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DIVISION II

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STATE OF WASHINGTON

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IN THE COURT OF APPEALS OF THE STATE OF WASHINGTON

DIVISION II

ADVANCED HEALTH CARE, INC., a Washington corporation, Respondent, v. ARTHUR T. GUSCOTT, Appellant.	No. 41969-6-II PUBLISHED OPINION

HUNT, P.J. —Arthur Guscott appeals the superior court's in limine exclusion of his three expert witnesses' causation testimonies and its resultant summary judgment dismissal of his tort counterclaims against Advanced Heath Care, Inc. (AHC), which had sued him for failure to pay for services. He argues that the superior court (1) erroneously ruled that his experts' testimonies did not meet the *Frye* test[1] and misapplied the *Frye* test by requiring scientific proof that every aspect of his experts' causation opinions was not novel; (2) should have instead applied the *Daubert* test[2] to evidence supporting his civil tort counterclaims; (3) erred in granting summary judgment to AHC because Guscott lacked evidence of causation; and (4) erred in denying his motion for reconsideration. We hold that Guscott's experts' testimonies did not involve novel

[1] *Frye v. United States*, 54 U.S. App. D.C. 46, 293 F. 1013 (1923).

[2] *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579, 113 S. Ct. 2786, 125 L. Ed. 2d 469 (1993).

scientific theories or methods and, therefore, they did not implicate *Frye*. We reverse the superior court's exclusion of Guscott's experts' testimonies for failure to meet the *Frye* test and its summary judgment dismissal of Guscott's counterclaims against AHC; and we remand for trial.

FACTS

I. Ruptured Abdominal Aortic Aneurism

On Christmas Day 2006, 86-year-old Arthur Guscott was attending a church service with his AHC caregiver. Guscott had previously been diagnosed with Parkinson's disease and a 9.4 centimeter abdominal aortic aneurism,[3] which was very large and rapidly growing but still intact. Guscott left the church service with his caregiver pushing him in a wheelchair. Guscott's wheelchair hit a crack in the sidewalk; Guscott fell out of the wheelchair, hitting his elbow and his buttocks hard on the cement. Guscott's caregiver took him to the emergency room at Providence St. Peter Hospital, where Guscott was treated by Dr. Erik Penner.

Dr. Penner examined Guscott, consulted his medical records, and learned that he had a large abdominal aortic aneurism, for which he had previously signed a Do Not Resuscitate (DNR) directive and had refused surgery. Dr. Penner noted that Guscott had a low blood pressure of "91/63", which could be a sign of a ruptured abdominal aortic aneurism. Clerk's Papers (CP) at 110. After speaking with Guscott and performing a physical examination on him, however, Dr. Penner concluded that Guscott did not have any "tenderness" or "pain in his abdomen," suggesting that the abdominal aortic aneurism had not ruptured. CP at 111.

[3] According to Dr. Nam T. Tran's deposition testimony, an abdominal aortic aneurism is an enlargement of the abdominal aorta that is "two times the normal size of the normal aorta diameter or greater than three centimeters." Clerk's Papers (CP) at 95.

Because Guscott had primarily complained about pain in his buttocks, Dr. Penner ordered a pelvic x-ray to rule out the possibility of a fracture, a full electrocardiogram (EKG), a complete blood count (CBC), a basic metabolic panel (BMP), and a urinalysis. Dr. Penner did not find anything particularly concerning about Guscott's medical condition from these tests.[4] When the nurses checked Guscott's blood pressure again, it had risen to "112/68". CP at 114. Dr. Penner found this increase in blood pressure "reassuring," and he became "less concern[ed]" about Guscott's having a ruptured abdominal aortic aneurism because his blood pressure was rising and stabilizing rather than staying persistently low. CP at 115. Dr. Penner discharged Guscott as having merely "contusions" (or bruises) on his buttocks and some cuts on his right elbow. CP at 116.

At home that evening, the caretaker applied an ice pack to Guscott's right elbow in accordance with the hospital's discharge instructions. Guscott was "groaning" and "moaning loudly," and his transfers from his recliner to his wheelchair and toilet appeared very painful. CP at 261. The two caretakers who worked with Guscott the next morning noted that (1) his blood pressure had remained stable at 113/79; (2) his elbow was still "pink," "swollen," and "bleeding"; (3) he complained of pain "all over," but this pain was primarily concentrated in his coccyx; and (4) he had difficulty urinating. CP at 257-58, 262. The caretakers continued icing his elbow, gave him two Tylenol in addition to his usual morning prescriptions, scheduled an

[4] Although Guscott's BMP showed that he had "baseline anemia," Dr. Penner was relatively unconcerned about anemia because he did not believe Guscott had any "active bleeding" and because some people are persistently anemic. CP at 113-14. Guscott's BMP also showed other "mild abnormalities" that did not concern Dr. Penner. CP at 113.

appointment with his personal physician for December 28, and notified his daughter in Chicago so she could attend. Guscott's evening caretaker gave him two more Tylenol for his pain.

On December 27, Guscott's daughter arrived and spent the afternoon reviewing her father's books and finances with him. Around 2:00 or 3:00 AM the next day, Guscott's painful moans woke his daughter; believing he was having a heart attack, she called 911. At Providence St. Peter Hospital, a computed tomography (CT scan) showed that Guscott's abdominal aortic aneurism had ruptured. Guscott reversed his earlier DNR and was flown to Harborview Medical Center for surgery on his ruptured abdominal aortic aneurism. Vascular surgeon Dr. Nam T. Tran conducted a "fairly routine" successful surgery. CP at 97.

II. PROCEDURE

AHC sued Guscott for breach of contract, asserting that he had failed to pay for his caretaker services. CP at 9-10. Guscott counterclaimed[5] that (1) AHC had been negligent in causing him to fall from his wheelchair, which fall was the proximate cause of his ruptured abdominal aortic aneurism; and (2) AHC's neglect was also a violation of the vulnerable adult statute, chapter 74.34 RCW. The superior court bifurcated the parties' claims. The parties settled AHC's breach of contract claim before trial; thus, the superior court set only Guscott's tort counterclaims for trial. In anticipation of trial, both parties retained and deposed medical experts to testify about whether Guscott's fall from his wheelchair had caused his abdominal

[5] Guscott's amended answer also included counterclaims for conversion and theft of personal property and breach of contract. These counterclaims are not at issue on appeal.

aortic aneurism to rupture. Ultimately, however, the trial court excluded Guscott's expert witnesses' opinions.[6]

A. Pretrial Expert Witness Depositions

1. Guscott's experts' opinions

To prove causation, Guscott relied on the opinions of three experts: Drs. Holmes, Heller, and Gore. But the trial court ruled that none of the three experts' opinions met the *Frye* test and, thus, excluded their testimonies.

Dr. Holmes

Dr. John R. Holmes, a cardiologist at Virginia Mason Medical Center, reviewed Guscott's hospital records and testified in a deposition that he believed Guscott's fall from his wheelchair had caused his abdominal aortic aneurism to rupture as a result of "deceleration" and "shearing forces." CP at 213. According to Dr. Holmes, (1) it was well known in the medical community that a "significant trauma" or a "violent fall" (e.g., car crash or skiing accident) could cause a normal aorta to rupture as a result of deceleration, even where the person injured had not suffered direct trauma to the aorta; and (2) it was not a far "stretch" that a fragile, dilated, or calcified aorta like Guscott's could rupture with even less trauma. CP at 213. Dr. Holmes, however, did not know of any medical studies analyzing the effect of deceleration on the abdominal aorta (as opposed to the thoracic aorta) or abdominal aortic aneurisms specifically.

Nevertheless, in Dr. Holmes' opinion, Guscott had an "eggshell" aorta. CP at 215. When Guscott fell hard from his wheelchair, his aorta cracked and started to "leak."[7] CP at 215.

[6] Guscott did not similarly move to exclude AHC's experts' opinions; thus, these expert opinions remained available for AHC's use at trial.

The days following, when Guscott was in "intense pain" and "symptomatic in the pelvic area,"[8] his aorta was leaking intermittently (by bleeding and clotting several times); Guscott eventually became anemic and in enough pain that he developed angina, causing him to go to the emergency room again three days later. CP at 214, 215. According to Dr. Holmes, Guscott survived during this period because his aneurism had leaked very slowly and he had a "contained rupture." CP at 215.

Dr. Holmes acknowledged that there was a "significant risk"[9] that Guscott's aneurism would have spontaneously ruptured within the year based on its "size" and its "rate of growth."[10] But Dr. Holmes believed the "temporal relationship" between Guscott's fall and his abdominal aortic aneurism's leaking or rupturing made it more likely that his fall had caused the rupture. CP at 211, 217. Although AHC's medical experts ultimately reached different conclusions, they did not dispute (1) that deceleration injuries can cause aortic ruptures[11] or (2) that it was possible,

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[7] It is not clear from the record whether an abdominal aortic aneurism "leak" is the same as a "rupture." Guscott's and AHC's medical experts appear to disagree on whether these terms are synonymous or whether a leak is a lesser form of a rupture.

[8] According to Dr. Holmes, pain in the "pelvis" or "sacral" area could be symptomatic of an abdominal aortic aneurism's leaking or rupturing. CP at 217.

[9] According to the medical community's "landmark" study on abdominal aortic aneurisms, Guscott had a 50 percent chance of his abdominal aortic aneurism's spontaneously rupturing within the year. CP at 213.

[10] Guscott's abdominal aortic aneurism was 8.2 centimeters in June 2006 and 9.4 centimeters when it ruptured in December 2006. According to Dr. Holmes, this constituted a "significant rate of growth" over that time period. CP at 211.

[11] AHC medical expert Doctor Kaj Henry Johansen generally agreed that "penetrating trauma" (e.g., gunshot and stab wounds) and "severe deceleration" (e.g., car hitting a bridge at 70 mph) could rupture a person's abdominal aorta. CP at 144. But he claimed there was no evidence that Guscott had suffered such trauma or a deceleration injury by falling from his wheelchair.

though perhaps unlikely, for an abdominal aortic aneurism to leak and to clot over a period of time.[12]

Dr. Heller

St. Louis University Medical School Associate Professor Dr. Ross Heller has treated numerous abdominal aortic aneurism patients as an emergency room doctor. He testified in deposition that abdominal aortic aneurisms often "leak" (bleed) and "clot," making them relatively stable. CP at 248. Overtime, however, as the patient's blood pressure rises and tension builds on the patient's aortic wall, the clot eventually retracts and the abdominal aortic aneurism re-leaks to the point where the body can no longer seal off the wound by clotting.

In Dr. Heller's opinion, Guscott's low blood pressure and his initial "symptoms" on December 25 (back and buttocks pain) indicated that his abdominal aortic aneurism had likely started leaking when he fell out of the wheelchair. But the aneurism clotted and stabilized before he left the emergency room. CP at 251. The clot then broke when Guscott's blood pressure rose and his abdominal aortic aneurism started leaking again. Had Guscott's abdominal aortic aneurism leaked nonstop from the December 25 fall until December 28, he would have been "[in] extremis"[13] and died. CP at 250-51.

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[12] Dr. Johansen agreed with Guscott's experts that it is possible for an abdominal aortic aneurism like Guscott's that leaked into the retroperitoneum to "tapenade," or to "wall[ ] itself off," and then to stop leaking. CP at 144. As the patient's blood pressure rose, however, the abdominal aortic aneurism would re-bleed. He also claimed there had been reported cases of abdominal aortic aneurisms bleeding and stopping for a couple days, but such cases were "vanishingly rare." CP at 144.

[13] Webster's Dictionary defines "in extremis" as "in extreme circumstances" or "at the point of death." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 1157 (2002).

Like Dr. Holmes, Dr. Heller based his medical opinion on deceleration and shearing forces. According to Dr. Heller, the effects of deceleration are a matter of simple physiology and are "basic knowledge" within the medical community. CP at 252. For example, it is common scientific knowledge that "falls, car accidents, [and] rollover car accidents" can cause aortic ruptures, although a "classic high speed deceleration injury" usually involves the thoracic aorta, not the abdominal aorta. CP at 247. Nevertheless, even low ground-level falls like Guscott's fall from his wheelchair could create sufficient force to cause a deceleration injury and an abdominal aortic aneurism to rupture, especially in older people. Dr. Heller was not aware of any medical studies documenting the effects of deceleration forces in ground-level falls or with abdominal aortic aneurisms specifically; nor had he conducted such studies himself. But having worked with thousands of patients at "level one trauma centers" most of his 30-year career, he had personal experience treating patients whose abdominal aortic aneurisms had leaked or ruptured as a result of ground-level falls. CP at 247.

Dr. Gore

Radiologist Dr. Richard Michael Gore reviewed Guscott's medical records, including his December 28 CT scan, and concluded that Guscott's abdominal aortic aneurism had most likely started leaking after his fall from the wheelchair because some of the pelvic blood visible on this CT scan was around three days old. According to Dr. Gore, blood has a different density and

attenuation on a CT scan depending on its age,[14] and he is frequently asked to determine the relative age of blood as part of his practice. CP at 239, 724-25. Based on his 33 years experience as a radiologist, he has developed a "fairly good eye" and can determine the relative age of blood by "eyeball[ing]" a CT scan. CP at 239, 240.

Dr. Gore also theorized that Guscott's abdominal aortic aneurism had leaked slowly over the three-day period because his December 28 CT scan did not show a "slit-like inferior vena cava." CP at 726. Dr. Gore explained that (1) the inferior vena cava is typically wide; (2) when the body is injured and bleeds rapidly, the body takes blood from the inferior vena cava to supply more vital organs, making the inferior vena cava look slit-like; and (3) the absence of a slit-like inferior vena cava on Guscott's CT scan suggested that his abdominal aortic aneurism had bled slowly over a three-day period as opposed to more quickly over a shorter time period. Dr. Gore believed there "might be" scientific studies documenting the effects of rapid blood loss on the inferior vena cava, but he had not read these studies in a long time. CP at 727. He acknowledged that the effects he described were not a "100 percent" accurate because some patients could have a normal inferior vena cava even though they had suffered the "shock" of rapid blood loss. CP at 727.

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[14] According to Dr. Gore, older blood tends to be less dense than fresh blood, and it has a grayish color. If blood is more than three to five days old, it develops a "hematocrit" effect because the solid components of the blood (red and white blood cells) will be in the bottom portion of the blood, and the serum will be on the top. CP at 239. The blood on Guscott's CT scan had not yet developed the hematocrit effect, suggesting that the blood in his abdominal cavity was not yet more than three days old.

Dr. Gore conceded that a radiologist could more precisely determine a blood's density and relative age by measuring its "Hounsfield units." CP at 239. To get the blood's Hounsfield units, however, the radiologist performing the CT scan would need to draw the cursor over the region of the CT scan and ask the machine to compute to the region's Hounsfield units. This had not been done in Guscott's case.

2. AHC's Experts' Opinions

AHC's medical experts relied on much of the same evidence as Guscott's medical experts (e.g., Guscott's medical records, CT scan, symptoms, etc.). But they disagreed that Guscott's fall on December 25 had caused his abdominal aortic aneurism to rupture.

Dr. Johansen

Based on 30 years of experience treating patients with aortic aneurysm ruptures and his independent review of Guscott's medical records, University of Washington School of Medicine professor and vascular surgeon Dr. Kaj Henry Johansen opined that Guscott had "no real symptoms" of an abdominal aortic aneurism leak on December 25 and that his abdominal aortic aneurism had ruptured on December 28 merely "as a consequence of its size" and aortic "wall tension." CP at 143. Dr. Johansen generally agreed that trauma and severe deceleration could cause an aorta to rupture, but he disagreed that Guscott had suffered from such trauma or from such deceleration after falling from his wheelchair.

Dr. Peters

Like Guscott's radiologist expert Dr. Gore, AHC's radiologist expert, Dr. Michael J. Peters, visually reviewed Guscott's CT scan. Despite the lack of computer-determined "Hounsfield units,"[15] he offered his expert opinion on the date of the blood in Guscott's abdominal cavity and the likely date of Guscott's abdominal aortic aneurism rupture, based on the blood density and attenuation differences visible on Guscott's CT scan. He did not dispute Dr. Gore's opinion that a trained radiologist could tell the difference between blood densities by

[15] *See* n.14 and n.16.

reviewing a patient's CT scans.[16] Contrary to Dr. Gore's conclusion, however, Dr. Peters concluded that the different states of blood visible in the CT scan were only 10-12 hours old and, thus, Guscott's rupture had likely occurred within 10 to 12 hours of his admittance to the emergency room three days after the fall, on December 28. CP at 633. Dr. Peters acknowledged that he had seen abdominal aortic aneurisms leak over an extended period of time[17] but that it would have been "very rare" for the type of rupture that Guscott had to have leaked for three days and that such leaking would never have occurred without pain. CP at 635.

Dr. Tran

Dr. Nam T. Tran, the vascular surgeon who had repaired Guscott's abdominal aortic aneurism rupture, also believed that Guscott's abdominal aortic aneurism rupture had been less than 12 hours old on December 28. CP at 97. Without challenging the underlying science used by Guscott's medical experts, Dr. Tran testified in his deposition that (1) it was "unlikely" that Guscott's fall had caused his abdominal aortic aneurism to rupture because he had not sustained any direct trauma to the abdominal area when he fell; and (2) it was not common for abdominal aortic aneurisms to rupture and to clot on their own. CP at 97, 98. Dr. Tran also asserted that it was "really hard to tell" how long an abdominal aortic aneurism had been ruptured by merely viewing CT scans. CP at 97. In his opinion, you could "never [know] how long the aneurysm

[16] Dr. Peters generally agreed with Dr. Gore that a trained radiologist could tell the difference between "subacute" blood (1-4 days old) and blood that was more "chronic" in duration (e.g., differentiating 2-day old blood from 20-day blood) by reviewing a patient's CT scans. CP at 816. But Dr. Peters believed such conclusions were inexact and, thus, it was not possible for a radiologist to determine the *exact* age of blood within the subacute category, as was at issue in Guscott's case, either by "'eye-ball[ing]'" the blood or by considering its Hounsfield units. CP at 816.

[17] For example, microscopic abdominal aortic aneurism bleeds can bleed for six to eight months.

ha[d] been ruptured" without talking to the patient and hearing him complain about a "sudden onset of abdominal pain." CP at 97.

B. *Frye* Motion in Limine To Exclude Guscott's Experts' Testimonies

AHC moved in limine to exclude Guscott's three experts' testimonies, arguing that the experts were not qualified under ER 702 and their opinions were inadmissible under *Frye*. Guscott responded that his experts met the minimum qualifications for expert testimony under ER 702 and that the *Frye* test did not apply because it was "universally accepted" in the medical community that "trauma, including falls" could cause existing abdominal aortic aneurisms to rupture. CP at 979. Guscott submitted his three experts' depositions and AHC's caregiver notes from after the fall to support his argument.

Guscott also filed a supplemental memorandum opposing AHC's *Frye* motion. He argued that *Frye* was inapplicable because his experts had not relied on novel scientific methods or theories but had, instead, relied on "their own practical experience" and had made "reasonable deductions" from well-established scientific principles. CP at 322, 323. AHC responded that (1) it had challenged "Guscott's experts' opinions as being 'novel,'" largely because its *own* experts had offered contrary causation opinions; (2) its mere assertion (without direct evidence) that Guscott's experts had relied on novel science "automatically require[d] a *Frye* analysis" and shifted the burden of proof to Guscott to show that his experts' methods and theories were generally accepted in the scientific community; and (3) because Guscott had failed to produce such evidence of general acceptance, particularly in the form of scientific studies, the superior court was required to exclude Guscott's experts' testimonies under *Frye*. CP at 329.

Neither party offered any scientific studies. After hearing oral argument, the superior court concluded that Guscott's experts were qualified under ER 702. Nevertheless, the superior court ruled that these testimonies were inadmissible under *Frye* because (1) AHC had "satisfied its prima faci[e] burden to show that Mr. Guscott's experts present[ed] novel scientific theories"; and (2) there was "no scientific basis in the record" that Guscott's experts scientific methods and theories were generally accepted in the medical community. CP at 342. The superior court did not, however, explain how it reached its threshold determination that AHC had satisfied its prima facie burden. The superior court granted AHC's motion and excluded all three of Guscott's experts' testimonies from trial.

C. Summary Judgment

After the superior court excluded Guscott's expert evidence, Guscott conceded that he could not prove the causation element of his two tort counterclaims, negligence and violation of the vulnerable adult statute. In light of this concession, the superior court entered summary judgment against Guscott on his counterclaims against AHC and awarded AHC $5,066.64 in statutory attorney fees and costs. CP at 362-63.

Guscott moved for reconsideration, arguing that (1) the superior court had improperly decided a factual issue and determined that Guscott had fallen on his "buttocks"[18] rather than on his elbow and side; (2) his experts had not relied on novel scientific methods or theories, making *Frye* inapplicable; [19] and (3) therefore, he did not need to present scientific studies under the *Frye*

[18] CP at 373.

[19] Guscott also argued that the superior court had erroneously determined he was not a competent witness and had excluded his deposition testimony. This ruling, however, is not at issue on appeal.

test. Nevertheless, he submitted some 250 pages of scientific studies and other medical literature, which he argued the superior court should consider on reconsideration because it had not conducted a formal *Frye* hearing. The superior court rejected Guscott's scientific studies and medical literature because the documents were not "newly discovered evidence" under CR 59(a)(4), and it denied his motion for reconsideration. CP at 954.

Guscott appeals.

ANALYSIS

Guscott argues that the superior court erred in ruling that his experts' testimonies were inadmissible under *Frye* because (1) his experts' opinions were not based on novel scientific methods or theories, making *Frye* inapplicable; (2) even if *Frye* applied, the superior court misapplied the test by requiring scientific proof that every aspect of his experts' causation opinions was not novel; and (3) in the alternative, if the superior court correctly concluded that his experts' testimonies were novel, it should have applied the *Daubert* test to his civil tort counterclaims. Agreeing with Guscott that his experts' opinions were not based on novel scientific methods or theories under *Frye*, we do not reach his other arguments.

We review a superior court's *Frye* ruling de novo.[20] *Moore v. Harley-Davidson Motor Co. Grp., Inc.*, 158 Wn. App. 407, 417, 240 P.3d 808 (2010). We also review summary judgment orders de novo, performing the same inquiry as the superior court. *Hisle v. Todd Pac.*

[20] Expert testimony involving scientific evidence must be admissible under both the *Frye* test and ER 702. *Moore*, 158 Wn. App. at 417. Evidence is admissible under ER 702 if (1) the witness qualifies as an expert, and (2) the expert's testimony is helpful for the trier of fact. *State v. Baity*, 140 Wn.2d 1, 10, 991 P.2d 1151 (2000). We review a superior court's ER 702 ruling for an abuse of discretion. *Moore*, 158 Wn. App. at 417. Because neither party has challenged the superior court's ruling that Guscott's experts met the requirements of ER 702, we confine our analysis to the superior court's *Frye* ruling.

Shipyards Corp., 151 Wn.2d 853, 860, 93 P.3d 108 (2004). When reviewing a summary judgment, we construe all facts and reasonable inferences in the light most favorable to the nonmoving party, here Guscott. *Jones v. Allstate Ins. Co.*, 146 Wn.2d 291, 300, 45 P.3d 1068 (2002).

When scientific evidence is challenged as novel, Washington courts apply the "general acceptance" test set forth in *Frye*. *State v. Copeland*, 130 Wn.2d 244, 259, 922 P.2d 1304 (1996); *Moore*, 158 Wn. App. at 418. For evidence to be admissible under *Frye*, both the scientific theory underlying the evidence and the technique or methodology used to implement it must be generally accepted in the scientific community.[21] *State v. Gregory*, 158 Wn.2d 759, 829, 147 P.3d 1201 (2006). General acceptance may be found from a number of sources, including from "testimony that asserts it, from articles and publications, from widespread use in the community, or from the holdings of other courts." *State v. Kunze*, 97 Wn. App. 832, 853, 988 P.2d 977 (1999) (footnotes and citations omitted), *review denied*, 140 Wn.2d 1022 (2000).

If, however, the evidence sought to be admitted "does not involve new methods of proof or new scientific principles," it is not subject to the *Frye* test. *State v. Baity*, 140 Wn.2d 1, 10, 991 P.2d 1151 (2000). Nor must a plaintiff show general acceptance of all aspects of his experts' causation opinions. *See Anderson v. Akzo Nobel Coatings, Inc.*, 172 Wn.2d 593, 609-11, 260 P.3d 857 (2011). As our Washington Supreme Court has recently explained:

> [I]f the *science* and *methods* are widely accepted in the relevant scientific community, the evidence is admissible under *Frye*, without separately requiring widespread acceptance of the plaintiff's theory of causation.

[21] The *Frye* test requires only "general acceptance, not *full* acceptance," of a novel scientific theory or method. *State v. Russell*, 125 Wn.2d 24, 41, 882 P.2d 747 (1994), *cert. denied*, 514 U.S. 1129 (1995).

Anderson, 172 Wn.2d at 609 (emphasis added). This is because many medical opinions are based on "differential diagnoses." *Anderson*, 172 Wn.2d at 610. A "physician or other qualified expert may base a conclusion about causation through a process of ruling out potential causes with due consideration to temporal factors, such as events and the onset of symptoms." *Anderson*, 172 Wn.2d at 610

In other words, the superior court should "permit testimony about generally accepted methodology even when the *conclusions* the testifying expert reaches are not themselves . . . generally accepted." *Moore*, 158 Wn. App. at 418 (emphasis added). The *Frye* test does not require that "specific conclusions" drawn from scientific data be generally accepted or that "every deduction [that an expert makes] from generally accepted theories" be generally accepted in the scientific community. *Anderson*, 172 Wn.2d at 611. Instead, "[i]f the *methodology* is sufficiently accepted in the scientific community at large, *concerns about the possibility of error or mistakes made in the case at hand can be argued to the factfinder*." *State v. Russell*, 125 Wn.2d 24, 41, 882 P.2d 747 (1994) (emphasis added), *cert. denied*, 514 U.S. 1129 (1995).

The record does not support the superior court's conclusory threshold finding that Guscott's experts' causation opinions involved "novel" scientific methods or theories, subjecting them to the *Frye* test. Although AHC's experts may have disagreed with the *conclusions* drawn by Guscott's experts (e.g., that Guscott's fall had caused his abdominal aortic aneurism to leak and that it had clotted and re-bled on its own, or that the blood visible on Guscott's CT scan was three days old), AHC's experts did not challenge as novel any of the *underlying scientific methods or principles* on which Guscott's experts relied. Because there is no evidence in the record that Guscott's experts' opinions were based on novel scientific methods or theories, we

hold that the superior court erred in applying the *Frye* test and excluding Guscott's experts' testimonies on this basis.

I. Deceleration and Shearing Forces

Guscott's experts, Dr. Holmes and Dr. Heller, both testified in their depositions that they believed Guscott's fall had caused his abdominal aortic aneurism to rupture. They based their opinions, at least in part, on the generally-accepted scientific principle that "deceleration" and "shearing forces" can cause an aorta to rupture. CP at 213, 252. They specifically testified that such forces were "basic knowledge" within the medical community and that such forces were known to rupture normal aorta and could rupture fragile abdominal aortic aneurisms like Guscott's, even if he did not suffer direct trauma to the aorta. CP at 252. In reaching their conclusion that Guscott's fall had caused his abdominal aortic aneurism to rupture, they also relied on the "temporal relationship" between Guscott's fall and his abdominal aortic aneurism rupture and that his "symptoms" (pelvic pain, low blood pressure) after December 25 were consistent with an abdominal aortic aneurism leak or rupture. CP at 214, 217, 251.

AHC's medical experts, Dr. Johansen and Dr. Tran, did not challenge the basic scientific principle that deceleration and shearing forces can rupture a person's aorta or abdominal aortic aneurism. Instead, they took issue with Guscott's experts' conclusion that Guscott had suffered a deceleration injury as a result of his ground-level fall from his wheelchair. Any disagreement that AHC's experts had about whether Guscott actually suffered a deceleration injury from such a low-level fall is a factual question for the jury that should go to the weight of the evidence. *See Kaech v. Lewis County Pub. Util. Dist.*, 106 Wn. App. 260, 274-75, 23 P.3d 529 (2001), *review denied*, 145 Wn.2d 1020 (2002). Because AHC's experts did not dispute the underlying

scientific principle that deceleration and shearing forces can cause aortic ruptures or the methods that Guscott's experts had used in formulating their causation opinions (e.g., reviewing temporal relationships and correlating events with the onset of symptoms), we hold that the *Frye* test did not apply to this testimony. *Anderson*, 172 Wn.2d at 601-02, 610-11; *Baity*, 140 Wn.2d at 10.

II. LEAKING AORTA THAT CLOTS AND RE-BLEEDS

Dr. Holmes and Dr. Heller also based their causation opinions on the theory that Guscott's abdominal aortic aneurism had cracked and started leaking when he fell, that it had clotted on its own, and that it then had re-bled when his blood pressure rose, causing him to be readmitted to the hospital on December 28. AHC's experts did not challenge this theory as being "novel" per se. Instead, Drs. Johansen, Peters, and Tran all acknowledged that such clotting and re-bleeding was *possible* and had been reported—particularly with abdominal aortic aneurisms that bled into the retroperitoneum like Guscott's[22]—but that such spontaneous clotting and re-bleeding was not "common" or was "rare." CP at 144. The frequency with which a recognized medical condition manifests is a question of weight, not admissibility. Again, because AHC's experts did not challenge the underlying scientific principles or methods associated with this theory, we hold that the *Frye* test did not apply to this testimony.

III. BLOOD DENSITY AND ATTENUATION ON CT SCAN

Dr. Gore also concluded that Guscott's fall on December 25 had caused his abdominal aortic aneurism to leak or to rupture. He based this conclusion on his visual inspection of

[22] For example, Dr. Johansen agreed with Guscott's experts that it is possible for a abdominal aortic aneurism like Guscott's that leaks into the retroperitoneum to "tapenade," or to "wall[ ] itself off." CP at 144. The abdominal aortic aneurism then stops leaking until the patient's blood pressure rises, at which point the abdominal aortic aneurism re-bleeds.

Guscott's CT scan from December 28 and his observation that certain blood on the CT scan appeared to be 3 days old. Dr. Gore, who had more than 30 years experience as a radiologist, explained (1) blood has a different density and attenuation on a CT scan depending on its age, (2) from these density and attenuation differences a radiologist could deduce the relative age of a patient's bleed, and (3) he is frequently asked to determine the age of blood as part of his practice.

AHC's radiologist expert, Dr. Peters, also visually inspected Guscott's CT scan and offered an opinion about the likely date of Guscott's abdominal aortic aneurism rupture based on his interpretation of the blood's density and attenuation differences. Although Dr. Peters ultimately reached a different conclusion and determined that the blood visible on the CT scan was only 10-12 hours old, he did not challenge the underlying theory or methodology that Dr. Gore used when formulating his expert opinion. Instead, Dr. Peters acknowledged that a trained radiologist could tell the relative age of blood by reviewing the attenuation and density differences on a CT scan but that such conclusions were never exact. Dr. Tran echoed this sentiment when he stated that it was "really hard to tell" how long an abdominal aortic aneurism had been ruptured by reviewing a CT scan alone and that a doctor should also speak with a patient and observe the onset of symptoms. CP at 97.

The imprecision of such blood dating using a CT scan did not place Dr. Gore's medical opinion within the ambit of *Frye*. Any concern that Dr. Gore may have made a mistake in rendering his opinion based on his merely "eyeball[ing]"[23] Guscott's CT scan and not also having computer-determined Hounsfield units for the blood could be argued to the fact-finder.

[23] CP at 816.

Russell, 125 Wn.2d at 41. Any disagreement between Dr. Gore's and Dr. Peters' ultimate conclusions about the blood's age also went to the weight of their testimonies, not the evidence's admissibility. *Kaech*, 106 Wn. App. at 274. Because AHC failed to show that Dr. Gore's opinion was based on novel scientific theories or methods, we hold that the *Frye* test did not apply to this testimony.

IV. Slit-like Inferior Vena Cava

Dr. Gore also espoused a theory that Guscott's abdominal aortic aneurism had bled slowly over the course of three days because he did not have a slit-like inferior vena cava, which, according to Dr. Gore, meant that Guscott did not suffer the trauma of a rapid bleed. In the proceedings below and again on appeal, AHC challenges Dr. Gore's testimony on slit-like inferior venae cavae as being inadmissible under *Frye* solely because Dr. Gore did not offer any "peer-reviewed articles, texts, etc." to support his opinion. CP at 970; Br. of Resp't at 14. This challenge is misplaced: Although medical studies may "strengthen an expert's testimony on causation, the competence of expert testimony does not depend on the existence of such studies." *Bruns v. PACCAR, Inc.*, 77 Wn. App. 201, 216, 890 P.2d 469, *review denied*, 126 Wn.2d 1025 (1995).

The Washington Supreme Court reached a similar conclusion in *Reese v. Stroh*, 128 Wn.2d 300, 907 P.2d 282 (1995). In *Reese*, the plaintiff's expert gave "uncontroverted testimony" that the Food and Drug Administration had approved Prolastin drug therapy in treating his medical disorder and that the defendant was negligent in failing to prescribe such therapy, and the defendant objected to the expert's causation opinion because he had not produced any "statistically significant studies." *Reese*, 128 Wn.2d at 307. The Supreme Court

concluded that, under these circumstances, *Frye* was inapplicable and the admissibility of the expert's causation opinion should instead be weighed under the general reliability standards of ER 702 and ER 703. *Reese*, 128 Wn.2d at 307-08. Here, Dr. Gore similarly gave uncontroverted testimony in his deposition that (1) when the body is injured and bleeds rapidly, the body uses blood from the inferior vena cava to support more vital organs, making the inferior vena cava look slit-like; and (2) Guscott's absence of a slit-like inferior vena cava indicated that he likely had bled slowly rather than rapidly. Because AHC challenges Dr. Gore's testimony solely on the ground that he did not cite studies supporting this theory, we hold that AHC failed to show this evidence was novel and that it should be analyzed under *Frye* rather than ER 702 and 703.

In summary, Guscott's experts did not rely on novel scientific theories or methods in formulating their expert opinions and conclusions.[24] Instead, they relied on (1) generally accepted scientific theories/principles (e.g., deceleration forces can rupture a person's aorta, and a radiologist can date blood by reviewing a CT scan); and (2) generally accepted methods/techniques (e.g., reviewing patient records, examining temporal relationships, correlating events with symptoms). Such expert causation opinions do *not* fall within the ambit of *Frye*. *Anderson*, 172 Wn.2d at 611. We hold, therefore, that the superior court erred in excluding Guscott's experts' testimonies.

[24] At most, Guscott's experts might have made *deductions* and drawn novel *conclusions* from generally accepted scientific principles and methods. The *Frye* test, however, does not require that such deductions or conclusions be generally accepted before the expert's testimony is admissible. *Anderson*, 172 Wn.2d at 611.

We reverse the superior court's exclusion of Guscott's expert witnesses, we reverse its summary judgment dismissal of Guscott's counterclaims against AHC,[25] and we remand for trial.

Hunt, P.J.

We concur:

Van Deren, J.

Bridgewater, J.P.T.

[25] Reversal of summary judgment automatically includes reversal of the superior court's award of attorney fees and costs to AHC.