

FOR PUBLICATION

**UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT**

PETER ENGILIS, Jr.; CATHY
ENGILIS,

Plaintiffs - Appellants,

v.

MONSANTO COMPANY,

Defendant - Appellee.

No. 23-4201

D.C. No.
3:19-cv-07859-
VC

OPINION

Appeal from the United States District Court
for the Northern District of California
Vince Chhabria, District Judge, Presiding

Argued and Submitted March 7, 2025
Pasadena, California

Filed August 12, 2025

Before: Richard C. Tallman, Richard R. Clifton, and
Morgan B. Christen, Circuit Judges.

Opinion by Judge Christen

SUMMARY*

Expert Testimony

Affirming the district court's summary judgment in favor of Monsanto Company in multidistrict litigation concerning Monsanto's glyphosate-based herbicide Roundup, the panel held that the district court did not abuse its discretion in excluding the opinion of an expert witness that exposure to Roundup likely caused Peter Engilis's blood cancer.

To establish causation, expert witness Dr. Andrew Schneider conducted a differential etiology, which is an established scientific technique for establishing the cause of a medical condition. The district court concluded that the expert's differential etiology was unreliable pursuant to Fed. R. Evid. 702 because the expert failed to reliably rule out obesity as a potential cause of Engilis's cancer.

A proponent of expert testimony must always establish the admissibility criteria of Rule 702 by a preponderance of the evidence. There is no presumption in favor of admission.

The panel rejected Engilis's contention that Dr. Schneider adequately supported his assertion that Engilis was not obese. Aside from the reference to Engilis's fact sheet, Dr. Schneider's expert report provided no support for his conclusion that Engilis was not obese. At the *Daubert* hearing, Dr. Schneider conceded that he could not say whether Engilis was obese or not.

* This summary constitutes no part of the opinion of the court. It has been prepared by court staff for the convenience of the reader.

The panel also rejected Engilis's contention that the district court erred by discounting Dr. Schneider's clinical experience and overlooking that the weight of scientific literature had found no positive association between obesity and non-Hodgkin's lymphoma (NHL). Contrary to the body of scientific literature, Dr. Schneider testified on cross-examination, that, in his view, obesity was not a risk factor for NHL or chronic lymphocytic leukemia. Without articulating a reasoned basis for his opinion, Dr. Schneider failed to establish that his testimony was "based on sufficient facts or data." Fed. R. Evid. 702(b).

Because Dr. Schneider's excluded opinion was the sole evidence upon which Engilis relied to establish causation, the panel affirmed the district court's order granting summary judgment in favor of Monsanto.

COUNSEL

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OPINION

CHRISTEN, Circuit Judge:

This appeal arises from the long-running multidistrict litigation concerning Monsanto’s glyphosate-based herbicide called Roundup. Plaintiffs Peter Engilis, Jr. and Cathy Engilis challenge the district court’s order excluding their expert witness’s opinion that exposure to Roundup likely caused Peter Engilis’s blood cancer. To establish causation, the expert conducted a differential etiology.

A differential etiology is an established scientific technique for establishing the cause of a medical condition.¹ This technique is generally accomplished by first determining (or, “ruling in”) “all of the potential hypotheses that might explain a patient’s symptoms,” and then eliminating (or, “ruling out”) potential hypotheses “on the basis of a continuing examination of the evidence so as to reach a conclusion as to the most likely cause of the findings in that particular case.” *Clausen v. M/V New Carissa*, 339 F.3d 1049, 1057–58 (9th Cir. 2003). Courts, including our own, have generally recognized that a sufficiently reliable

¹ Although some cases have used the terms “differential etiology” and “differential diagnosis” interchangeably, the methodology is “more accurately referred to as differential etiology.” Fed. Jud. Ctr., *Reference Manual on Scientific Evidence* 617 (3d ed. 2011). In the clinical context, “differential diagnosis” refers to a process for “identifying a set of diseases or illnesses responsible for the patient’s symptoms,” whereas “‘differential etiology’ refers to identifying the causal factors involved in an individual’s disease or illness.” *Id.* at 617 n.211. Put another way, “differential diagnosis actually refers to a method of *diagnosing* an ailment, not determining its cause,” and “differential etiology . . . is a causation-determining methodology.” *Higgins v. Koch Dev. Corp.*, 794 F.3d 697, 705 (7th Cir. 2015) (citation modified).

differential etiology “may form the basis of an expert’s causation testimony.” *Messick v. Novartis Pharm. Corp.*, 747 F.3d 1193, 1197 (9th Cir. 2014).

Here, the district court concluded the expert’s differential etiology was unreliable pursuant to Federal Rule of Evidence 702 because the expert failed to reliably rule out obesity as a potential cause of Peter Engilis’s cancer. We affirm.

I

From 1990 to 2015, Peter Engilis, Jr.² routinely hand-sprayed Roundup several times per month at each of his three homes in Florida. In 2014, he was diagnosed with a blood cancer known as chronic lymphocytic leukemia (CLL), which is a type of non-Hodgkin’s lymphoma (NHL).

In November 2019, Engilis filed a lawsuit against Roundup manufacturer Monsanto in the Middle District of Florida, invoking the court’s diversity jurisdiction and asserting claims under Florida state law that were premised on the allegation that exposure to Roundup caused him to develop CLL. The case was subsequently transferred to a multidistrict litigation proceeding in the Northern District of California, in which thousands of cancer victims have alleged that Roundup caused their NHL. *See In re Roundup Prod. Liab. Litig.*, No. 3:16-md-02741-VC (N.D. Cal.); *Hardeman v. Monsanto Co.*, 997 F.3d 941, 950 (9th Cir. 2021).³

² Cathy Engilis is also a plaintiff in this action, but for present purposes, we need refer only to Peter Engilis.

³ In *Hardeman*, we affirmed a judgment in favor of the plaintiff in the first bellwether trial from the multidistrict litigation.

In a “toxic tort claim for physical injuries,” a plaintiff must “show that he was exposed to chemicals that could have caused the physical injuries he complains about (general causation), and that his exposure did in fact result in those injuries (specific causation).” *Golden v. CH2M Hill Hanford Grp.*, 528 F.3d 681, 683 (9th Cir. 2008). To demonstrate that Roundup caused Engilis’s cancer, Engilis relied on the expert opinion of board-certified oncologist Dr. Andrew Schneider. Dr. Schneider submitted an expert report offering opinions on both general causation and specific causation, only the latter of which is at issue in this appeal. To show specific causation—*i.e.*, that exposure to Roundup caused Engilis’s cancer—Dr. Schneider conducted a differential etiology.

First, Dr. Schneider “ruled in” all potential causes of Engilis’s cancer. To rule in Roundup as a possible cause, he relied upon general causation experts who opined that Roundup is capable of causing NHL and noted that Engilis had extensive exposure to Roundup. He also ruled in other risk factors, such as age, gender, ethnicity, geographic location, family history, occupational and environmental exposures, and various medical conditions. Second, he “ruled out” numerous risk factors based on his examination of the evidence. He ruled out, for example, other pesticides, insecticides, and asbestos, because no evidence suggested that Engilis was exposed to them.

Importantly, Dr. Schneider purported to rule out numerous medical conditions, including obesity. Dr. Schneider noted that, according to Engilis’s “Plaintiff Fact Sheet,” Engilis was “negative” for obesity, along with nearly

twenty other medical conditions.⁴ Dr. Schneider did not discuss whether obesity or any of the other identified conditions were capable of contributing to the development of NHL. But because Engilis was “negative” for the listed conditions, Dr. Schneider concluded that those conditions were not “suggested as related to or as causative factors to the onset of different types of cancers in Mr. Engilis’s case.” Ultimately, Dr. Schneider opined that exposure to Roundup caused or was a substantial factor in causing or contributing to Engilis’s cancer.

Monsanto moved to exclude Dr. Schneider’s opinion. The district court initially granted the motion in a brief order without a hearing. Engilis sought reconsideration, and the district court vacated its prior order to the extent it concerned Dr. Schneider’s specific causation opinion and scheduled a hearing.⁵

At the hearing on the motion to exclude, Monsanto’s counsel extensively cross-examined Dr. Schneider about his basis for ruling out Engilis’s obesity as a potential cause of Engilis’s cancer. In response, Dr. Schneider sought to defend his assertion that Engilis was not obese. But after conceding that he had not examined Engilis and could not say whether Engilis was obese or not, Dr. Schneider testified

⁴ The provenance of this fact sheet, including the identity of the person who prepared it, is not clear from the record.

⁵ The district court has “broad latitude” to determine “the appropriate form of the inquiry” under Rule 702. *Est. of Barabin v. AstenJohnson, Inc.*, 740 F.3d 457, 463 (9th Cir. 2014) (en banc), *overruled in part on other grounds by United States v. Bacon*, 979 F.3d 766 (9th Cir. 2020) (en banc). Although “pretrial ‘Daubert hearings’ are commonly used, . . . they are certainly not required.” *Id.* (citation omitted); *accord United States v. Holguin*, 51 F.4th 841, 852 (9th Cir. 2022).

that, regardless of whether Engilis was obese, he did not view obesity as a potential cause of NHL. During follow-on questioning, he stated that although some medical literature reports an association between obesity and the development of NHL, his clinical experience led him to believe that obesity does not contribute to NHL.

After the hearing, the district court issued an order excluding Dr. Schneider's specific causation opinion. The district court reasoned that Dr. Schneider did not reliably rule out obesity as a potential cause of Engilis's cancer, and that this rendered his differential etiology unreliable. Because the exclusion of Dr. Schneider's testimony left Engilis without evidence of specific causation, the district court granted summary judgment in favor of Monsanto. Engilis timely appealed.

II

We have jurisdiction pursuant to 28 U.S.C. § 1291. “We review a district court’s decision to exclude expert testimony for abuse of discretion.” *Tekoh v. County of Los Angeles*, 75 F.4th 1264, 1265 (9th Cir. 2023). We review an order granting summary judgment de novo. *Sonner v. Schwabe N. Am., Inc.*, 911 F.3d 989, 992 (9th Cir. 2018).

III

A

The parties agree that the admissibility of expert testimony is controlled by Federal Rule of Evidence 702. *See Elosu v. Middlefork Ranch Inc.*, 26 F.4th 1017, 1023 (9th Cir. 2022). That Rule provides that, “before admitting expert testimony, the district court must perform a gatekeeping role to ensure that the [proffered] testimony is both relevant and reliable.” *United States v. Valencia-Lopez*,

971 F.3d 891, 897–98 (9th Cir. 2020) (citation modified). Generally, “[e]xpert opinion testimony is relevant if the knowledge underlying it has a valid connection to the pertinent inquiry” and “reliable if the knowledge underlying it has a reliable basis in the knowledge and experience of the relevant discipline.” *Alaska Rent-A-Car, Inc. v. Avis Budget Grp., Inc.*, 738 F.3d 960, 969 (9th Cir. 2013) (citation omitted); *see also Est. of Barabin v. AstenJohnson, Inc.*, 740 F.3d 457, 463 (9th Cir. 2014) (en banc), *overruled in part on other grounds by United States v. Bacon*, 979 F.3d 766 (9th Cir. 2020) (en banc).

However, the parties dispute the significance of the 2023 amendment to Rule 702 and the effect of that amendment on our existing precedent. To address this issue, we briefly recount the history of the *Daubert* trilogy, the amendments to Rule 702, and our interpretation of that Rule in caselaw.

In *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, the Supreme Court held that Rule 702 governs the admissibility of expert testimony. 509 U.S. 579, 597 (1993). In so doing, the Supreme Court firmly rejected the *Frye* “general acceptance” test,⁶ which the Court described as inconsistent “with the liberal thrust of the Federal Rules and their general approach of relaxing the traditional barriers to opinion testimony.” *Id.* at 588 (citation modified); *see also Primiano v. Cook*, 598 F.3d 558, 564 (9th Cir. 2010).

⁶ In *Frye v. United States*, the D.C. Circuit excluded expert testimony because the methodology at issue was not “sufficiently established to have gained general acceptance in the particular field in which it belong[ed].” 293 F. 1013, 1014 (D.C. Cir. 1923).

Rule 702 was first adopted in 1975 as part of the original enactment of the Federal Rules of Evidence.⁷ At the time of *Daubert*, Rule 702 provided that “[i]f scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise.” Fed. R. Evid. 702 (1975). Interpreting Rule 702, *Daubert* held that a district court “[f]aced with a proffer of expert scientific testimony” must “determine at the outset” by a preponderance of the evidence, Fed. R. Evid. 104(a), that “the expert is proposing to testify to (1) scientific knowledge that (2) will assist the trier of fact to understand or determine a fact in issue.” *Daubert*, 509 U.S. at 592 & n.10. As *Daubert* explained, the Rule’s requirement that opinion testimony “assist the trier of fact” “goes primarily to relevance,” and the Rule’s reference to scientific “knowledge” demands a showing of reliability. *Id.* at 590–91 (quoting Fed. R. Evid. 702). Thus, a district court discharges its “gatekeeping role” under Rule 702 by “ensur[ing] that any and all scientific testimony or evidence admitted is not only relevant, but reliable.” *Id.* at 589, 597; accord *United States v. Ruvalcaba-Garcia*, 923 F.3d 1183, 1188 (9th Cir. 2019).

After *Daubert*, the Supreme Court continued to refine its interpretation of Rule 702 in *General Electric Co. v. Joiner*, 522 U.S. 136 (1997), and *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999). *Joiner* confirmed that in applying abuse-of-discretion review to a district court’s ruling on the admissibility of expert testimony, a court of appeals “may

⁷ See Act to Establish Rules of Evidence for Certain Courts and Proceedings, Pub. L. No. 93-595, 88 Stat. 1926, 1937 (1975).

not categorically distinguish between rulings allowing expert testimony and rulings disallowing it.” *Joiner*, 522 U.S. at 142. The Court also held that the reliability test may be applied to an expert’s reasoning process. *See id.* at 146 (stating that “nothing . . . requires a district court to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert” and that “[a] court may conclude that there is simply too great an analytical gap between the data and the opinion proffered”). In *Kumho*, the Court clarified that the district court’s gatekeeper function applies to all expert testimony, not just scientific expert testimony. *See Kumho*, 526 U.S. at 141. *Kumho* also explained that the reliability standard is applied flexibly, depending on the relevant field of expertise. *See id.* at 149–50. Together, these three decisions—*Daubert*, *Joiner*, and *Kumho*—comprise the “*Daubert* trilogy.” *Truck Ins. Exch. v. MagneTek, Inc.*, 360 F.3d 1206, 1209 (10th Cir. 2004).

In 2000, Rule 702 was amended for the first time to codify the holdings of the *Daubert* trilogy, and to resolve conflicts that had arisen within the courts about the meaning of that trilogy. Fed. R. Evid. 702 advisory committee’s note to 2000 amendment; Fern M. Smith, *Report of the Advisory Committee on Evidence Rules 6–7* (1999) [hereinafter May 1, 1999 Report], <https://perma.cc/LH3V-5GBB>. The amendment “clearly envision[ed] a more rigorous and structured approach” to Rule 702 than some courts were then employing. May 1, 1999 Report at 7. It “affirm[ed] the trial court’s role as gatekeeper and provide[d] some general standards that the trial court must use to assess the reliability and helpfulness of proffered expert testimony.” Fed. R. Evid. 702 advisory committee’s note to 2000 amendment.

To this end, the 2000 amendment added three reliability-based requirements, now found in subsections (b), (c), and

(d). Thus, after a minor restyling amendment in 2011,⁸ Rule 702 provided that a qualified expert witness may testify if:

(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 has reliably applied the principles and methods to the facts of the case.

Fed. R. Evid. 702 (2011). The Advisory Committee's note explained that the proponent of expert testimony "has the burden of establishing that the pertinent admissibility requirements are met by a preponderance of the evidence." Fed. R. Evid. 702 advisory committee's note to 2000 amendment (citing Fed. R. Evid. 104(a)).

The 2000 amendment to Rule 702 did not eliminate confusion and establish uniformity. Patrick J. Schiltz, *Report of the Advisory Committee on Evidence Rules, in Comm. on Rules of Prac. & Proc., June 7, 2022 Agenda Book* 866, 871 (2022), <https://perma.cc/AY5J-GAZA>; see also Thomas D. Schroeder, *Toward A More Apparent Approach to Considering the Admission of Expert Testimony*, 95 Notre Dame L. Rev. 2039, 2039–59 (2020). The Rule was therefore amended again in December 2023 to expressly require a proponent of expert testimony to

⁸ The 2011 amendment to Rule 702 sought "to make [it] more easily understood and to make style and terminology consistent throughout the rules," and was not intended to implement any substantive changes. Fed. R. Evid. 702 advisory committee's note to 2011 amendment.

“demonstrate[] to the court that it is more likely than not that” the four admissibility requirements are satisfied. Fed. R. Evid. 702 (2023). The amendment also modified subsection (d), which now requires that “the expert’s opinion reflects a reliable application of the principles and methods to the facts of the case.” *Id.*

This amendment sought to “clarify and emphasize” that proffered expert testimony must meet the admissibility requirements of Rule 702 by a preponderance of the evidence. Fed. R. Evid. 702 advisory committee’s note to 2023 amendment. Before the amendment, “many courts” had erroneously held “that the critical questions of the sufficiency of an expert’s basis, and the application of the expert’s methodology, are questions of weight and not admissibility.” *Id.* Properly applied, Rule 702 requires that challenges to an expert’s opinion go to the weight of the evidence only if a court first finds it more likely than not that an expert has a sufficient basis to support an opinion. *Id.* The amendment also aimed “to emphasize that each expert opinion must stay within the bounds of what can be concluded from a reliable application of the expert’s basis and methodology.” *Id.* “Judicial gatekeeping is essential” to ensure that an expert’s conclusions do not “go beyond what the expert’s basis and methodology may reliably support.” *Id.* As the Advisory Committee’s note explains, the amendment did not “impose[] any new, specific procedures,” and was “simply intended to clarify” existing law. *Id.*

For present purposes, we need not undertake an exhaustive examination of the effects, if any, of the 2023

amendment on our caselaw.⁹ But insofar as the parties argue about the degree to which the amendments establish, or refute, that Rule 702 is a “liberal” standard that favors admission as “the rule, not the exception,” we confirm that a proponent of expert testimony must always establish the admissibility criteria of Rule 702 by a preponderance of the evidence and that there is no presumption in favor of admission.

Our precedent has long recognized the burden-of-proof principles that the amendment sought to clarify. We have expressly held that the “preliminary questions” of Rule 702 “must be established by a preponderance of proof.” See *United States v. Rincon*, 28 F.3d 921, 923 (9th Cir. 1994); see also *United States v. Evans*, 728 F.3d 953, 960 n.6 (9th Cir. 2013). This is unsurprising, as *Daubert* itself held that the requirements of relevance and reliability must be “established by a preponderance of proof” pursuant to Rule 104(a). *Daubert*, 509 U.S. at 592 n.10.

Several of our cases have stated that “Rule 702 should be applied with a ‘liberal thrust’ favoring admission.” *Messick*, 747 F.3d at 1196 (quoting *Daubert*, 509 U.S. at 588); *Wendell v. GlaxoSmithKline LLC*, 858 F.3d 1227, 1232 (9th Cir. 2017). Rule 702 liberalized the admission of expert testimony as compared to the *Frye* test, but it did not

⁹ Because the district court resolved the motion to exclude two weeks before the 2023 amendment went into effect on December 1, 2023, it applied the prior version of Rule 702. On appeal, we apply the version of Rule 702 in effect at the time of the district court’s ruling. See *Barabin*, 740 F.3d at 463 & n.4; see also *D’Pergo Custom Guitars, Inc. v. Sweetwater Sound, Inc.*, 111 F.4th 125, 140 n.11 (1st Cir. 2024); *In re Onglyza (Saxagliptin) & Kombiglyze (Saxagliptin & Metformin) Prods. Liab. Litig.*, 93 F.4th 339, 345 n.4 (6th Cir. 2024). But we note that our decision would be the same under either version of the Rule.

establish a categorical preference for admitting expert testimony. See *Joiner*, 522 U.S. at 142 (emphasizing a district court’s “gatekeeper” role and holding that a court of appeals “may not categorically distinguish between rulings allowing expert testimony and rulings disallowing it”); see also *Daubert*, 509 U.S. at 588. Although Rule 702 “allow[s] district courts to admit a somewhat broader range of scientific testimony than would have been admissible under *Frye*, [it] leave[s] in place the ‘gatekeeper’ role of the trial judge in screening such evidence.” *Joiner*, 522 U.S. at 142; see also *Weisgram v. Marley Co.*, 528 U.S. 440, 455 (2000) (noting that parties seeking to introduce expert testimony must meet “exacting standards of reliability”). Our caselaw should not be understood to suggest a presumption of admission. There is no such presumption, as a proponent of expert testimony must always establish the admissibility requirements of Rule 702 by a preponderance of the evidence. See Fed. R. Evid. 702 (2023).

We have also stated that, where experts’ opinions “are not the ‘junk science’ Rule 702 was meant to exclude,” *Wendell*, 858 F.3d at 1237 (citation omitted), “the interests of justice favor leaving difficult issues in the hands of the jury and relying on the safeguards of the adversary system . . . to ‘attack[] shaky but admissible evidence,’” *id.* (quoting *Daubert*, 509 U.S. at 596). To be sure, Rule 702 is concerned with “the soundness of [the expert’s] methodology,” rather than “the correctness of the expert’s conclusions.” *Primiano*, 598 F.3d at 564 (citation omitted). But “shaky” expert testimony, like any expert testimony, must still be “admissible,” and this requires a determination by the trial court that it satisfies the threshold requirements established by Rule 702. See *Wendell*, 858 F.3d at 1237 (citation omitted); accord *Messick*, 747 F.3d at 1196. Only

“[i]f the proposed testimony meets the thresholds of relevance and reliability” is its proponent “entitled to have the jury decide upon its credibility.” *Elosu*, 26 F.4th at 1024 (citation modified). The district court “cannot abdicate its role as gatekeeper,” nor “delegat[e] that role to the jury.” *Hardeman*, 997 F.3d at 960 n.11 (citation omitted).

Consistent with the 2023 amendment, our precedent establishes that Rule 702 requires a proponent of expert testimony to demonstrate each of the requirements of Rule 702 by a preponderance of the evidence.

B

With that historical background, we now turn to the case before us. The district court excluded Dr. Schneider’s causation opinion as unreliable pursuant to Rule 702 because Dr. Schneider failed to follow the differential etiology methodology his report purported to employ and failed to reliably rule out obesity as a potential cause of Engilis’s cancer. In the district court’s view, Dr. Schneider’s testimony was flawed in two ways. First, Dr. Schneider asserted that Engilis was not obese and relied on this assertion of fact in his analysis, but failed to justify it. Second, Dr. Schneider pivoted on cross-examination and attempted to argue that obesity is not actually a risk factor for NHL, but he also failed to justify that position. We address each of these issues in turn.

1

Engilis argues Dr. Schneider adequately supported his assertion that Engilis was not obese. In Engilis’s view, the district court erred because it overlooked genuine disputes of material fact about Engilis’s weight and supposed obesity. We disagree.

The district court’s “responsibility to screen expert testimony,” *Elosu*, 26 F.4th at 1020, encompasses the requirement that expert testimony be “based on sufficient facts or data,” Fed. R. Evid. 702(b). This element “requires foundation.” *Elosu*, 26 F.4th at 1025. The “key inquiry” is “whether an expert had sufficient factual grounds on which to draw conclusions.” *Hyer v. City & County of Honolulu*, 118 F.4th 1044, 1056 (9th Cir. 2024) (citation omitted).

Dr. Schneider expressly asserted in his expert report that Engilis was not obese and relied on this proposition to form his differential etiology opinion. The report states that Engilis’s “Plaintiff Fact Sheet” indicates Engilis is “negative” for several medical conditions, including obesity. At the outset of his analysis, Dr. Schneider therefore ruled out obesity as a causative factor in the onset of Engilis’s cancer.

Aside from the reference to Engilis’s fact sheet, Dr. Schneider’s expert report provides no support for his conclusion that Engilis was not obese. The expert report does not cite any of Engilis’s medical records to support the conclusion that he was not obese. It does not reference Engilis’s weight, BMI,¹⁰ or body shape. And it does not cite or rely on any testimony from Engilis.

At the *Daubert* hearing, counsel for Monsanto cross-examined Dr. Schneider about the basis for his opinion that Engilis was not obese. Counsel presented Dr. Schneider

¹⁰ “BMI” is an acronym for “body mass index” and is a measure of weight in relation to height. Nat’l Heart, Lung, & Blood Inst., *Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: The Evidence Report* xiv (1998). As Dr. Schneider acknowledged at the *Daubert* hearing, a BMI over 30 qualifies as obese.

with medical records suggesting that, contrary to Dr. Schneider's assertion in his report, Engilis may have been obese. For instance, one record from December 2000 showed Engilis then had a BMI of 32.9. And according to another record, Engilis had a BMI of 33 in November 2014. Confronted with these records, Dr. Schneider countered that a diagnosis of obesity is more complex than merely measuring BMI, as BMI does not account for the distribution of fat on a person's body, which he regarded as the most salient consideration in determining obesity. But Dr. Schneider admitted that he did not know how Engilis's weight was distributed, and that he had not ever spoken to Engilis or seen a photo of him. Ultimately, Dr. Schneider conceded that he "certainly can't say whether [Engilis is] obese or not."

To the extent Dr. Schneider testified on cross-examination about the shortcomings of BMI as a measure of obesity, this opinion was inadmissible for a separate reason: it was not disclosed in his expert report. *See* Fed. R. Civ. P. 26(a)(2)(B). An expert's written report must contain, among other things, "a complete statement of all opinions the witness will express and the basis and reasons for them," and "the facts or data considered by the witness in forming them." Fed. R. Civ. P. 26(a)(2)(B)(i)-(ii). The federal rules generally "forbid[] the use of any information not properly disclosed." *Key v. Qualcomm Inc.*, 129 F.4th 1129, 1143 (9th Cir. 2025). Thus, "when a party fails to provide information required by Rule 26, such party 'is not allowed to use that information or witness to supply evidence on a motion, at a hearing, or at a trial, unless the failure was substantially justified or is harmless.'" *Id.* (quoting Fed. R. Civ. P. 37(c)(1)).

Dr. Schneider's report does not mention BMI at all, let alone describe its limitations. Moreover, although Dr. Schneider testified that fat distribution is the proper measure of obesity, he did not make that assertion—or even mention fat distribution—in his report.¹¹ And even if he had, Dr. Schneider admitted at the *Daubert* hearing that he had not undertaken any evaluation of Engilis's weight—using BMI, fat distribution, or any other metric. Indeed, in contravention of the assertion made in his report, Dr. Schneider conceded that he could not say whether Engilis was obese or not.

Ultimately, the critical question for purposes of the court's gatekeeping function is not whether Engilis was actually obese or what inferences about obesity the record might support. Instead, the issue is whether Dr. Schneider's opinion that Engilis was not obese is "based on sufficient facts or data." See Fed. R. Evid. 702(b). For that inquiry, what matters is the evidence Dr. Schneider actually considered and the conclusions he actually drew from that evidence in the process of forming his opinion as disclosed in his expert report. Here, the district court properly concluded that Engilis failed to establish by a preponderance of the evidence that Dr. Schneider's conclusion was based on sufficient facts or data.

¹¹ Engilis also seeks to support Dr. Schneider's conclusion that Engilis was not obese with his own deposition testimony about his weight. Engilis notes that he testified he was roughly 170 pounds in 1990, and slowly put on weight over the years until he was roughly 195 pounds at the time of his deposition in 2021. Engilis argues that "simple arithmetic" suggests a linear weight gain of about 0.8 pounds per year, and that under this rate, he would not have become obese until 2010. But Dr. Schneider did not conduct any of this analysis in his report. Moreover, even if the analysis was proper and disclosed, it suggests that Engilis was obese before his CLL diagnosis in 2014.

2

Engilis next argues the district erred by concluding that Dr. Schneider failed to reliably support his conclusion that, even if Engilis was obese, he properly ruled out obesity because it is not a risk factor for NHL. More specifically, Engilis contends that the district court erred by discounting Dr. Schneider's clinical experience and overlooking that the weight of scientific literature has found no positive association between obesity and NHL. We reject Engilis's position.

As explained, a differential etiology "starts with ruling in all potential causes, then ruling out the ones as to which there is no plausible evidence of causation, and then determining the most likely cause among those that cannot be excluded." *Hardeman*, 997 F.3d at 965 (citation modified). Dr. Schneider's expert report did not discuss whether obesity is properly recognized as a potential cause of NHL. Instead, Dr. Schneider simply concluded that obesity could be ruled out as a potential cause because, according to Engilis's "fact sheet," Engilis was "negative" for obesity. Because Dr. Schneider's report did not grapple with the relationship between obesity and NHL, it did not cite or describe any medical literature or studies on that relationship.

At the *Daubert* hearing, after counsel cross-examined Dr. Schneider about his basis for asserting that Engilis was not obese, Dr. Schneider pivoted to contesting that obesity is capable of causing NHL. During questioning, Dr. Schneider conceded that obesity is recognized in medical literature as a possible risk factor for NHL and testified that he had seen articles on the association between obesity and NHL throughout his career. He further stated that he had reviewed

papers on the topic and accepted that at least some of them reported a positive association between obesity and the development of NHL.

Contrary to this body of scientific literature, Dr. Schneider testified on cross-examination that, in his view, obesity is not a specific risk factor for NHL or CLL. Based on his 34 years of practicing oncology, he stated that he personally saw no association between weight and CLL and that he saw “fat people get CLL” and saw “skinny people get CLL.” Dr. Schneider also referred to an article he found on Google the night before the *Daubert* hearing, which purportedly showed that, of forty studies that examined the relationship between obesity and NHL, only three showed a positive association. As to Engilis specifically, Dr. Schneider explained that he considered his BMI as a potential cause, but “rejected it.”

Engilis insists that the article Dr. Schneider mentioned at the *Daubert* hearing shows that Dr. Schneider properly ruled out obesity as a risk factor. But this article cannot salvage Dr. Schneider’s opinion because, irrespective of that article’s conclusions, Dr. Schneider did not cite it or any other relevant literature in his report. Without a citation to scientific literature in Dr. Schneider’s report, Engilis cannot now claim that scientific literature is the basis for Dr. Schneider’s opinion. *See* Fed. R. Civ. P. 26(a)(2)(B).

Engilis also argues that, by excluding Dr. Schneider’s opinion, the district court improperly dismissed Dr. Schneider’s decades of education, training, and clinical experience with NHL and CLL as a board-certified oncologist. To be sure, an expert’s specialized knowledge and experience is of critical significance when the district court determines whether a witness is “qualified as an

expert.” Fed. R. Evid. 702. Importantly, such knowledge and experience can also “serve as the requisite ‘facts or data’ on which they render an opinion.” *Elosu*, 26 F.4th at 1024. Because “‘medical knowledge is often uncertain’ due to the complexity of the human body and the novelty of emerging medical issues,” we have noted that “‘physicians must use their knowledge and experience as a basis for weighing known factors along with the inevitable uncertainties’ to make ‘a sound judgment’ in each case.” *Id.* at 1025 (quoting *Primiano*, 598 F.3d at 565–66). Accordingly, “when an expert establishes causation based on a differential [etiology], the expert may rely on his or her extensive clinical experience as a basis for ruling out a potential cause of the disease.” *Wendell*, 858 F.3d at 1237.

But when ruling out potential causes, an expert “must provide reasons for rejecting alternative hypotheses ‘using scientific methods and procedures’” and must rely on “more than ‘subjective beliefs or unsupported speculation.’” See *Clausen*, 339 F.3d at 1058 (quoting *Claar v. Burlington N. R.R. Co.*, 29 F.3d 499, 502 (9th Cir. 1994)); accord *Messick*, 747 F.3d at 1198. And the expert must do so in their expert report. Fed. R. Civ. P. 26(a)(2)(B)(i)-(ii). Here, aside from Dr. Schneider’s conclusory assertion of his subjective opinion at the *Daubert* hearing, he provided no explanation for ruling out obesity as a possible risk factor. Without articulating a reasoned basis for his opinion, Dr. Schneider failed to establish that his testimony was “based on sufficient facts or data.” Fed. R. Evid. 702(b).

Our decisions in *Messick*, *Wendell*, and *Hardeman*, upon which Engilis relies, do not hold otherwise. In each of these cases, experts grounded their opinion in existing scientific literature and studies, however limited, as well as their clinical experience. In *Messick*, we noted “there is nothing

wrong with a doctor relying on extensive clinical experience when making a differential [etiology],” but the expert there also relied on existing medical literature to form his opinion. *Messick*, 747 F.3d at 1198. Moreover, the expert described his clinical experience in detail, opining that—based on his extensive experience diagnosing and treating patients with osteonecrosis of the jaw (ONJ)—a patient without cancer or radiation exposure would not develop long-term ONJ unless they received intravenous bisphosphonate treatments. *Id.* In *Wendell*, we considered opinions from doctors “at or near the top of their field” who had “extensive clinical experience” with the rare disease at issue in that case. *Wendell*, 858 F.3d at 1237. The relative dearth of medical literature addressing causation for the exceedingly rare cancer at issue demanded some reliance on clinical experience, but the doctors nevertheless also consulted and relied upon the studies and literature that did exist. *See id.* at 1236. *Hardeman* concluded that, like the experts in *Messick* who “relied on clinical experience as well as an examination of medical literature and plaintiff’s records,” the plaintiff’s experts relied on “epidemiological, animal, and cell studies.” *Hardeman*, 997 F.3d at 963.

None of these cases stands for the proposition that an expert’s mere talismanic invocation of “clinical experience” suffices to establish that a differential etiology passes muster under Rule 702. Instead, they establish that clinical experience may be one basis on which an expert supports their analysis. *See Wendell*, 858 F.3d at 1237; *Elosu*, 26 F.4th at 1024. We also note that, given the flexibility of the reliability inquiry, *Valencia-Lopez*, 971 F.3d at 898, clinical experience that might constitute “sufficient facts or data” in one case, Fed. R. Evid. 702(b), might not suffice in another. For example, reliance on extensive clinical experience might

be particularly informative—and perhaps necessary—in the context of a rare disease. But it might be less probative in the context of a more common disease for which there exists a substantial body of established literature.

Unlike in *Messick*, *Wendell*, and *Hardeman*, the expert report in this case does not describe the details of its author’s clinical experience, nor does it include an assessment of the existing literature. The opinion lacks the required reasoned explanation for the assertion that obesity is not a risk factor for NHL, and for Dr. Schneider’s decision to set aside, *sub silentio*, the corpus of medical literature addressing a relationship between obesity and NHL.

Engilis also contends that Dr. Schneider was not required to rule out obesity as a possible cause because he need only have ruled out “obvious” causes. For support, Engilis notes that, to assess whether an expert’s testimony is sufficiently reliable, courts may consider “[w]hether the expert has adequately accounted for obvious alternative explanations.” Fed. R. Evid. 702 advisory committee’s note to 2000 amendment. We are not persuaded.

Engilis is correct that “we have consistently recognized the difficulties in establishing certainty in the medical sciences.” *Messick*, 747 F.3d at 1198; *see also Daubert*, 509 U.S. at 590 (noting “there are no certainties in science”). Given this uncertainty, “[w]e do not require experts to eliminate all other possible causes of a condition for the expert’s testimony to be reliable.” *Wendell*, 858 F.3d at 1237. To meet the threshold of reliability, the expert need not purport to conclusively “identify the sole cause of a medical condition.” *Messick*, 747 F.3d at 1199. But where an expert rules out a potential cause, the expert “must provide scientifically sound reasons” for doing so. *Id.* at

1198; *accord Clausen*, 339 F.3d at 1058. Here, Dr. Schneider did not assert that he was unable to rule out obesity or other possible causes. *See Wendell*, 858 F.3d at 1237 (describing “the alleged inability of the experts to rule out an idiopathic origin” or another possible cause). Nor did Dr. Schneider opine that he could not determine which of multiple risk factors caused the condition at issue. *See Messick*, 747 F.3d at 1199. Instead, Dr. Schneider rejected obesity as a possible cause, but inadequately explained his reasons for doing so. Accordingly, the district court properly concluded that Engilis failed to establish by a preponderance of the evidence that Dr. Schneider’s conclusion was based on sufficient facts or data. *See Fed. R. Evid.* 702(b). In doing so, the court properly exercised its gatekeeping function.

IV

The district court did not abuse its discretion by granting Monsanto’s motion to exclude.¹² Because Dr. Schneider’s excluded opinion was the sole evidence upon which Engilis relied to establish causation, we affirm the district court’s order granting summary judgment in favor of Monsanto.

AFFIRMED.

¹² Because we affirm the district court’s exclusion of Dr. Schneider’s opinion, we need not consider Monsanto’s alternative argument that Engilis’s claims are preempted by federal law.