United States District Court
Northern District of California

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

ARIANI REYES, et al.,

Plaintiffs,

v.

APPLE, INC.,

Defendant.

Case No. 3:22-cv-02900-JSC

ORDER RE: APPLE'S MOTION FOR SUMMARY JUDGMENT AND MOTION TO EXCLUDE DR. HAHN

Re: Dkt. Nos. 196, 197, 201

Plaintiffs B.G. and his mother bring personal injury and product defect claims against Apple regarding Apple's AirPods product. In their complaint, Plaintiffs alleged B.G.'s AirPods Pro "produced ear shattering sound levels that ripped open B.G.'s right ear drum and damaged his cochlea during an Amber Alert notification." (Dkt. No. 1 at ¶ 4.[1]) But now that discovery has closed, the undisputed evidence shows the Amber Alert produced a sound no greater than 113.5 decibels—a volume below sounds commonly experienced in everyday life—and a volume magnitudes less than that which is scientifically recognized to cause hearing loss or injury. Apple now moves to exclude Plaintiffs' causation expert Dr. Yaov Hahn and moves for summary judgment. (Dkt. Nos. 196, 197.) Having considered the parties' briefs and the relevant legal authority, and having had the benefit of oral argument on April 24, 2025, the Court GRANTS Apple's motion to exclude to Dr. Hahn and GRANTS Apple's motion for summary judgment.

[1] Record Citations are to material in the Electronic Case File ("ECF"); pinpoint citations are to the ECF-generated page numbers at the top of the document.

BACKGROUND

Carlos Gordoa and Ariani Reyes, along with their minor son, B.G., filed this personal injury action on May 16, 2022. (Dkt. No. 1.) Plaintiffs brought claims of (1) negligence, (2) strict liability (design defect), (3) strict liability (failure to warn), (4) strict liability (manufacturing defect), (5) gross negligence, (6) breach of implied warranty, (7) fraud by non-disclosure, and (8) negligent infliction of emotional distress as to Carlos Gordoa, against Apple, Luxshare Precision, and Luxshare-ICT. Apple partners with Luxshare to manufacture, import, market, distribute, and sell their AirPods Products. (*Id*. at ¶¶ 7-8.) The Court granted Apple's motion to dismiss the gross negligence and fraud by non-disclosure claims. (Dkt. No. 57.)

Over the following two and a half years, the parties engaged in discovery, bringing frequent discovery disputes to the Court, and the Court granted numerous stipulations to extend the case schedule to accommodate the parties' discovery. (*See, e.g*., Dkt. Nos. 75, 88, 91, 99, 101, 104, 109, 112, 117, 125, 127, 131, 144, 154, 160, 163, 170, 172.) On March 15, 2024, Plaintiffs filed the operative Second Amended Complaint following the death of Carlos Gordoa, which otherwise repleads all the claims except the negligent infliction of emotional distress claim. (Dkt. No. 136.) Four months later, the Court granted Plaintiffs' motion to voluntarily dismiss their claims against the Luxshare Defendants. (Dkt. No. 167.)

Apple now moves for summary judgment on all of Plaintiffs' claims and to exclude Plaintiffs' causation expert Dr. Hahn. (Dkt. Nos. 196, 197.) Plaintiffs move for partial summary judgment on Apple's affirmative defense of comparative negligence which Apple does not oppose. (Dkt. Nos. 201, 207.)

SUMMARY JUDGMENT EVIDENCE

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. (Dkt. No. 196-2, Ex. D, Casali Depo. at 204:1-25, 208:2-209:2; Dkt. No. 196-2, Ex. I, Hahn Depo. at 17:23-18:3.[2]) Second, exposure to sounds in the range of 120 decibels—more than double the

[2] Deposition citations are to the deposition page and line number, not the ECF page number.

sound pressure B.G. experienced—is common in everyday life.[3] (Dkt. No. 196-2, Ex. I, Hahn. Depo. at 44:11-18; Dkt. No. 196-2, Ex. L, Jackson Depo. at 22:6-11.) Third, according to the medical literature, sound in excess of 130 decibels is required to cause acoustic trauma for a short exposure in even the most susceptible human ear. (Dkt. No. 196-2, Ex. I, Hahn. Depo. at 17:9-15.) Finally, when B.G. was examined by his treating otologist, Dr. Jackson, shortly after the incident, "there was no redness, swelling, bleeding, edema. The ear looked perfectly normal, and the eardrum looked perfectly normal, which is what you would expect in a viral inner ear infection but not in a very loud sound, which would also injure the eardrum." (Dkt. No. 196-2, Ex. K, Jackler Depo. at 152:8-15.)

DISCUSSION

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." *Onglyza Prod. Cases*, 90 Cal. App. 5th 776, 791 (2023), reh'g denied (May 9, 2023), review denied (July 26, 2023). "[A]dmissible expert testimony must first be provided to show that the defendants' products were capable of causing the [injury] at issue, in anyone. Without any evidence demonstrating the [product] was even capable of causing [the injury], the experts could not reliably conclude the [product] caused the plaintiff's [injury], even if other known causes were ruled out." *Id.* (cleaned up). So, "[i]n general, expert testimony is required to establish general causation in products liability cases." *Id.*; *see also Garner v. BNSF Ry. Co.*, 98 Cal. App. 5th 660, 671 n.3 (2024), reh'g denied (Jan. 22, 2024), review denied (Apr. 17, 2024) (cleaned up). ("General causation refers to whether a substance is capable of causing a particular injury or condition in the general population. Specific causation refers to whether the substance caused a particular individual's injury or condition.").

Apple moves for summary judgment on all of Plaintiffs' claims arguing the evidence is insufficient to support a finding the Apple AirPods Pro (first generation) could have caused the injury B.G. alleges (general causation), and there is no evidence to support Plaintiffs' theory of

[3] "[S]ound pressure doubles every 6 dB and is 10x higher over 20 dB." (Dkt. No. 196-2, Ex. H, Jackler Decl. at ¶ 33.)

specific causation because their specific causation expert's opinion is inadmissible under *Daubert*. The Court agrees.

A. Plaintiffs' Causation Theory

Plaintiffs' causation expert, Dr. Yoav Hahn, opines B.G.'s exposure to the Amber Alert through his AirPods Pro earbud, which was no more than 113.5 decibels, caused an acoustic shock that resulted in a perilymph fistula ("PLF") and caused B.G.'s hearing loss. (Dkt. No. 196-2, Ex. I, Hahn Depo. at 78:4-9; Dkt. No. 208-3, Ex. 2, Supp. Hahn Decl. at ECF 3.) His opinion is based on a differential diagnosis of B.G.'s symptoms.[4]

A PLF is a condition "where you have the perilymph fluid of the inner ear leaking from one of the windows of the inner ear into the middle ear." (Dkt. No. 196-2, Ex. I, Hahn Depo. at 50:19-22.) There are two different membranes or windows that can rupture in a PLF—a round window and an oval window. (*Id*. at 50:23-24; 70:16-19.) Dr. Hahn acknowledged it was unclear whether the round or the oval window sustained damage because no one documented perilymph fluid in B.G's ear following the incident, but he nonetheless opined the Amber Alert caused a PLF because "what we do know is that immediately after the tone came through his ear that he had symptoms consistent with a perilymphatic fistula." (*Id*. at 71:19-23; 88:17-89:5.) So, Dr. Hahn's opinion is based on the temporal proximity between the Amber Alert and B.G.'s discovery of his injury.

A PLF is most commonly caused by a blunt or penetrating trauma or a sudden or extreme barometric pressure change. (*Id*. at 50:25-51:23.) Dr. Hahn could identify only one documented case of noise-induced PLF which was reported more than 33 years ago by a firefighter whose right ear was 18 inches away from a siren which produced sound at 140 decibels—more than 100 times louder than the Amber Alert B.G. experienced. (*Id.* at 56:14-57:3.) Dr. Hahn was unaware of any report in any peer-reviewed medical or scientific journal of a PLF caused by a noise exposure under 120 decibels. (*Id*. at 57:5-12.)

[4] "Differential diagnosis is 'the determination of which of two or more diseases with similar symptoms is the one from which the patient is suffering, by a systematic comparison and contrasting of the clinical findings.'" *Clausen v. M/V NEW CARISSA*, 339 F.3d 1049, 1057 (9th Cir. 2003) (quoting Stedman's Medical Dictionary 474 (26th ed.1995)).

According to Dr. Hahn, an "acoustic shock" occurs when "a sudden tone around 120 decibels is delivered to the ear." (*Id.* at 22:3-9.) Dr. Hahn testified an "acoustic shock" can cause hearing loss, dizziness, pressure, ear pain, or hypersensitivity to sound. (*Id.* at 26:6-18.) Dr. Hahn was unaware of any documented cases of "acoustic shock" causing permanent hearing loss in peer-reviewed medical or scientific literature, nor had he seen a report of someone using an in-ear headphone or ear bud being diagnosed with or suspected of having acoustic shock as a result of exposure to noise through an in-ear headphone or earbud. (*Id.* at 28:1-5; 28:2-25; 48:23-29:24.) He described acoustic shock as "a newer diagnosis." (*Id.* at 29-1-5.) He acknowledged an "acoustic trauma," in contrast, is well-established in the medical literature as causing permanent hearing loss where there is a short exposure to sound in excess of 130 decibels. (*Id.* at 16:13-17:14.)

B. General Causation

The general causation inquiry asks whether the product at issue is capable of causing the injury alleged. *Onglyza Prod. Cases*, 90 Cal. App. 5th at 791. Here, the inquiry is whether Plaintiffs have offered evidence from which a reasonable trier of fact could conclude a brief exposure to a sound of no more than 113.5 decibels through an AirPods Pro earbud is capable of causing hearing injury of the type alleged.

The evidence is insufficient to support a finding in Plaintiffs' favor on general causation. Dr. Hahn, Plaintiffs' sole causation expert, is not qualified to offer a general causation opinion, does not offer a general causation opinion, and, in any event, does not identify any basis for a general causation opinion.

1. *Daubert* Legal Standard

Under Federal Rule of Evidence 702, a witness may offer expert testimony if the witness "is qualified as an expert by knowledge, skill, experience, training, or education," and the proponent of the witness demonstrates to the court that it is more likely than not that:

> (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
>
> (b) the testimony is based on sufficient facts or data;

(c) the testimony is the product of reliable principles and methods; and

(d) the expert's opinion reflects a reliable application of the principles and methods to the facts of the case.

Fed. R. Evid. 702. These criteria can be distilled to two overarching considerations: "reliability and relevance." *Ellis v. Costco Wholesale Corp*., 657 F.3d 970, 982 (9th Cir. 2011). The court's "task ... is to analyze not what the experts say, but what basis they have for saying it." *Daubert v. Merrell Dow Pharmaceuticals, Inc*. (*Daubert II*), 43 F.3d 1311, 1316 (9th Cir. 1995).

When determining the admissibility of expert testimony, a district court's role under Rule 702 is not to be a "fact finder" but a "gatekeeper." *Elosu v. Middlefork Ranch Inc*., 26 F.4th 1017, 1024 (9th Cir. 2022) (cleaned up). To fulfill its gatekeeper role, a district court must "ensure that the testimony is both relevant and reliable" before it allows such testimony. *United States v. Valencia-Lopez*, 971 F.3d 891, 898-99 (9th Cir. 2020) (cleaned up). By acting as a gatekeeper for all proffered expert testimony, a court "make[s] certain that an expert, whether basing testimony upon professional studies or personal experience, employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field." *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 152 (1999).

"The question of reliability probes whether the reasoning or methodology underlying the testimony" is valid. *Murray v. S. Route Mar. SA*, 870 F.3d 915, 922 (9th Cir. 2017) (cleaned up). To aid a court's evaluation of reliability, the Supreme Court in *Daubert I* "identified four factors that may bear on the analysis":

(1) whether the theory can be and has been tested,

(2) whether the theory has been peer reviewed and published,

(3) what the theory's known or potential error rate is, and

(4) whether the theory enjoys general acceptance in the applicable scientific community.

Id. (citing *Daubert v. Merrell Dow Pharms., Inc. (Daubert I)*, 509 U.S. 579, 593-94 (1993)). The expert's proponent "has the burden of proving admissibility." *Lust ex rel. Lust v. Merrell Dow Pharms., Inc.*, 89 F.3d 594, 598 (9th Cir. 1996).

2. Dr. Hahn is Not Qualified to Render a General Causation Opinion

Dr. Hahn is a clinical physician specializing in the fields of otolaryngology and neurotology who spends 99 percent of his time seeing patients in the office. He reached his opinion based on his experience seeing thousands of patients in his years of practice. (Dkt. No. 208-4, Hahn Depo. at 113:13-16.) Dr. Hahn has not conducted any research on the subject of hearing loss, participated in any observational studies, or published in medical or scientific literature related to hearing loss. (Dkt. No. 196-2, Ex. I, Hahn Depo. at 174:7-12.) His opinion was developed exclusively for purposes of this litigation.

Dr. Hahn is not qualified to provide an opinion as to general hearing loss causation because he has no relevant research or publication experience and has not engaged with the epidemiological data regarding hearing loss. *See Daubert II*, 43 F.3d at 1317 (holding that in deciding whether an expert is qualified, courts must consider "whether the experts are proposing to testify about matters growing naturally and directly out of research they have conducted independent of the litigation, or whether they have developed their opinions expressly for purposes of testifying"); *see also In re Bextra & Celebrex Mktg. Sales Pracs. & Prod. Liab. Litig*., 524 F. Supp. 2d 1166, 1184 (N.D. Cal. 2007) (excluding general causation opinion of expert who was "a clinical physician with no relevant research experience and who developed his opinion for the purpose of testifying"). Issues of general causation—the level of sound capable of causing the injury alleged here—are outside of Dr. Hahn's expertise. *See Avila v. Willits Env't Remediation Tr*., 633 F.3d 828, 838-39 (9th Cir. 2011) (holding the district court did not err in excluding expert on general causation based on his lack of scientific expertise regarding whether the challenged activity "could or did result in the creation of toxicologically significant amounts of dioxins").

3. Dr. Hahn Does Not Offer a General Causation Opinion

Aside from his lack of qualifications, Dr. Hahn has not attempted to answer the question of whether a 10-second exposure to noise stimulus of 113.5 decibels or less could cause a sudden profound hearing injury such as B.G.'s. Plaintiffs' insistence that Dr. Hahn's testimony "that acoustic shock is capable of causing hearing loss, dizziness, pressure, and ear pain" and "perilymphatic fistula is capable of causing tinnitus, vertigo, dizziness, ear fullness, and hearing

loss" and both caused B.G.'s injuries is sufficient to establish general causation is unpersuasive. (Dkt. No. 210 at 19.) Neither opinion addresses whether a 10-second exposure to noise stimulus of 113.5 decibels or less is capable of causing a profound hearing injury such as B.G.'s.

And Plaintiffs cannot rely on Dr. Hahn's differential diagnosis to establish general causation. 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. Indeed differential diagnosis assumes that general causation has been proven for the list of possible causes it eliminates." *See In re Silicone Gel Breast Implants Prods. Liab. Litig*., 318 F. Supp. 2d 879, 892 (C.D. Cal. 2004) (cleaned up).

4. Any General Causation Opinion is Unreliable

It follows from the above that to the extent Dr. Hahn's opinion can somehow be interpreted as a general causation opinion, it is unreliable and thus inadmissible. When an expert's opinion does not spring from research independent of the litigation, "the party proffering it must come forward with other objective, verifiable evidence that the testimony is based on scientifically valid principles" like peer-reviewed studies or a reputable source showing that the expert "followed the scientific method, as it is practiced by (at least) a recognized minority of scientists in their field." *Daubert II*, 43 F.3d at 1317-19. "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." *In re Viagra (Sildenafil Citrate) & Cialis (Tadalafil) Prod. Liab. Litig*., 424 F. Supp. 3d 781, 790 (N.D. Cal. Jan. 13, 2020). The Court must consider whether, for a given conclusion, "there is simply too great an analytical gap between the data and the opinion proffered." *General Electric Co. v. Joiner*, 522 U.S. 136, 146 (1997); *see also In re Roundup Prods. Liab. Litig*., 390 F. Supp. 3d 1102, 1112 (N.D. Cal. 2018), *aff'd sub nom. Hardeman v. Monsanto Co*., 997 F.3d 941 (9th Cir. 2021) ("Both unsound methods and unjustified extrapolations from existing data can require the Court to exclude an expert.").

Dr. Hahn does not identify anything other than temporal proximity related to one case (the litigation for which he is being paid) to support an opinion that a short exposure to noise at 113.5 decibels can cause hearing loss such as that suffered by B.G. He did not perform any research.

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

The cases on which Plaintiffs rely do not suggest otherwise. *See Clausen v. M/V NEW CARISSA*, 339 F.3d 1049, 1057 (9th Cir. 2003), as amended on denial of reh'g (Sept. 25, 2003); *Wendell v. GlaxoSmithKlin e LLC*, 858 F.3d 1227 (9th Cir. 2017). In both *Clausen* and *Wendell* the diseases at issue were so rare there was a paucity of literature concerning causation. *Clausen*, 339 F.3d at 1060 ("Oil spills, fortunately, are a rare enough occurrence, and the opportunities for scholarly research are few. In such a situation, a lack of published studies should not bar otherwise scientifically valid testimony."); *Wendell*, 858 F.3d at 1236 ("HSTCL is an exceedingly rare cancer, with only 100 to 200 cases reported since it was first recognized. It is not surprising that the scientific community has not invested substantial time or resources into investigating the causes of such a rare disease."). Noise-related hearing loss is neither rare nor is there a paucity of research regarding the casual relationship between noise and hearing loss. (Dkt. No. 196-2, Ex. I, Hahn Depo. at 13:19-15:12) (discussing the decades of research and wide breadth of scientific and medical research regarding noise-induced hearing loss and injuries). Unlike in *Wendell* and *Clausen*, "the causal relationship between [noise] and [hearing loss] has for several years been the topic of various scientific, medical, and regulatory examination, resulting in numerous animal and clinical studies and peer-reviewed literature." *In re Incretin-Based Therapies Prods. Liab. Litig.*, 524 F. Supp. 3d 1007, 1051 (S.D. Cal. 2021) (rejecting the plaintiffs' argument they could use differential diagnosis to prove general causation).

Plaintiffs' reliance on *Kennedy v. Collagen Corp.*, 161 F.3d 1226, 1228 (9th Cir. 1998), is also unavailing. In *Kennedy*, the expert "relied upon a wide variety of objective, verifiable evidence" and the Ninth Circuit found the district court erred by ignoring the scientific studies reinforcing the validity of the expert's methodology when excluding the expert's testimony as

unreliable. *Id*. at 1228. Dr. Hahn, in contrast, can point to no case study or anything in the medical literature supporting his opinion that an "acoustic shock" of less than 130 decibels (let alone less than 114 decibels) could cause a PLF resulting in permanent hearing loss. (Dkt. No. 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 scientific studies to support his methodology—or lack thereof.

Plaintiffs insist "the novelty of the AirPods Pro delivery of noise directly into the ear also add to the unique nature of this case." (Dkt. No. 210 at 21.) But Plaintiffs' own expert Dr. Casali testified that the test fixture he developed to determine the AirPods Pro's output when playing the Amber Alert signal was 113.5 decibels was designed "to be securely fitted to the concha and ear canal regions of the ear simulator…closely mimic[ing] a human ear."[5] (Dkt. No. 208-8 at ECF 11.) So, there is no foundation for Dr. Hahn's speculation that something about the ear bud's placement in the ear would affect the sound pressure as that is exactly what Dr. Casali tested. And Dr. Hahn testified he had never come across any scientific or medical literature discussing someone having been diagnosed with or suspected of having acoustic shock as a result of exposure to a noise that came through an in-ear headphone or earbud. (Dkt. No. 196-2, Ex. I, Hahn. Depo. at 49:15-24.) *See Daubert II*, 43 F.3d at 1319 ("We've been presented with only the experts' qualifications, their conclusions and their assurances of reliability. Under *Daubert*, that's not enough.").

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Because Plaintiffs have not offered evidence sufficient to support a finding of general causation, Apple is entitled to summary judgment in its favor. *See In re Roundup Prods. Liab. Litig*., 737 F. Supp. 3d 893, 898 (N.D. Cal. 2024).

C. Specific Causation

Plaintiffs have likewise failed to offer evidence from which a trier of fact could conclude

[5] Dr. Casali attests the "inanimate acoustical manikin" he used is "specifically designed to 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 of earphone sound output with high test-retest reliability, and its realistic pinnae and ear canal enable the earphone to be properly fitted as if in a human ear." (Dkt. No. 208-12, Casali Decl. at ECF 10.)

the brief Amber Alert through the AirPods Pro in fact caused B.G.'s injuries. *See Garner v. BNSF Ry. Co.*, 98 Cal. App. 5th 660, 671 n.3 (2024), reh'g denied (Jan. 22, 2024), review denied (Apr. 17, 2024) ("'Specific causation' refers to whether the substance caused a particular individual's injury or condition."). Again, the sole evidence of specific causation is Dr. Hahn's opinion that B.G.'s exposure to the Amber Alert through his AirPods Pro earbud, which was no more than 113.5 decibels, caused an acoustic shock that resulted in a PLF and caused B.G.'s hearing loss. (Dkt. No. 196-2, Ex. I, Hahn Depo. at 78:4-9; Dkt. No. 208-3, Ex. 2, Supp. Hahn Decl. at ECF 3.)

1. Dr. Hahn's Specific Causation Opinions are Unreliable

Dr. Hahn's specific causation opinions are based on unsupported assumptions and his differential diagnosis is legally and scientifically unsound.

First, Plaintiffs' failure to offer evidence as to general causation is fatal to Dr. Hahn's specific causation opinion. "Without being able to offer his general causation opinion, [Dr. Hahn] has no basis for "ruling in" [the Amber Alert] as a causal factor in [this] case, so he can't conclude that [the Amber Alert] was what actually caused [B.G's injury]." *In re Roundup Prods. Liab. Litig.*, 737 F. Supp. 3d at 897 (citing *Clausen*, 339 F.3d at 1057–58 ("The issue at this point in the process is which of the competing causes are generally capable of causing the patient's symptoms or mortality. Expert testimony that rules in a potential cause that is not so capable is unreliable.")); *see also Johnson & Johnson Talcum Powder Cases*, 37 Cal. App. 5th 292, 330 (2019) ("Without any evidence demonstrating the alleged toxin was even capable of causing disease, the experts could not reliably conclude the toxin caused the plaintiff's disease, even if other known causes were ruled out."). Plaintiffs' contention at oral argument that the general and specific causation requirements exist only for toxic tort and pharmaceutical cases has no legal nor common sense support. And Plaintiffs take out of context *Heller's* statement that clinical experience "should suffice for the making of a differential diagnosis even in those cases in which peer-reviewed studies do not exist to confirm the diagnosis of the physician." *Heller v. Shaw Indus., Inc.*, 167 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 research on the specific ailment or on the alleged causal agent was in its early stages." *Id.*

Second, Dr. Hahn's differential diagnosis—the predicate for his specific causation opinion—is unreliable. A differential diagnosis is "a methodology by which a physician rules in all potential causes of a disease, rules out those for which there is no plausible evidence of causation, and then determines the most likely cause among those that cannot be excluded." *Hardeman v. Monsanto Co*., 997 F.3d 941, 953 (9th Cir. 2021) (cleaned up).

Dr. Hahn's differential diagnosis is based upon his having ruled out a virus as the cause of B.G.'s injury. (Dkt. No. 208-2, Hahn Decl. at ECF 8-9.) "When an expert rules out a potential cause in the course of a differential diagnosis, the 'expert must provide reasons for rejecting alternative hypotheses using scientific methods and procedures and the elimination of those hypotheses must be founded on more than subjective beliefs or unsupported speculation.'" *Messick v. Novartis Pharms. Corp*., 747 F.3d 1193, 1198 (9th Cir. 2014) (quoting *Clausen*, 339 F.3d at 1058). Dr. Hahn's exclusion of a virus as a cause does not meet this standard. Dr. Jackler, Apple's causation expert, opined a COVID infection was the most likely cause of B.G.'s injuries. (Dkt. No. 196-2, Ex. H at ¶¶ 76-86.) And Dr. Hahn acknowledged "[s]udden hearing loss and vertigo can be caused by an inflammation of the inner ear often caused by a virus (viral labyrinthitis)" and agreed there are several case reports of COVID causing viral labyrinthitis. (Dkt. No. 208-2, Hahn Report at ECF 8.) But Dr. Hahn nevertheless ruled out COVID as the cause of B.G.'s injuries because "B.G. had no symptoms that could be attributed to COVID-19 or any other viral illness. Specifically, he did not have a cough, fever, or weakness that may have heralded a COVID-19 infection or other viral illness." (Dkt. No. 208-2, Hahn. Decl. at ECF 9.)

Dr. Hahn's reasoning is not scientifically grounded. He conceded there are several reports in the medical and scientific literature of a COVID infection causing sudden hearing loss in adolescents. (Dkt. No. 196-2, Ex. I, Hahn. Depo. at 140:24-141:6.) He also conceded hearing loss associated with a COVID infection could present with many of the same symptoms as B.G. experienced here: oral fullness, tinnitus, and otalgia. (*Id.* at 141:17-142:10.) He acknowledged many people infected with COVID are asymptomatic. (*Id.* at 142:14-18.) And most critically, he testified there was nothing "physiologically or pathologically" that allowed him *to rule out* COVID as the cause of B.G.'s hearing loss. (*Id*. at 151:6-11.) He nonetheless ruled out COVID

as a possible cause of B.G.'s injuries because B.G. did not have the symptoms "we associate with COVID-19 in the majority of patients...the fevers, the feeling badly." (*Id.* at 152:19-153:2.) The blatant inconsistencies in Dr. Hahn's reasoning render his opinion unreliable: while acknowledging many people with COVID are asymptotic, he nevertheless concluded B.G. could not have had COVID because the medical records do not show he had symptoms. Further, although he acknowledged hearing loss can be a symptom of COVID, he rejected it as a symptom of COVID in B.G without any scientific explanation. (*Id.* at 141:17-142:10.)

Plaintiffs' urging that because B.G. did not have a positive COVID test Dr. Hahn's exclusion of COVID was reasonable is unavailing. First, the argument ignores that in May 2020 community testing for COVID was not available. (Dkt. No. 196-2, Ex. H, Jackler Decl. at ¶ 46.) Second, just because someone did not take a COVID test does not mean they could not have had COVID. Third, B.G.'s treating otologist Dr. Jackson testified that when he examined B.G. shortly after the incident "there was no redness, swelling, bleeding, edema. The ear looked perfectly normal, and the eardrum looked perfectly normal, *which is what you would expect in a viral inner ear infection* but not in a very loud sound, which would also injure the eardrum." (Dkt. No. 196-2, Ex. K, Jackson Depo. at 152:8-15 (emphasis added).) So, Dr. Hahn's decision in July 2024 to rule out COVID as a possible cause of B.G.'s May 2020[6] hearing loss given everything now scientifically known is inexplicable and renders his opinion fatally unreliable. *See Westberry v. Gislaved Gummi AB*, 178 F.3d 257, 265 (4th Cir. 1999) ("A differential diagnosis that fails to take serious account of other potential causes may be so lacking that it cannot provide a reliable basis for an opinion on causation.").

Dr. Hahn's reliance on the temporal proximity between the Amber Alert and B.G.'s discovery of his injury does not salvage his opinion. (Dkt. No. 208-2, Hahn Report at ECF 9 ("[B.G.] had no hearing loss, dizziness, tinnitus, or other otologic symptoms before the sudden

[6] On March 13, 2020, President Trump declared a national emergency due to COVID-19. *See* Pres. Proc. No. 9994, 85 Fed. Reg. 15337 (Mar. 18, 2020); Joint resolution for national emergency, Pub. L. No. 118-3, 137 Stat 6 (2023).

incident with the Amber Alert transmitted through the AirPods Pro in the right ear."). That the Amber Alert was a theoretical cause is not enough to scientifically exclude COVID as a cause. *See Messick*, 747 F.3d at 1198 ("experts must provide scientifically sound reasons for excluding potential causes"); *Henricksen v. ConocoPhillips Co.*, 605 F. Supp. 2d 1142, 1175 (E.D. Wash. 2009) ("an association does not equal causation, and it is the duty of scientists to rigorously analyze the data to determine whether or not an association is causal. This means considering such factors as strength of association, consistency of association, specificity of the association, and biological plausibility."). Plaintiffs again rely on *Clausen* arguing the temporal proximity between the event and the injury "can provide compelling evidence of causation." (Dkt. No. 210 at 10 (quoting *Clausen*, 339 F.3d at 1059).) But the temporal proximity between the oil spill and the onset of the gill lesions in *Clausen* was just one piece of the "objective, verifiable evidence" the expert relied upon—not, as here, the only piece. *Clausen*, 339 F.3d at 1059; *see also Sanderson v. Int'l Flavors & Fragrances, Inc.*, 950 F. Supp. 981, 1004 (C.D. Cal. 1996) (excluding expert where "[a]t bottom, his opinion is founded primarily on the temporal connection between the [event] and the development of [] symptoms, as well as on his subjective, unverified, belief that [the product] can cause the types of injuries from which [plaintiff] suffers. This is not the method of science."). And in *Clausen* there did not exist other scientific evidence that soundly refuted the expert's causation theory; here, in contrast, there is decades of research that shows it takes noise at decibels exponentially higher than what B.G. experienced to cause an injury like B.G.'s. *Heller v. Shaw Indus., Inc.*, 167 F.3d 146 (3d Cir. 1999), likewise fails to support Plaintiffs' theory as there the court noted "the temporal relationship between an illness and a causal event" could support causation when the expert performs a "thorough differential diagnosis" ruling "out other possible causes of [injury]." *Id*. at 154. Indeed, *Heller* supports the unreliability of Dr. Hahn's specific causation opinion given he failed to exclude the most likely cause of B.G.'s injury. *Id.* at 156 ("where a defendant points to a plausible alternative cause and the doctor offers no explanation for why he or she has concluded that was not the sole cause, that doctor's methodology is unreliable").

In sum, Dr. Hahn's specific causation opinions are unreliable and inadmissible under

Daubert and Rule 702. Because Plaintiffs offer no other evidence of specific causation, Apple is entitled to summary judgment in its favor.

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There is no dispute B.G. experienced tragic hearing loss and injury, but to hold Apple liable for those injuries Plaintiffs must proffer evidence sufficient to find something Apple did caused those injuries. *See Johnson & Johnson Talcum Powder Cases*, 37 Cal. App. 5th 292, 324 (2019) ("[I]n a personal injury action causation must be proven within a reasonable medical probability based upon competent expert testimony. Mere possibility alone is insufficient to establish a prima facie case."). Without Dr. Hahn's testimony—testimony the Court has found unreliable—Plaintiffs cannot create a triable issue of fact on general or specific causation. Because causation is an element of all of Plaintiffs' claims, Apple is entitled to judgment in its favor. *Id.* at 323 ("Causation is an essential element of a tort action. Defendants are not liable unless their conduct was a legal cause of plaintiff's injury.") (cleaned up); *see also* Dkt. No. 209 at 21 (Plaintiffs concede causation required for their product defect claims).

CONCLUSION

For the reasons stated above, Apple's motion to exclude Dr. Hahn's opinion is GRANTED and Apple's motion for summary judgment is GRANTED. (Dkt. Nos. 196, 197.) Plaintiffs' motion for partial summary judgment is DENIED as moot. (Dkt. No. 201.)

The Court will enter judgment by separate order.

This Order disposes of Docket Nos. 196, 197, 201.

IT IS SO ORDERED.

Dated: April 28, 2025

Jacqueline Scott Corley

JACQUELINE SCOTT CORLEY
United States District Judge

United States District Court
Northern District of California