used is “specifically designed to 26 simulate the actual human ear in terms of both anatomical features and approximate acoustical response” and it “constitutes a laboratory-grade instrument for obtaining accurate measurements 27 of earphone sound output with high test-retest reliability, and its realistic pinnae and ear canal 1 the brief Amber Alert through the AirPods Pro in fact caused B.G.’s injuries.

See *Garner v. BNSF 2 Ry. Co.*, 98 Cal. App. 5th 660, 671 n.3 (2024), reh’g denied (Jan. 22, 2024), review denied (Apr. 3 17, 2024) (“‘Specific causation’ refers to whether the substance caused a particular individual’s 4 injury or condition.”). Again, the sole evidence of specific causation is Dr. Hahn’s opinion that 5 B.G.’s exposure to the Amber Alert through his AirPods Pro earbud, which was no more than 6 113.5 decibels, caused an acoustic shock that resulted in a PLF and caused B.G.’s hearing loss.

7 (Dkt. No. 196-2, Ex. I, Hahn Depo. at 78:4-9; Dkt. No. 208-3, Ex. 2, Supp. Hahn Decl. at ECF 3.) 8 1. Dr. Hahn’s Specific Causation Opinions are Unreliable 9 Dr. Hahn’s specific causation opinions are based on unsupported assumptions and his 10 differential diagnosis is legally and scientifically unsound. 11 First, Plaintiffs’ failure to offer evidence as to general causation is fatal to Dr. Hahn’s 12 specific causation opinion. “Without being able to offer his general causation opinion, [Dr.

Hahn] 13 has no basis for “ruling in” [the Amber Alert] as a causal factor in [this] case, so he can’t conclude 14 that [the Amber Alert] was what actually caused [B.G.’s injury].” *In re Roundup Prods. Liab.* 15 Litig., 737 F. Supp. 3d at 897 (citing *Clausen*, 339 F.3d at 1057–58 (“The issue at this point in the 16 process is which of the competing causes are generally capable of causing the patient’s symptoms 17 or mortality.

Expert testimony that rules in a potential cause that is not so capable is unreliable.”)); 18 see also *Johnson & Johnson Talcum Powder Cases*, 37 Cal. App. 5th 292, 330 (2019) (“Without 19 any evidence demonstrating the alleged toxin was even capable of causing disease, the experts 20 could not reliably conclude the toxin caused the plaintiff’s disease, even if other known causes 21 were ruled out.”).

Plaintiffs’ contention at oral argument that the general and specific causation 22 requirements exist only for toxic tort and pharmaceutical cases has no legal nor common sense 23 support. And Plaintiffs take out of context Heller’s statement that clinical experience “should 24 suffice for the making of a differential diagnosis even in those cases in which peer-reviewed 25 studies do not exist to confirm the diagnosis of the physician.” *Heller v. Shaw Indus., Inc.*, 167 26 F.3d 146, 155 (3d Cir.

1999). It is not that studies regarding noise-related hearing loss do not exist—it is that no study supports Dr. Hahn’s theory. This is not a “case[] in which the state of 1 Second, Dr. Hahn’s differential diagnosis—the predicate for his specific causation 2 opinion—is unreliable. A differential diagnosis is “a methodology by which a physician rules in 3 all potential causes of a disease, rules out those for which there is no plausible evidence of 4 causation, and then determines the most likely cause among those that cannot be excluded.” 5 *Hardeman v. Monsanto Co.*, 997 F.3d 941, 953 (9th Cir.

2021) (cleaned up). 6 Dr. Hahn’s differential diagnosis is based upon his having ruled out a virus as the cause of 7 B.G.’s injury. (Dkt. No. 208-2, Hahn Decl. at ECF 8-9.) “When an expert rules out a potential 8 cause in the course of a differential diagnosis, the ‘expert must provide reasons for rejecting 9 alternative hypotheses using scientific methods and procedures and the elimination of those 10 hypotheses must be founded on more than subjective beliefs or unsupported speculation.’” 11 *Messick v. Novartis Pharms.*

Corp., 747 F.3d 1193, 1198 (9th Cir. 2014) (quoting *Clausen*, 339 12 F.3d at 1058). Dr. Hahn’s exclusion of a virus as a cause does not meet this standard. Dr. Jackler, 13 Apple’s causation expert, opined a COVID infection was the most likely cause of B.G.’s injuries. 14 (Dkt. No. 196-2, Ex. H at ¶¶ 76-86.) And Dr. Hahn acknowledged “[s]udden hearing loss and 15 vertigo can be caused by an inflammation of the inner ear often caused by a virus (viral 16 labyrinthitis)” and agreed there are several case reports of COVID causing viral labyrinthitis.

17 (Dkt. No. 208-2, Hahn Report at ECF 8.) But Dr. Hahn nevertheless ruled out COVID as the 18 cause of B.G.’s injuries because “B.G. had no symptoms that could be attributed to COVID-19 or 19 any other viral illness. Specifically, he did not have a cough, fever, or weakness that may have 20 heralded a COVID-19 infection or other viral illness.” (Dkt. No. 208-2, Hahn.

Decl. at ECF 9.) 21 Dr. Hahn’s reasoning is not scientifically grounded. He conceded there are several reports 22 in the medical and scientific literature of a COVID infection causing sudden hearing loss in 23 adolescents. (Dkt. No. 196-2, Ex. I, Hahn. Depo. at 140:24-141:6.) He also conceded hearing loss 24 associated with a COVID infection could present with many of the same symptoms as B.G.

25 experienced here: oral fullness, tinnitus, and otalgia. (Id. at 141:17-142:10.) He acknowledged 26 many people infected with COVID are asymptomatic. (Id. at 142:14-18.) And most critically, he 27 testified there was nothing “physiologically or pathologically” that allowed him to rule out 1 as a possible cause of B.G.’s injuries because B.G. did not have the symptoms “we associate with 2 COVID-19 in the majority of patients...the fevers, the feeling badly.” (Id. at 152:19-153:2.)

The 3 blatant inconsistencies in Dr. Hahn’s reasoning render his opinion unreliable: while 4 acknowledging many people with COVID are asymptotic, he nevertheless concluded B.G. could 5

not have had COVID because the medical records do not show he had symptoms. Further, 6 although he acknowledged hearing loss can be a symptom of COVID, he rejected it as a symptom 7 of COVID in B.G without any scientific explanation.

(Id. at 141:17-142:10.) 8 Plaintiffs' urging that because B.G. did not have a positive COVID test Dr. Hahn's 9 exclusion of COVID was reasonable is unavailing. First, the argument ignores that in May 2020 10 community testing for COVID was not available. (Dkt. No. 196-2, Ex. H, Jackler Decl. at ¶ 46.) 11 Second, just because someone did not take a COVID test does not mean they could not have had 12 COVID.

Third, B.G.'s treating otologist Dr. Jackson testified that when he examined B.G. shortly 13 after the incident "there was no redness, swelling, bleeding, edema. The ear looked perfectly 14 normal, and the eardrum looked perfectly normal, which is what you would expect in a viral inner 15 ear infection but not in a very loud sound, which would also injure the eardrum." (Dkt.

No. 196-2, 16 Ex. K, Jackson Depo. at 152:8-15 (emphasis added).) So, Dr. Hahn's decision in July 2024 to rule 17 out COVID as a possible cause of B.G.'s May 2020⁶ hearing loss given everything now 18 scientifically known is inexplicable and renders his opinion fatally unreliable. See *Westberry v. 19 Gislaved Gummi AB*, 178 F.3d 257, 265 (4th Cir. 1999) ("A differential diagnosis that fails to take 20 serious account of other potential causes may be so lacking that it cannot provide a reliable basis 21 for an opinion on causation.").

22 Dr. Hahn's reliance on the temporal proximity between the Amber Alert and B.G.'s 23 discovery of his injury does not salvage his opinion. (Dkt. No. 208-2, Hahn Report at ECF 9 24 ("[B.G.] had no hearing loss, dizziness, tinnitus, or other otologic symptoms before the sudden 25 26 6 On March 13, 2020, President Trump declared a national emergency due to COVID-19.

See 27 Pres. Proc. No. 9994, 85 Fed. Reg. 15337 (Mar. 18, 2020); Joint resolution for national 1 incident with the Amber Alert transmitted through the AirPods Pro in the right ear."). That the 2 Amber Alert was a theoretical cause is not enough to scientifically exclude COVID as a cause. 3 See *Messick*, 747 F.3d at 1198 ("experts must provide scientifically sound reasons for excluding 4 potential causes"); *Henricksen v. ConocoPhillips Co.*, 605 F. Supp. 2d 1142, 1175 (E.D.

Wash. 5 2009) ("an association does not equal causation, and it is the duty of scientists to rigorously 6 analyze the data to determine whether or not an association is causal. This means considering such 7 factors as strength of association, consistency of association, specificity of the association, and 8 biological plausibility."). Plaintiffs again rely on Clausen arguing the temporal proximity between 9 the event and the injury "can provide compelling evidence of causation." (Dkt.

No. 210 at 10 10 (quoting Clausen, 339 F.3d at 1059).) But the temporal proximity between the oil spill and the 11 onset of the gill lesions in Clausen was just one piece of the "objective, verifiable

evidence” the 12 expert relied upon—not, as here, the only piece. Clausen, 339 F.3d at 1059; see also Sanderson v. 13 Int’l Flavors & Fragrances, Inc., 950 F. Supp. 981, 1004 (C.D.

Cal. 1996) (excluding expert 14 where “[a]t bottom, his opinion is founded primarily on the temporal connection between the 15 [event] and the development of [] symptoms, as well as on his subjective, unverified, belief that 16 [the product] can cause the types of injuries from which [plaintiff] suffers. This is not the method 17 of science.”). And in Clausen there did not exist other scientific evidence that soundly refuted the 18 expert’s causation theory; here, in contrast, there is decades of research that shows it takes noise at 19 decibels exponentially higher than what B.G. experienced to cause an injury like B.G.’s.

Heller v. 20 Shaw Indus., Inc., 167 F.3d 146 (3d Cir. 1999), likewise fails to support Plaintiffs’ theory as there 21 the court noted “the temporal relationship between an illness and a causal event” could support 22 causation when the expert performs a “thorough differential diagnosis” ruling “out other possible 23 causes of [injury].” Id. at 154. Indeed, Heller supports the unreliability of Dr. Hahn’s specific 24 causation opinion given he failed to exclude the most likely cause of B.G.’s injury.

Id. at 156 25 (“where a defendant points to a plausible alternative cause and the doctor offers no explanation for 26 why he or she has concluded that was not the sole cause, that doctor’s methodology is 27 unreliable”). 1 Daubert and Rule 702.

Because Plaintiffs offer no other evidence of specific causation, Apple is 2 || entitled to summary judgment in its favor. 3 TK 4 There is no dispute B.G. experienced tragic hearing loss and injury, but to hold Apple 5 liable for those injuries Plaintiffs must proffer evidence sufficient to find something Apple did 6 || caused those injuries. See Johnson & Johnson Talcum Powder Cases, 37 Cal. App.

5th 292, 324 7 (2019) (“[I]n a personal injury action causation must be proven within a reasonable medical 8 || probability based upon competent expert testimony. Mere possibility alone is insufficient to 9 || establish a prima facie case.”). Without Dr. Hahn’s testimony—testimony the Court has found 10 || unreliable—Plaintiffs cannot create a triable issue of fact on general or specific causation.

11 Because causation is an element of all of Plaintiffs’ claims, Apple is entitled to judgment in its 12 favor. Id. at 323 (‘Causation is an essential element of a tort action. Defendants are not liable 13 || unless their conduct was a legal cause of plaintiff’s injury.’) (cleaned up); see also Dkt. No. 209 at 14 || 21 (Plaintiffs concede causation required for their product defect claims).

3 15 CONCLUSION a 16 For the reasons stated above, Apple’s motion to exclude Dr. Hahn’s opinion is GRANTED 17 and Apple’s motion for summary judgment is GRANTED. (Dkt. Nos. 196, 197.) Plaintiffs’ 18 motion for partial summary judgment is DENIED as moot. (Dkt. No.

201.) 19 The Court will enter judgment by separate order. 20 This Order disposes of Docket Nos. 196, 197, 201.

21 IT IS SO ORDERED. 22 || Dated: April 28, 2025 St 23 mm JACQUELINE SCOTT CORL 24
United States District Judge 25 26 27 28