

IN THE COURT OF APPEALS
STATE OF ARIZONA
DIVISION TWO

THE STATE OF ARIZONA,)	
)	
Appellee,)	
)	
v.)	2 CA-CR 2001-0033
)	
JOHN ROBERT ESSER,)	
)	
Appellant.)	
<hr/>		
THE STATE OF ARIZONA,)	2 CA-CR 2002-0046
)	(Consolidated)
Appellee,)	DEPARTMENT B
)	
v.)	<u>OPINION</u>
)	
JOSE MUNOZ VIDAL,)	
)	
Appellant.)	
<hr/>		

APPEAL FROM THE SUPERIOR COURT OF PIMA COUNTY

Cause Nos. CR-65286 and CR-64727

Honorable Paul S. Banales, Judge Pro Tempore

AFFIRMED

Terry Goddard, Arizona Attorney General
By Randall M. Howe, Diane Leigh Hunt, and
Joseph L. Parkhurst

Tucson
Attorneys for Appellee

Isabel G. Garcia, Pima County Legal Defender
By Alex Heveri
By Robb P. Holmes

Tucson
Attorneys for Appellant Esser
Attorneys for Appellant Vidal

PELANDER, Presiding Judge.

BACKGROUND

¶1 After a jury trial, appellant John Robert Esser was found guilty of aggravated driving with an alcohol concentration of 0.10 or greater within two hours of driving in violation of A.R.S. §§ 28-1381(A)(2) and 28-1383(A)(1).¹ The trial court sentenced him to an aggravated, 7.5-year term of imprisonment, enhanced by one historical prior felony conviction. After a separate jury trial, appellant Jose Munoz Vidal was found guilty of four felonies involving alcohol and driving² and was sentenced to concurrent, presumptive, ten-year terms of imprisonment, enhanced by two historical prior felony convictions. Each appellant challenges the trial court's denial of his motion to suppress the results of his alcohol breath tests, which had been conducted using an Intoxilyzer 5000 device.

¶2 We consolidated the appeals because the cases were consolidated at the trial level for purposes of the motion to suppress the breath test results, because only one set of exhibits was introduced at that proceeding, and because the arguments each appellant raises on appeal about the denial of that motion are virtually identical. Pursuant to Rule 31.26, Ariz. R. Crim. P., 17 A.R.S., we address in this opinion only appellants' issue relating to the breath-testing device. In a separate memorandum decision filed this date, we address two other issues Vidal raises, neither of which are opinion worthy or require reversal. *See* Ariz. R. Sup. Ct. 111, 17A A.R.S. We affirm the convictions and sentences of both appellants.

¹Section 28-1381(A)(2) was subsequently amended to proscribe driving with an alcohol concentration of 0.08 or greater within two hours of driving. 2001 Ariz. Sess. Laws, ch. 95, § 5.

²Aggravated driving under the influence (DUI) of an intoxicant while license is suspended or revoked; aggravated driving with an alcohol concentration of 0.10 or more while license is suspended or revoked; aggravated DUI with two DUI convictions in the previous sixty months; and aggravated driving with an alcohol concentration of 0.10 or more with two DUI convictions in the previous sixty months.

DISCUSSION

I. Physiology-based Challenge to Intoxilyzer 5000

¶3 Vidal filed a motion to suppress the evidence of his alcohol breath test results, raising statutory and *Frye*³ challenges to the admissibility of those results based on the science and respiratory physiology underlying the tests. Esser and five other defendants joined in that motion.⁴ After three hearings featuring extensive expert testimony and after reviewing the numerous exhibits, primarily scientific articles,⁵ that had been introduced into evidence, the trial court denied the motion as to all defendants. We review the denial of a motion to suppress evidence for a clear abuse of discretion, viewing the evidence presented at the suppression hearing in the light most favorable to upholding the trial court’s factual findings and reviewing its legal conclusions de novo. *State v. Sanchez*, 200 Ariz. 163, ¶5, 24 P.3d 610, ¶5 (App. 2001).

¶4 The motion to suppress was based on the conclusions of Dr. Michael P. Hlastala, an expert in pulmonary physiology who testified for the defense about alcohol breath tests, and on a Department of Health Services (DHS) regulation that requires breath specimens to be “alveolar in composition.” Ariz. Admin. Code R9-14-403(B)(1). Hlastala explained that the theory of alcohol breath testing originated decades ago when the scientific understanding of pulmonary physiology was primitive and before the development of sophisticated testing devices. In what Hlastala termed the “old paradigm,” alcohol was thought to be exchanged between the

³*Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923).

⁴Esser and Vidal also sought suppression below on due process grounds, but they have not pursued that claim on appeal.

⁵The state erroneously asserts that these exhibits are not part of Vidal’s record on appeal. See Rule 31.8(a)(1) (record on appeal composed in part of “all documents, papers, books and photographs introduced into evidence”).

blood and the breath in the alveoli, the tiny air sacs deep in the lungs, in the same manner as oxygen and carbon dioxide are exchanged between blood and breath in the alveoli. The alcohol was thought to enter the breath in the alveoli in equilibrium with the percentage of alcohol in the blood in the pulmonary capillaries that line the alveoli. The airways, comprising the mouth, trachea, and bronchi, were considered dead air spaces in which no significant alcohol exchange occurred. Under this paradigm, the alcohol concentration of an exhaled breath from a subject with alcohol in his or her blood is expected to be initially very low as breath is expelled from the airways; to rise as the exhalation begins to incorporate alveolar air; and, finally, to level out at equilibrium when the exhalation contains only alveolar air, at what is termed the “alveolar plateau.”

¶5 Based on his own research and that of others, however, Hlastala had determined that the alveolar plateau does not occur. Rather, breath exhaled from the alveolar region and passed through the airways shows a gradual, almost linear increase in alcohol concentration for as long as the subject exhales, leveling off only at the end of the breath when the exhalation ceases. In addition, tests of controlled “rebreathed” exhalations, in which the subject breathes in and out of a bag before being tested, result in alcohol readings that approximate the equilibrium level and are higher than the reading from a single exhalation by the same subject, belying the old paradigm concept that testing a single exhalation accurately measures the alcohol exchanged in the alveoli. Moreover, Hlastala had found that breath tests results can be significantly altered by pretest breathing patterns such as hyperventilation and holding one’s breath, anomalies that could not be explained by the old paradigm. Based on these and other findings, Hlastala concluded that the old paradigm does not accurately reflect the physiology of breath alcohol exchange and arrived at his own paradigm.

¶6 Noting that alcohol is a gas highly soluble in water and affected by temperature, Hlastala theorized that a significant portion of alcohol-breath exchange occurs as the breath passes over the mucous-bearing tissues in the airways, which heat and humidify inhaled air before it reaches the alveoli. Hlastala concluded that inhaled air absorbs alcohol along with moisture as it passes over those mucous membranes so that, by the time it reaches the alveoli, the breath alcohol concentration is already in equilibrium with blood alcohol concentration, and no further alcohol exchange occurs in the alveoli. He further concluded that, during exhalation, alcohol is initially desorbed back into the mucous membranes, which have become somewhat depleted of alcohol and moisture during the inhalation. Less and less alcohol is desorbed as the mucous membranes become more resaturated with moisture and alcohol during the exhalation, explaining the absence of an alveolar plateau and the steady rise in alcohol concentration for the duration of an exhalation.

¶7 The foregoing is a simplified summary of Hlastala's research and conclusions, which involve complicated mathematical equations and advanced principles of pulmonary physiology and gas exchange. For purposes of the legal issues before us, the key points of Hlastala's paradigm are: (1) no significant alcohol is exchanged between the blood and the breath in the alveoli, and (2) the alcohol that is detected by breath-testing devices has not been exchanged in the alveoli, but in the airways via the mucous-bearing tissues found therein. Based on Hlastala's testimony, appellants essentially contend that the Intoxilyzer 5000 device does not and cannot test or measure alveolar, or "deep lung," air.

¶8 Appellants first argue that the trial court should have suppressed their breath test results because Hlastala's findings show that the state did not comply with A.R.S. §§ 28-1323 and 28-1324, which require that tests be performed on a device approved by DHS, and with that agency's regulation found in R9-14-403(B)(1), Ariz. Admin. Code, which requires that, for

alcohol breath-testing devices, “[b]reath specimens shall be alveolar in composition.” Appellants contend that, because Hlastala showed that no alcohol is exchanged in the alveoli, any test results showing positive alcohol content actually proves the Intoxilyzer 5000 does not test air samples that are alveolar in composition; indeed, Hlastala testified that “you can’t measure alveolar air.”

¶9 The relevant statutes and regulations do not define “alveolar air.”⁶ Appellants urge us to adopt the definition advanced by Hlastala, who defined the term as “air that is in the alveoli. Once it leaves and has changed it no longer is alveolar air.” Thus, Hlastala postulated that it is impossible to use a breath-testing device to accurately measure alcohol that is exchanged into the breath in the alveoli, if any such exchange occurs, because of the overriding effect of the mucous membranes, which add and subtract alcohol to and from the breath on its way to and from the alveoli. Accordingly, when asked whether the air appellants had “breathed out was alveolar in composition,” Hlastala replied, “No, it was not.” We are not persuaded, however, that Hlastala’s definition of alveolar air, meaning unchanged air from the alveoli, is appropriate in the context of R9-14-403(B)(1). Even assuming that Hlastala is correct about the effect of the mucous membranes, such a definition would render the regulation inoperative and inert. We presume the promulgating body did not intend that result. *See Curtis v. Morris*, 184 Ariz. 393, 397, 909 P.2d 460, 464 (App. 1995).

¶10 In our view, a more appropriate definition of alveolar air is air exhaled from the alveoli. This definition not only fits within the “old paradigm,” but it also accommodates the practical implications of Hlastala’s theory. As Hlastala testified, upon full inhalation, approximately “ninety percent of the air would be in the alveolar regions.” The trial court

⁶For purposes of this discussion we use the terms “alveolar air” and “alveolar in composition” interchangeably.

implicitly adopted this common-sense definition when it found: “While it is true that there is an interaction between the air from the lungs, with the air and membranes contained in the upper respiratory airways, the expired air is still, to quite an extent, alveolar in composition.” This result is similar to that reached in *State v. Wells*, 779 A.2d 680 (Vt. 2001). Vermont regulations also require breath-testing devices to test “alveolar” air, and the defendant there challenged her breath test results based on Dr. Hlastala’s theories. The appellate court upheld the trial court’s reliance on the state’s expert, who had testified that the device at issue “‘analyzes a subject’s expired alveolar, or deep lung, air.’” *Id.* at 682. Similarly, the trial court here did not abuse its discretion in denying the motion to suppress based on its finding that Hlastala’s testimony had not refuted that the Intoxilyzer 5000 tests samples that are alveolar in composition, as required by DHS regulation.

II. *Frye* Challenge

¶11 Appellants next contend that the trial court should have granted the motion to suppress based on *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923), arguing Hlastala’s work undermined the scientific theory underlying breath testing. Under *Frye*, the admissibility of novel scientific evidence depends on whether the evidence is derived from a scientific theory or principle that has achieved general acceptance in the relevant scientific community. *Id.* at 1014. Arizona follows the *Frye* doctrine. *Logerquist v. McVey*, 196 Ariz. 470, ¶65, 1 P.3d 113, ¶65 (2000). And, as the trial court noted in denying this claim, alcohol breath testing has been found to be generally accepted in the scientific community, *see State v. Velasco*, 165 Ariz. 480, 486, 799 P.2d 821, 827 (1990), thus relieving the state from proving its general acceptance in every prosecution. *State v. Harris*, 152 Ariz. 150, 152, 730 P.2d 859, 861 (App. 1986). Accordingly, it was incumbent upon the defense, in challenging evidence as inadmissible under *Frye*, to make a

preliminary showing that alcohol breath testing is no longer accorded general scientific acceptance. *See Harris*.

¶12 As the trial court found, the defense failed to make such a showing. The defense showed only that one expert, Dr. Hlastala, as well as some of the authors and coauthors of the numerous scientific articles admitted at the hearing, disagreed with the traditional theory of the physiology underlying the alcohol-breath interchange. But even Hlastala's paradigm was premised on the theory that breath-testing devices test breath alcohol that has been exchanged from a subject's bloodstream into the breath through physiological processes. Although Hlastala's research has led him to conclude that a subject's breath test results are not as closely correlated to the subject's true blood alcohol levels as the old paradigm would suggest, this conclusion does not implicate *Frye*. "The question is not whether the scientific community has concluded that the scientific principle or process is absolutely perfect, but whether the principle or process is generally accepted to be capable of doing what it purports to do." *Velasco*, 165 Ariz. at 486, 799 P.2d at 827. Even Hlastala testified the forensic community believes that the Intoxilyzer 5000 accurately measures breath alcohol within ten percent accuracy. And Arizona case law supports that concession. *See id.* at 485, 799 P.2d at 826 ("Intoxilyzer test results are considered extremely accurate."); *State v. O'Dell*, 202 Ariz. 453, ¶23, 46 P.3d 1074, ¶23 (App. 2002) (noting "the reliability of the Intoxilyzer 5000"); *State v. Sanchez*, 192 Ariz. 454, 457, 967 P.2d 129, 132 (App. 1998) ("Tests performed on the Intoxilyzer 5000 are . . . accurate."), quoting *State v. Bolan*, 187 Ariz. 159, 162, 927 P.2d 819, 822 (App. 1996); *Moss v. Superior Court*, 175 Ariz. 348, 353, 857 P.2d 400, 405 (App. 1993) ("The Intoxilyzer 5000 is a very accurate and reliable testing method with built-in safeguards.").

¶13 As the trial court found, any challenge to the accuracy of the Intoxilyzer 5000 results based on Hlastala's findings went to the weight of the test results, not the admissibility of that evidence under *Frye*. See *State v. Van Adams*, 194 Ariz. 408, ¶34, 984 P.2d 16, ¶34 (1999); *Wozniak v. Galati*, 200 Ariz. 550, ¶11, 30 P.3d 131, ¶11 (App. 2001). Moreover, as the trial court also found, the various factors leading to the blood-breath correlation deficiencies Hlastala noted all tended to underestimate blood alcohol concentration, which would favor a defendant charged with driving under the influence of an intoxicant.⁷ The trial court did not abuse its discretion in declining to suppress appellants' breath test results on *Frye* grounds.

III. State's Burden of Proof

¶14 Appellants also contend that the trial court should have granted the motion to suppress evidence of the breath tests or their results pursuant to Rule 16.2(b), Ariz. R. Crim. P., 16A A.R.S., which establishes the procedure on pretrial motions to suppress evidence and provides that the prosecution bears "the burden of proving, by a preponderance of the evidence, the lawfulness in all respects of the acquisition of all evidence which the prosecutor will use at trial." According to appellants, Hlastala's testimony that "the Intoxilyzer 5000 machine cannot

⁷Any lack of correlation between blood and breath alcohol levels is irrelevant in a prosecution for violation of A.R.S. § 28-1381(A)(2), or "per se DUI." *Guthrie v. Jones*, 202 Ariz. 273, ¶¶1-2, 43 P.3d 601, ¶¶1-2 (App. 2002). Section 28-1381(A)(2) proscribes driving or physically controlling a vehicle with a specified "alcohol concentration." Because alcohol concentration is defined alternatively in A.R.S. § 28-101(2) in terms of either "[t]he number of grams of alcohol per one hundred milliliters of blood" or "[t]he number of grams of alcohol per two hundred ten liters of breath," breath alcohol levels alone can establish the alcohol concentration necessary to sustain a conviction for per se DUI; converting a breath alcohol level to its correlative blood alcohol level is not required. *Guthrie*, 202 Ariz. 273, ¶¶5-10, 43 P.3d 601, ¶¶5-10. Esser's sole conviction and two of Vidal's convictions were based on per se DUI violations.

and does not test ‘alveolar air’” was uncontradicted by the state; therefore, they contend, the state failed to meet its burden, and the trial court was obligated to grant the motion. We disagree.

¶15 Even assuming that Rule 16.2(b) is not limited to suppression motions made on constitutional grounds, as the state contends, but also applies to challenges such as this to the state’s compliance with statutory and *Frye* requirements for the admission of evidence, the rule did not compel suppression of the breath test results here. Contrary to appellants’ claim, the evidence was not uncontroverted that the Intoxilyzer 5000 does not test alveolar air. As noted above, the trial court was not obligated to accept Hlastala’s personal definition of alveolar air, and the substance of his testimony and the documents admitted at the suppression hearing provided ample evidence from which the trial court could conclude by a preponderance of the evidence that the Intoxilyzer 5000 complies with R9-14-403(B)(1), Ariz. Admin. Code. Again, as the trial court articulated, the device tests exhaled air that is “to quite an extent, alveolar in composition.” That the evidence was introduced by a defense witness is immaterial. *See State v. Nunez*, 167 Ariz. 272, 279, 806 P.2d 861, 868 (1991) (state’s burden of proof satisfied through defense evidence).

DISPOSITION

¶16 We affirm Esser’s conviction and sentence and Vidal’s convictions and sentences.

JOHN PELANDER, Presiding Judge

CONCURRING:

PHILIP G. ESPINOSA, Chief Judge

WILLIAM E. DRUKE, Judge (Retired)