IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF ALABAMA
NORTHERN DIVISION

THOMAS D. ARTHUR,	)	
	)	
Plaintiff,	)	
	)	
v.	)	CASE NO. 2:11-CV-438-WKW
	)	[WO]
	)	
JEFFERSON S. DUNN, *et al.*,	)	
	)	
Defendants.	)	

MEMORANDUM OPINION AND ORDER

For more than thirty-one years, Plaintiff Tommy Arthur, an Alabama death-row inmate, has litigated in the state and federal courts[1] of Alabama, and in the Eleventh Circuit and the United States Supreme Court, as is his right.[2] The present case has been in litigation since June 8, 2011. Under controlling law, Arthur's bottom-line task here and now is very clear and forthright: Proceeding under 42 U.S.C. § 1983 without challenging the judgment of execution, he must provide a known and available alternative for what he claims is an unconstitutional execution

[1] Arthur's federal court litigation includes a habeas petition filed under 28 U.S.C. § 2254, a prior case filed under 42 U.S.C. § 1983, and the current § 1983 action.

[2] He was tried for a 1981 murder three times and sentenced to death three times, in 1982, 1987, and 1992. In 2007, Arthur appealed the dismissal of a previous § 1983 action to the Eleventh Circuit. In deciding that appeal, the Eleventh Circuit reviewed Arthur's extensive litigation history and referred to that appeal as "Arthur XXI." *Arthur v. King*, 500 F.3d 1335, 1337 (11th Cir. 2007) ("Arthur XXII"). That was almost nine years ago.

method employed by Alabama. He failed to do so in a trial held on his Eighth Amendment facial challenge in January 2016. (*See* Doc. # 359.) He has now failed again to provide an alternative method of execution, this time with respect to his alleged idiosyncratic or unique medical conditions in an as-applied challenge. This memorandum opinion and order will conclude this case.

This matter is before the court on Defendants' Motion for Judgment on the Pleadings, and in the Alternative, Motion for Summary Judgment on Arthur's Eighth Amendment as-applied claim based on his unique health concerns (Doc. # 364), and Arthur's Motion for a New Trial (Doc. # 367), filed pursuant to Federal Rule of Civil Procedure 59(a). The motion for new trial relates to his Eighth Amendment facial claim that was resolved after a trial in January 2016. All motions have been fully briefed and are ripe for review. Defendants' alternative Motion for Summary Judgment is due to be granted, and Arthur's Motion for a New Trial is due to be denied. These motions will be addressed in that order.

I. BACKGROUND

A. Factual Background and Procedural History

The factual background and procedural history have been thoroughly recounted in *Arthur v. Thomas*, 674 F.3d 1257 (11th Cir. 2012), in prior opinions of this court, and most recently on April 15, 2016. (Doc. # 359 at 2-6.) They need not be repeated here, except for a brief review which will be followed by a summary

of the relevant factual and legal developments that have occurred following the first part of the bifurcated trial conducted on January 12-13, 2016. On June 8, 2011, Arthur filed this action under § 1983 challenging the constitutionality of Alabama's method of execution under the Eighth and Fourteenth Amendments to the United States Constitution after Alabama changed its three-drug, lethal injection cocktail by substituting pentobarbital for sodium thiopental as the first drug to be injected.[3] (Docs. # 1, 12.) In 2014, Alabama again changed its three-drug cocktail, this time to midazolam hydrochloride, rocuronium bromide, and potassium chloride, and Arthur amended his complaint to challenge, as violating the Eighth Amendment, that lethal injection protocol as well.[4] (Doc. # 197.) Arthur's Fourteenth Amendment equal protection claim concerned the "consciousness assessment" component of Alabama's execution protocol. Following the Supreme Court's ruling in *Glossip v. Gross*, 135 S. Ct. 2726 (2015), Arthur was given leave to file a Third Amended Complaint to meet the pleading requirements established by *Glossip* and *Baze v. Kentucky*, 553 U. S. 35 (2008), for Eighth Amendment method-of-execution challenges. (Doc. # 267.)

[3] The remaining two drugs used by Alabama at the time were pancuronium bromide and potassium chloride.

[4] Arthur's challenge concerns the substitution of midazolam hydrochloride for pentobarbital; he does not challenge the substitution of pancuronium bromide for rocuronium bromide.

On January 12–13, 2016, the court conducted the first part of a bifurcated bench trial (1) on Arthur's Eighth Amendment facial claim concerning only the second prong of the *Baze*/*Glossip* test, *i.e.*, the availability of an alternative method of execution to the current lethal injection protocol, and (2) on Arthur's Fourteenth Amendment equal protection claim challenging the consciousness assessment. After considering all of the testimony and other evidence from the bench trial, on April 15, 2016, the court entered its Findings of Fact, Conclusions of Law, and Judgment in favor of Defendants on those claims. (Doc. # 359.) Arthur failed to prove an alternative to the current execution protocol in Alabama. The court found that neither pentobarbital nor sodium thiopental is available to ADOC as an execution drug.[5] Even if he could prove an unconstitutional risk, he could not and did not prove a viable, known and available method of execution; therefore, Arthur's Eighth Amendment facial claim failed.

The remainder of Arthur's Eighth Amendment claim, viewed as an as-applied claim concerning his alleged unique medical condition, was not tried and has not been resolved. This opinion addresses the remaining issue: Arthur's health concerns as expressed in his Third Amended Complaint. (Doc. # 267 at ¶¶ 5d, 18, 89 & 100.) In a nutshell, Arthur has alleged that he has cardiovascular issues that

[5] Arthur proposed single doses of pentobarbital and sodium thiopental and a firing squad as alternatives. A firing squad is not a legal method of execution in Alabama.

combine with his age and emotional makeup to create a constitutionally unacceptable risk of pain if he is executed under the current protocol.

B. Court-Ordered Modified Protocol Negotiations

Acknowledging the possibility that Arthur's claim that his idiosyncratic or unique health issues, if proven, may require a modification of the ADOC's execution protocol in order to proceed with a constitutional execution, at the court's direction the parties engaged in a process to determine if they could agree on a modified protocol. The results of that process, which occurred after the trial but before the April 15 ruling, are summarized below.

On February 24, 2016, the court entered an Order establishing a format for the parties to engage in good faith efforts to resolve Arthur's protocol issues related to his specific health conditions. (*See* Doc. # 351.)[6] The order was very specific: "Arthur shall propose a modified protocol that reasonably addresses these [health] issues, and to which Arthur would stipulate." (*Id*. at 2.) The parties ostensibly complied with the court's directive and exchanged written proposals on

[6] Summarizing this order, the court directed the parties to meet and confer to determine if they could agree on a modified protocol that would accommodate Arthur's idiosyncratic health concerns. In advance of the meet-and-confer, the court directed the parties to propose a modified protocol to each other, starting with Arthur first proposing a modified protocol to Defendants, followed by Defendants' response thereto and a proposed modified protocol to Arthur. (*See* Doc. # 351 at 2.) If, after an exchange of proposed modified protocols the parties were unable arrive at a modified protocol to which they could stipulate, then the parties were directed to submit their respective positions on a modified protocol to the court, supported by briefing and evidence for the court's consideration. *Id.*

modifications to the current protocol; however, the parties were unable to reach an agreement on a modified protocol. Consequently, pursuant to the February 24 Order, the parties submitted their respective protocol proposals for the court's consideration. (*See* Docs. # 354 - 357.) Exhibits to these submissions included the written exchanges between the parties prior to the meet-and-confer.

These exhibits reveal that on March 8, 2016, Arthur advised Defendants that he could not stipulate to a modified three-drug protocol based on Alabama's current protocol using midazolam as the first drug. However, without waiving or modifying his position, Arthur's letter, in relevant part, stated:

> [H]is position is that a protocol designed to administer midazolam gradually and with due consideration for Mr. Arthur's medical condition—including with medical monitoring of Mr. Arthur's health by a trained professional during the protocol with the use of an electroencephalogram, an electrocardiogram, a bispectral index monitor and/or other appropriate methods—*may reduce to some extent* the likelihood of Mr. Arthur suffering the pain of a heart attack during administration of the protocol, although it would not ameliorate those risks entirely or address the other previously identified reasons why the use of midazolam in a three-drug execution protocol is violative of Mr. Arthur's constitutional rights. Such a modified protocol may also require the administration of other medication to prevent cardiac complications. Counsel for Mr. Arthur are endeavoring to obtain further medical advice, within the confines of ethical rules, regarding timing and monitoring requirements and will be prepared to discuss any further details after receipt of Defendants' position on March 15, 2016 during the parties meet and confer on or before March 22, 2016.

(Doc. # 354-1 (emphasis added).)

On March 15, 2016, Defendants responded to Arthur's March 8 letter, noting that Arthur did not address his specific health concerns and did not propose an actual protocol or provide specific details on modifying the protocol. (Doc. # 354-2.) Defendants asked Arthur to provide specific details on the following:

> • Define what a gradual administration meant and explain how "gradually" Arthur wanted midazolam to be administered;
>
> • Define what "due consideration" for his medical condition meant;
>
> • State what specific trained professionals he wanted to participate in his execution and what specific role these professionals would have in addressing his alleged health concerns; and
>
> • State what specific "other medication" he wanted to be administered to prevent cardiac complications.

(*Id.*) Defendants requested Arthur to provide this specific information prior to the meet-and-confer, and to explain how these modifications can be implemented. (*Id.*) Given the lack of detailed information from Arthur regarding a modified protocol, Defendants maintained their position: "Defendants believe that a properly administered 500-milligram bolus of midazolam, as called for in the ADOC's execution protocol, will adequately address Arthur's alleged health concerns." (Doc. # 354-2 at 2.)

While not detailed here, the parties exchanged additional correspondence, but to no avail. (*See* Docs. # 354-3, 355-10, 355-14.) Arthur contends he complied with the court's directive to propose a modified protocol to which he would agree,

but as discussed later in this opinion, that is not the case. From Defendants' perspective, Arthur had the initial burden to propose a modified protocol, but he did not meet that burden in that his proposals were too vague and generalized to enable Defendants to stipulate or to meaningfully respond. Hence, an impasse in stipulating to a modified protocol ensued.[7]

Based on the parties' negotiations toward a modified protocol and the evidence actually produced, the court concludes that Arthur's submissions reflect a lack of good faith in resolving whatever health issues apply to him with respect to the present execution protocol. Intense prodding by the court saw Arthur essentially standing mute as to the existence of a specific remedy, *i.e.*, a proposed alternative method of execution, for an alleged unconstitutional risk. It surely can be no surprise to Arthur that § 1983 method-of-execution proceedings, like all lawsuits, contemplate a remedy, a resolution to which the person bringing the suit would stipulate, were it offered by the opposition. No such remedy, despite repeated invitations to Arthur, has been offered. He has produced no *bona fide*

[7] As amply demonstrated by Defendants' submissions, Arthur's responses to the February 24, 2016 Order were vague and incomplete. All three "proposals" were little more than nonspecific suggestions replete with vaporous modifiers, as seen from the following examples:

(1) administration of midazolam "gradually [undefined] and with due consideration [undefined] for [his] medical condition [unproven]" (Doc. # 354-1);

(2) "medical monitoring" [unspecified] "by a trained professional" [unspecified] using appropriate methods [unspecified] (Doc. # 354-1); and

(3) "the administration of other medication" [unspecified as to what, how much, dosage or rate of administration]. (Doc. # 354-1 (brackets added).)

proposal a court could weigh and consider, despite having the benefit of world-renowned medical and scientific experts,[8] and despite having litigated this case since 2011.

C. Arthur's As-Applied Eighth Amendment Claim

In Arthur's Complaint and First Amended Complaint, his Eighth Amendment challenge to the execution protocol was facial. (*See* Docs. # 1, 12.) However, in both his Second Amended Complaint and Third Amended Complaint, Arthur included allegations that suggested he was asserting an as-applied Eighth Amendment claim in addition to his facial challenge. (*See* Doc. # 197, ¶¶ 5d, 18, 79, 81, 90; Doc. # 267, ¶¶ 5d, 18, 89, 100.) Thus, over the course of this protracted litigation, Arthur's facial challenge has evolved into both a facial challenge and an as-applied challenge to the execution protocol.

While Arthur did not specifically delineate his hybrid Eighth Amendment claim into separate counts or plead it clearly, not following the format established by Federal Rules of Civil Procedure 8 and 10(b), his filings indicate that his Eighth Amendment claim includes not only a facial claim but also an as-applied claim.

[8] Arthur recently but belatedly offered a supplemental Declaration of one of his experts, J. Russell Strader, Jr., M.D., F.A.C.C., which came closer to the mark of specificity. (*See* Doc. # 355-12.) Dr. Strader offered a range of prebolus dosages of midazolam together with a time range of administration, but failed to suggest how long to administer the prebolus protocol, how to determine when it has reached its intended effect, or even what would constitute the intended effect.

That the claims are not delineated as such, but rather are intertwined, has required significant sorting and deciphering, and the court would have acted well within its discretion to dismiss the as-applied claim. *Cf. Gissendaner v. Comm'r, Ga. Dep't of Corr.*, 803 F.3d 565, 567 (11th Cir.) (*Gissendaner II*), *cert. denied sub nom. Gissendaner v. Bryson*, 136 S. Ct. 26 (2015) (observing that the court "would have been well within its discretion to strike" the complaint because it violated Federal Rule of Civil Procedure 8(b)(2)). Notwithstanding the procedural irregularity and Defendants' urging, out of an abundance of caution, the court has considered his as-applied claim on the merits.

Cognizant of the medical profession's stance on lethal injection executions[9], and immediately after publishing the April 15, 2016 ruling on the first issues tried in January, the court reviewed all submissions and concluded that it was questionable whether Arthur could produce evidence sufficient to support an as-applied Eighth Amendment claim, especially on the *Baze*/*Glossip* prong requiring proof of a known and available alternative method of execution. No dispositive motion was pending so the court *sua sponte* ordered Defendants to file the current dispositive motion and invited, but did not require, Arthur to do likewise. (*See* Doc. # 360.)

[9] *See* American Medical Association Code of Medical Ethics, *Opinion 2.06 – Capital Punishment*.

Of particular note, that Order very clearly required Arthur to provide evidence of "*specific, detailed, and concrete alternatives or modifications to the protocol [ ] that more than marginally address his serious health risks*," and that "*provide precise procedures, amounts, times, and frequencies of implementation that would avoid the court being called upon to make improper medical, scientific, or peneological decisions, and [ ] that do not implicate abrogation of the death penalty* per se." (Doc. # 360 (emphases added).) Defendants filed a dispositive motion, but Arthur did not. Instead, Arthur filed a motion for a new trial on his Eighth Amendment facial claim.

Arthur claims that because of his unique health concerns, Alabama's execution protocol as applied to him will be cruel and unusual punishment in violation of the Eighth Amendment. Arthur states that because there is a "high likelihood that [he] has clinically significant obstructive coronary disease," (Doc. # 267-1 at ¶ 89), the administration of a 500-milligram dose of midazolam as the first drug in the three-drug protocol will likely induce "a rapid and dangerous reduction in blood pressure," (*Id.* at ¶ 88) and "will cause him to suffer a painful heart attack before he loses consciousness." (*Id.* at ¶ 87.) Arthur also alleges:

> 100. *Finally*, there is a high likelihood that Mr. Arthur, who, among other things, is in his seventies and suffers from an anxiety disorder, will experience a paradoxical reaction to the intravenous administration of midazolam, causing Mr. Arthur to remain in a conscious state and suffer the severe pain of the administration of the second and third lethal injection drugs . . . .

(Doc. # 267-1 at ¶ 100.)

Distilled to its essence, Arthur's as-applied claim is that his cardiovascular issues, combined with his age and emotional makeup, create a constitutionally unacceptable risk of pain that will result in a violation of the Eighth Amendment if he is executed under the ADOC's current protocol. Because Arthur does not request specific relief on his as-applied claim, it will be presumed that Arthur proposed the same alternatives for relief as he proposed for his facial claim: a single-drug injection of either compounded pentobarbital or sodium thiopental, or a firing squad (the latter of which is not authorized in Alabama). However, based on his proof and giving Arthur the benefit of the doubt, he also is requesting modification of the current protocol to require midazolam to be administered gradually with medical monitoring as an additional alternative form of relief, (*See* Strader Supp. Decl. (Doc. # 378-2), but in contradictory fashion, Arthur's proof from Dr. Kaye is that midazolam in any form of dosage cannot be used in a constitutional execution.

In evaluating this claim, the court is guided by controlling precedent, *Baze v. Kentucky*, 553 U. S. 35 (2008) and *Glossip v. Gross*, 135 S. Ct. 2726 (2015), explained in *Glossip*, below:

> The controlling opinion in *Baze* first concluded that prisoners cannot successfully challenge a method of execution unless they establish that the method presents a risk that is '''*sure or very likely* to cause serious illness and needless suffering,' and give rise to 'sufficiently imminent dangers.''' *Id*., at 50, 128 S. Ct. 1520 (quoting *Helling v. McKinney*, 509 U. S. 25, 33, 34–35, 113 S. Ct.

> 2475, 125 L. Ed. 2d 22 (1993)). To prevail on such a claim, ‘‘there must be a ‘substantial risk of serious harm,’ an ‘objectively intolerable risk of harm’ that prevents prison officials from pleading that they were ‘subjectively blameless for purposes of the Eighth Amendment.’’’ 553 U. S., at 50, 128 S. Ct. 1520 (quoting *Farmer v. Brennan*, 511 U. S. 825, 846, and n. 9, 114 S. Ct. 1970, 128 L. Ed. 2d 811 (1994)). The controlling opinion also stated that prisoners ‘‘cannot successfully challenge a State’s method of execution merely by showing a slightly or marginally safer alternative.’’ 553 U. S., at 51, 128 S. Ct. 1520. Instead, prisoners must identify an alternative that is ‘‘feasible, readily implemented, and in fact significantly reduce[s] a substantial risk of severe pain.’’ *Id*., at 52, 128 S. Ct. 1520.
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> The controlling opinion summarized the requirements of an Eighth Amendment method-of-execution claim as follows: ‘‘A stay of execution may not be granted on grounds such as those asserted here unless the condemned prisoner establishes that the State’s lethal injection protocol creates a demonstrated risk of severe pain. [And] [h]e must show that the risk is substantial when compared to the known and available alternatives.’’ *Id*., at 61, 128 S. Ct. 1520. . . .
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> The challenge in *Baze* failed both because the Kentucky inmates did not show that the risks they identified were substantial and imminent, *id*., at 56, 128 S. Ct. 1520, and because they did not establish the existence of a known and available alternative method of execution that would entail a significantly less severe risk, *id*., at 57–60, 128 S. Ct. 1520.

Glossip, 135 S. Ct. at 2737.

Additionally, in *Gissendaner II*, the Eleventh Circuit held that the pleading burden and standard of proof established in *Baze* and *Glossip* applied to both facial and as-applied Eighth Amendment claims challenging the method of execution. *See* 803 F.3d at 568–69. As pertinent here, *Gissendaner II* establishes that a condemned

inmate must both plead and prove a readily available alternative whether the inmate is raising an Eighth Amendment as-applied challenge or a facial challenge: "[T]here is no logical reason why there should be a readily available alternative requirement in facial challenges to lethal injection protocols but not to as-applied challenges to them." *Id.* at 569.

Arthur argues that there are good grounds for distinguishing *Gissendaner II* and foregoing the requirement in this case of showing a readily available alternative method of execution. As he points out, the *Gissendaner II* majority distinguished the facts in *Seibert v. Allen*, 506 F.3d 1047 (11th Cir. 2007), in which the condemned inmate obtained a preliminary injunction on an Eighth Amendment claim that lethal injection would cause him severe pain based upon his inoperable pancreatic cancer. The Eleventh Circuit noted that Gissendaner's claim, unlike Seibert's claim, did not involve an assertion that the "plaintiff's unique medical condition would enhance the likelihood and severity of a painful death." *Gissendaner II*, 803 F.3d at 565 n.1. Notwithstanding this factual distinction, *Gissendaner II* made no legal distinction in the elements of proof for facial and as-applied method-of-execution claims. It even went so far as to say that *Seibert* "does not serve as an authoritative interpretation of the requirements announced in *Baze* and *Glossip* because it preceded both of those decisions." *Id.* And in *Terrell v. Bryson*, 807 F.3d 1276 (11th Cir. 2015), the concurring opinion confirmed

Gissendaner II's reach to as-applied challenges. *See id.* at 1280 (Marcus, J., concurring) ("As we've said in binding precedent, 'a readily available alternative' showing is required in all challenges to lethal injection protocols.") (citing *Gissendaner II*, 803 F.3d at 569)).[10] Thus, as to his as-applied claim, Arthur has the burden to plead and prove a known and available alternative method of execution. *Glossip*, 135 S. Ct. at 2739.

D. Arthur's Idiosyncratic Health Issues[11]

Arthur is currently 74 years old. He contends that he suffers from clinically significant coronary artery disease ("CAD")[12] and that because of that condition, he

[10] The Eleventh Circuit's ruling in *Gissendaner II* that an inmate filing an as-applied challenge must meet the pleading and proof standard of *Baze* and *Glossip* is consistent with the law in another circuit. Specifically, the Eighth Circuit has held that an inmate who filed an as-applied challenge to Missouri's method of execution had to "identify a feasible, readily implemented alternative procedure that will *significantly* reduce a substantial risk of severe pain and that the State refuses to adopt." *Bucklew v. Lombardi*, 783 F.3d 1120, 1128 (8th Cir. 2015) (emphasis in original). The Eighth Circuit recognized that there was some pre-*Baze* case law supporting the inmate's assertion that his as-applied challenge distinguished his case from a facial challenge to Missouri's lethal injection protocol. *Id.* at 1127. But ultimately, the court held that "capital punishment is constitutional. It necessarily follows that there must be a means of carrying it out." *Id.* at 1128 (quoting *Baze*, 553 U.S. at 47).

[11] In Arthur's Third Amended Complaint, he alleged that because of his age and because he suffers from an anxiety disorder, there is a high likelihood that he will experience a paradoxical reaction to midazolam, resulting in his remaining in a conscious state and suffering the pain of the administration of the second and third lethal injection drugs. (Doc. # 267 at 30, ¶ 100.) However, Arthur offered no medical evidence to support his claim that he suffered from an anxiety disorder. Given his failure of any proof, the court presumes that Arthur has abandoned that part of his claim.

[12] As explained in greater detail *infra*, Dr. Strader reports that before coronary artery disease (CAD) is clinically significant, the cross-section of an artery needs to be at least 70% obstructed. (Doc. # 378-1 at 10, ¶ 2.)

cannot be executed under the present protocol because a 500-mg bolus dose of midazolam will induce a heart attack that he will experience before the midazolam sedates him. Arthur offers support for this argument with the opinions of his expert, J. Russell Strader, Jr., M.D., F.A.C.C.[13] Dr. Strader's declaration contained two separate risk assessments from a clinical, not capital punishment, perspective when he is treating a medical patient: "*First*, what is the likelihood that the individual has clinically significant obstructive coronary disease? *And second*, what is the likelihood that the level of anesthesia required for the proposed procedure will cause the onset of myocardial ischemia and/or infarction?" (Doc. # 378-1 at 3, ¶ 4 (emphases in original).) Dr. Strader attempted to extrapolate his clinical observations of routine doses of 2–5 mg of midazolam (and a high of 20 mg, titrated) into a medical and scientific conclusion regarding a 500 mg dose of midazolam, the one used in Alabama as the first of the three-drug protocol.

Based on his review and analysis of Arthur's medical records, Dr. Strader opined that there is a "significant risk" that Arthur suffers from clinically significant

[13] Summarizing Dr. Strader's background and qualifications, he is board-certified by the American Board of Internal Medicine in both Internal Medicine and Cardiovascular Disease, and he is also board-certified by the American Society of Nuclear Cardiology. He was formerly Chief of Cardiovascular Services at The Medical Center of Plano in Plano, Texas, and he is currently a cardiologist in private practice in Colorado Springs, Colorado. He sees an average of 100-125 patients per week. In his routine clinical practice, he administers midazolam to patients for the purpose of achieving sedation for invasive cardiac procedures. As of November 16, 2015, he had performed approximately 3,500 invasive procedures using midazolam. (*See* Doc. # 378-1 at 3, ¶¶ 1, 3, 5.)

obstructive CAD, for the reasons succinctly stated in his November 15, 2015 Declaration:

> 8. In my professional medical opinion, Mr. Arthur's abnormal ECGs showing evidence of a prior myocardial infarction, history of recurrent atrial fibrillation, age, presence of hypertension, and symptoms of recurrent chest pain are all independent risk factors for coronary heart disease and confer a significant risk of having clinically significant obstructive coronary artery disease of at least 70%, and possibly greater.

(Doc. # 378-1 at 12, ¶ 8.)

In reaching his next opinion, Dr. Strader defined coronary atherosclerosis and reviewed its relevant aspects, reporting that a coronary artery needs to be 70% obstructed before it is hemodynamically significant, as detailed below:

> 1. Coronary atherosclerosis refers to the deposition of cholesterol into plaques within the walls of the coronary arteries. Over time, this results in the narrowing of the vessel, resulting in what is commonly referred to as coronary heart disease. It takes 3-10 years for cholesterol plaques to grow to the level of obstructing blood flow down the coronary arteries.
>
> 2. Cholesterol plaques typically need to obstruct at least 70% of the cross-sectional area of the artery before they are hemodynamically significant, *i.e.*, before they provide a degree of obstruction sufficient to cause interruptions or reductions in blood flow down the coronary artery such that there is a high risk of induction of myocardial ischemia/infarction. At levels of obstruction less than 70%, there is generally enough flow such that alterations in blood pressure (*e.g.*, supply), or actions such as exercise that increase myocardial oxygen requirements (*e.g.*, demand), do not result in an inadequate oxygen supply to the myocardium.

(Doc. # 378-1 at 9-10, ¶¶ 1-2.)

Based on (1) Dr. Strader's review noted above, (2) his review of the relevant aspects of myocardial ischemia/infarction (Doc. # 378-1 at 10-11), (3) his opinion that Arthur suffers from clinically significant obstructive CAD, (4) the known hemodynamic effects of midazolam, (5) his experience with midazolam in clinical practice, and (6) a wide array of medical literature in the field,[14] Dr. Strader rendered a second opinion, as follows:

> 5. It is therefore highly likely that an individual with obstructive coronary disease who is given a large and rapid dose of midazolam would feel the resulting myocardial ischemia and/or infarction, because it takes more time for midazolam to induce sedation than it does for myocardial ischemia/infarction to occur.
>
> . . .
>
> 7. It is thus highly likely that the administration of a large dose of midazolam to Mr. Arthur as directed by the ADOC protocol would result in the very rapid induction of acute myocardial ischemia/infarction.
>
> 8. Given that the onset of myocardial ischemia and/or infarction is immediate, it is highly likely that Mr. Arthur would experience the excruciating pain of a heart attack before the onset of midazolam's sedative effect.

(Doc. # 378-1 at 13, ¶¶ 5, 7-8.) Arthur relies heavily on the expert testimony of Dr. Strader to establish the risk prong of *Baze/Glossip* and to support the alternative method prong.

[14] This supporting medical literature (consisting of excerpts from medical treatises, peer-reviewed articles and clinical studies) is attached to Dr. Strader's deposition. (*See generally* Doc. # 364-4.)

While Dr. Strader's expert medical opinions are unrebutted by affirmative evidence, it is also undisputed that Arthur has not seen or been examined by a cardiologist or other cardiac specialist since 2009; that there are no current test results or other recent evidence of Arthur's present health condition; that he repeatedly has refused such examination (*see generally* Doc. # 364-6 (2009–15 medical records))[15]; and that Dr. Strader opines without ever having examined Arthur. Nor did Dr. Strader, who appears to be an expert of the highest caliber in his field, offer a specific method to address both Arthur's alleged health needs and the *Baze/Glossip* alternative method requirement.

Based on controlling precedent and for the reasons explained below, Arthur has not established that he is entitled to proceed on his as-applied Eighth Amendment claim.

II. DISCUSSION

A. Defendants' Motion for Judgment on the Pleadings and Alternatively for Summary Judgment

1. *Standard of Review*

At the court's direction, Defendants moved for judgment on the pleadings, and alternatively, for summary judgment. (Doc. # 364.) As grounds, Defendants

[15] In fact, Arthur has refused or interfered with all medical care, including drug regimen and annual checkups, since 2009. (*Id.*) He refused to get out of the ADOC vehicle at his last cardiologist appointment in March 2009. (Doc. # 364-6, at 15–20.)

submit that, although Arthur asserted claims regarding his alleged health concerns, the record reflects that he has no remaining claims pending. Defendants also contend that Arthur failed to raise an as-applied Eighth Amendment claim, but even if he had raised that claim, he failed to plead and prove it adequately. Defendants further argue that even if Arthur is deemed to have alleged an as-applied claim, summary judgment is warranted on that claim because Arthur has failed to produce evidence that establishes a genuine dispute of material fact that (1) the use of midazolam is "sure or very likely to cause serious illness or needless suffering" by causing him to experience a painful heart attack, and (2) there are known and available alternatives that are feasible, readily implemented, and in fact significantly reduce a substantial risk of severe pain.

The parties have engaged in extensive discovery, and their present submissions rely largely on the evidence. Given the posture of this case and notwithstanding the Third Amended Complaint's shortcomings, *see supra* at Part I.C., the court finds that the better course is for it to decide Defendants' motion under the summary judgment standard. Defendants' motion for judgment on the pleadings will be treated, therefore, as a motion for summary judgment under Federal Rule of Civil Procedure 12(d) (If a court considers "matters outside the pleadings," a Rule 12(c) "motion must be treated as one for summary judgment under Rule 56.").

Summary judgment is proper only when the record evidence, including depositions, affidavits, and other materials, shows "that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." *Celotex Corp. v. Catrett*, 477 U. S. 317, 322 (1986); Fed. R. Civ. P. 56(a), (c). "The moving party bears the burden of proof," *Allen v. Bd. of Pub. Educ. for Bibb Cty.*, 495 F.3d 1306, 1313 (11th Cir. 2007), and the court must "view the evidence and all factual inferences therefrom in the light most favorable to the non-moving party, and resolve all reasonable doubts about the facts in favor of the non-movant," *Skop v. City of Atlanta*, 485 F.3d 1130, 1143 (11th Cir. 2007).

2. *Standard of Proof for § 1983 Method-of-Execution Claim*

Summarizing and paraphrasing the *Baze/Glossip* test, to successfully challenge a method of execution (facial or as-applied), a prisoner must establish that the method presents a risk that is '"*sure or very likely* to cause serious illness and needless suffering,' and give rise to 'sufficiently imminent dangers."' *Glossip*, 135 S. Ct. at 2737 (emphasis in original). To prevail, "there must be a 'substantial risk of serious harm,' an 'objectively intolerable risk of harm' that prevents prison officials from pleading that they were 'subjectively blameless for purposes of the Eighth Amendment.'" *Id.*

Further, a prisoner "cannot successfully challenge a State's method of execution merely by showing a slightly or marginally safer alternative." *Baze*, 553

U. S. at 51. He "must identify an alternative that is 'feasible, readily implemented, and in fact significantly reduce[s] a substantial risk of severe pain.'" *Id*. at 52.

In short, Arthur must point to admissible evidence that would, if credited, establish a risk and a known and available alternative method of execution that significantly reduces that risk. As noted earlier, Arthur fails on the alternative method prong, just as he did in the January 2016 trial of the facial challenge. That failure will be addressed first; discussion regarding Arthur's unique health concerns and associated risks, *i.e*., the risk prong, will follow.

3. *Alternative Method Prong*

Post-*Baze* and *Glossip*, it is clear that before a prisoner is entitled to relief, he must also establish a remedy, that is, "the existence of a known and available alternative method of execution that would entail a significantly less severe risk." *Glossip*, 135 S. Ct. at 2737 (quoting *Baze*, 553 U. S. at 56-60). Arthur failed entirely to do so. During the meet-and-confer process previously described, Arthur proposed modifying the protocol "to administer midazolam gradually [undefined] and with due consideration [undefined] for [his] medical condition—including with medical monitoring of [his] health by a trained professional during the protocol [not identified]" with the use of various types of medical equipment "and/or other appropriate methods [not specified]. . . ." (Doc. # 354-1.) He allowed that "[s]uch a modified protocol may also require the administration of other medication to

prevent cardiac complications," (*id.*), without defining "other medication." Arthur further stated that these proposed modifications to the protocol "may reduce to some extent the likelihood of [his] suffering the pain of a heart attack during administration of the protocol," (*id.*), "but would not ameliorate those risks entirely . . . ." (*Id.*)

Arthur admits in the language set out above that his nebulous, nonspecific, and unexplained proposed modifications "may reduce to some extent" the likelihood of unconstitutional pain. (Doc. # 354-1.) His initial proposed alternative method of execution is a marginal one and does not satisfy *Baze*.

Later, Arthur added a measure of detail to his proposal with the filing of Dr. Strader's supplemental declaration (Doc. # 355-12; Doc. # 378-2), which offered a range of prebolus doses of midazolam together with a time range of administration, but which failed to suggest how long to administer the prebolus protocol, how to determine when it has reached its intended effect, or even what would constitute the intended effect. He opined that the gradual rate "would reduce the risk," though the reduction is unspecified and cannot be deemed to be more than marginal when considering the rest of Dr. Strader's requirements:

(1) A trained professional

(2) who assesses the patient's response to the prior dose; and, commonly,

(3) continuous EKG monitoring (which of course requires an EKG and qualified technician);

(4) continuous pulse oximetry monitoring;

(5) frequent blood pressure monitoring;

(6) agents to increase blood pressure ("pressors") if required by EKG results; and

(7) the addition of opioid fentanyl, which "is often administered with midazolam."

(*Id*.) Dr. Strader understandably identified these procedures as relevant "in the clinical setting" (¶ 7) and "in clinical practice" (¶¶ 8, 9). It is understandable because his opinion is a medical one, describing medical procedures, not execution procedures. *See Baze*, 553 U. S. at 59–60 (distinguishing executions from medical procedures). Thus, the outlined general procedures cannot be credited as constitutionally required modifications to the execution protocol in Alabama and do not constitute viable execution alternatives that are easily implemented and readily available.

Contrary to the court's clear directives requiring "specific, detailed and concrete alternatives or modifications to the protocol" with "precise procedures, amounts, times and frequencies of implementation," there is no evidence from which the court could craft a modification to the existing protocol, at least not

without itself engaging in the unauthorized practice of medicine and requiring medical procedures in the execution context.

A challenge to a method of execution that merely shows "a slightly or marginally safer alternative," *Baze*, 553 U. S. at 51, fails to meet the remedy test. Further, "because it is settled that capital punishment is constitutional, it necessarily follows that there must be a constitutional means of carrying it out." *Glossip*, 135 S. Ct. at 2732–33 (quoting *Baze*, 553 U. S. at 47) (alteration omitted)). Moreover, "because some risk of pain is inherent in any method of execution [,] . . . the Constitution does not require the avoidance of all risk of pain." *Id*. at 2733 (citation omitted).

To the extent that Arthur relies on any one-drug protocol using pentobarbital (as suggested by Dr. Strader) or sodium thiopental, those options were foreclosed by the evidence and findings thereon in the prior opinion. (Doc. # 359.) To the extent he suggests the use of midazolam at all, he also has insurmountable problems in terms of proof and evidentiary estoppel. One need consider only the 28-page declaration of Dr. Alan Kaye, a world-renowned anesthesiologist and Ph.D. pharmacologist (*see* Doc. # 355-13), submitted as evidence by Arthur himself, and cited repeatedly in Arthur's briefing. Dr. Kaye testifies, and binds Arthur to the notion, that midazolam absolutely and under no circumstances should ever be used

in lethal injection executions. Paragraph 67 illustrates but one of many avenues Dr. Kaye attacks midazolam:

> Because midazolam's pharmacological effect is reached at doses far below 500 mg, and at this dose an inmate will not be placed in a deep enough state of anesthesia such that he will not experience consciously the effects of the second and third drugs, the size of the dose Alabama intends to administer is no cure to the *fundamental unsuitability of midazolam as the first drug in the ADOC protocol.*

(Doc. # 355-13 (emphasis added).) At the end of 75 impressive paragraphs supported by his own and numerous other texts and opinions, copious footnotes, and metaphors and analogies that speak to a layperson's understanding, in paragraph 76 Dr. Kaye sums it up:

> In short, the chemical properties of midazolam limit its ability to depress electrical activity in the brain. The lack of another chemical property – analgesia – renders midazolam *incapable* of maintaining *even that limited level of depressed electrical activity* under the *undiminished pain of the second and third lethal injection drugs*.

(*Id.* (emphasis added).) Arthur cannot credibly propose the use of midazolam in any argument for a remedy, based upon his own evidence.[16]

Arthur's as-applied vehicle crashes at the same intersection as did his facial challenge. He has failed to point to admissible evidence that, if credited, would

[16] Kaye's opinions are untested in court, due to Arthur's inability to provide a remedy in his facial, and now as-applied, challenges. Kaye's opinions are cited here only to illustrate Arthur's wholly inconsistent argument that midazolam may be used in an alternative method of execution, not as evidence on the risk prong of the *Baze/Glossip* test.

establish an alternative method of execution that is readily available and more than "a slightly or marginally safer alternative." *Baze*, 553 U. S. at 51.

4. *The Risk: Arthur's Idiosyncratic or Unique Medical Condition*

Arthur's Eighth Amendment as-applied challenge is doomed for lack of proof of an alternative method of execution that satisfies the second prong of the *Baze*/*Glossip* test. The risk prong is therefore not dispositive, but is analyzed in the alternative, for two reasons. First, it is not at all clear that Arthur has sufficient evidence to go to trial on the issue of his unique health concerns. If his evidence of unique health risks rises to a level sufficient to survive summary judgment, it is barely so. Second, Dr. Strader's opinion that Arthur's blood pressure will drop precipitously *before* the anesthetic effects of midazolam take effect, thereby creating a likelihood of a painful heart attack before Arthur is sedated, is speculative and unreliable when extrapolated from a clinical dose of 2 to 5 mg, to a non-clinical, bolus dose of 500 mg. Neither Dr. Strader nor Dr. Kaye can testify to a reasonable degree of medical certainty that the "gap" between hemodynamic effects and sedative effects will occur at a bolus dose —a dose at least 100 times larger than any clinical dose with which Dr. Strader is familiar—at all; and if the gap does occur, in what sequence, *e.g.*, will the massive dose create sedative effects first, or hemodynamic effects first? No science has been offered on the question.

The science that is of record is, as they say, all over the place. Just one example: There is no agreement in the record as to the basic definitions of "sedate" and "sedative," and more importantly, "anesthesia." Dr. Kaye opines that midazolam will never produce a plane of anesthesia, as he defines it, even in a 500 mg dose (or presumably a 5000 mg dose, based on his foundational opinions). He would never, he says, use midazolam as a sole anesthetic agent for painful, invasive procedures. On the other hand, the FDA-approved label on midazolam says it will induce *anesthesia* in 1.5 minutes when used in conjunction with certain other medications, and in 2 to 2.5 minutes when used alone. Nevertheless, the court will venture into this technical thicket, hopeful of a logical and reasoned exit on the other side.

Dr. Strader opines that given Arthur's known, independent risk factors for heart disease, there is a significant risk that Arthur has clinically significant obstructive CAD. If Dr. Strader's opinion is admissible and credited, Arthur has cleared the first proof hurdle on summary judgment on the risk prong. He must still prove the risk of severe pain is very likely or sure to arise from Alabama's protocol.

Some background science must first be addressed.

5. *Hemodynamic and Anesthetic Effects of Midazolam*

a. *Hemodynamic Effects*

Dr. Strader's foundational opinion about the hemodynamic effects of midazolam is that "the injection of midazolam as directed by the ADOC protocol will likely induce a rapid and dangerous reduction in blood pressure more quickly than it results in sedation." (Strader 11/16/15 Decl. Ex, A, at 2, ¶ 3; Doc. # 364-1, at 2, ¶ 3.) In his clinical experience with clinical doses "midazolam typically will produce a 10-20% decline in arterial blood pressure." (Strader 11/16/15 Decl. Ex. A, at 2, ¶ 4; Doc. # 364-1, at 2 at ¶ 4.) Consistent with Dr. Strader's statement, the manufacturer's package insert for midazolam states that "IV induction of general anesthesia with midazolam was associated with a slight to moderate decrease in mean arterial pressure." (Doc. # 364-7 at 3.) Dr. Strader connects the hemodynamic effects with the anesthetic effects, postulating a gap in time between them, with hemodynamic effects occurring first.

b. *Anesthetic Effects*

Midazolam is characterized by Dr. Strader as both a sedative and anesthetic. Indeed, there is no dispute that ADOC uses midazolam for those very effects, before the introduction of the last two drugs in the protocol. Nor is it disputed that the consciousness assessment, addressed in a prior opinion (*see* Doc. # 359), is designed to measure in some fashion whether the sedative or anesthetic effect has occurred.

At trial in January 2016, Arthur presented medical expert testimony from Alan David Kaye, M.D., Ph.D., who is an anesthesiologist and Doctor of Pharmacology. Dr. Kaye explained the differences among these terms. First, "consciousness is being [in] a state of awareness, being able to perceive stimuli from the environment." (Kaye Trial Tr. vol. 2, 14:6-8.) Distinguishing between sedation and anesthesia, Dr. Kaye explained:

> Q. And what does sedation mean?
>
> A. Well, sedation is . . . a continuum. And . . . it would be being calm or relaxed or at ease relative to the environment and perception of stimuli.
>
> Q. And when you talk about a continuum, what do you mean by that?
>
> A. And so in anesthesia, of course, this is a very big deal. There can be mild sedation in which a person can easily respond to verbal cues and then moderate sedation where there is less response and finally deep sedation for which the person would be in a deeper plain of sedation. And in the far end of the continuum would be anesthesia. Anesthesia would basically be the deepest level of the continuum in the sedation kind of overview.
>
> THE COURT: Is this continuum widely recognized among academics in your field?
>
> THE WITNESS: Oh, absolutely. It's . . . understood at the level of the first-year anesthesia resident . . . .

(Kaye Trial Tr. vol. 2, 14:9 – 15:1.)

These definitions, from a highly qualified anesthesiologist, are useful in assessing Dr. Strader's "gap" testimony, *i.e.*, the suggested gap in time between the

onset of the hemodynamic and sedative effects one might expect with the administration of a bolus, rather than clinical, dose of midazolam. Analysis of that testimony follows.

c. *Clinical Dose for Sedation (2-5 mg)*

Dr. Strader's clinical experience is limited to administering small clinical doses of midazolam (2-5 mg) for purposes of sedation. (Strader Dep. 43:20-22.) In section D of his declaration, he summarizes the hemodynamic and anesthetic effects of a clinical dose of midazolam:

> 1. Administration of midazolam in large doses has significant hemodynamic effects, in that it can result in a quick and significant drop in blood pressure. The hemodynamic effects of midazolam occur quickly and are independent of midazolam's sedative effects. *In my clinical experience*, where midazolam in small doses (2-5 mg) is used to sedate patients undergoing invasive cardiac procedures, midazolam's sedative effects generally take 5 minutes or more to take effect. The hemodynamic effects of lowering blood pressure can occur much more rapidly (1-2 minutes).
>
> 2. Midazolam is a commonly used medication *in clinical medicine*. *When used in clinical doses* (typically 2-5 mg), midazolam often exerts significant effects on hemodynamic variables (e.g., blood pressure, pulse) prior to the onset of sedative effects. *When used in clinical doses*, midazolam typically results in a 10-20% fall in arterial blood pressure. Such a drop is especially common in elderly patients. A rapid drop in blood pressure can result in an immediate heart attack, particularly in individuals with obstructive coronary artery disease. Because of the significant risk of the onset of hemodynamic effects prior to the onset of anesthetic effects, clinical protocols have been established to ensure patient comfort and safety, including constant hemodynamic monitoring and waiting a sufficient length of time following administration of midazolam before the initiation of invasive or painful procedures.

(Strader 11/16/15 Decl., Ex A, at 5-6, ¶¶ 1-2; Doc. # 364-1 (emphasis added) (footnotes omitted).)

Because of the time gap of three to four minutes between the hemodynamic and sedative effects of a clinical dose (2-5 mg), Dr. Strader reports that the standard practice is to give midazolam to a CAD patient in small doses and to monitor the patient's response to the medication by closely observing the patient's vital signs for a rapid drop in blood pressure. If a rapid decrease in blood pressure occurs in the clinical setting, countermeasures are taken with drugs called "pressors" to raise blood pressure to avoid the onset of a heart attack. (Strader Dep. 17:10-16.)

Dr. Strader acknowledged that the medical literature referenced in his Declaration did not caution against using midazolam in patients with CAD and stated that "we use it in patients with coronary disease all the time in routine clinical practice." (Strader Dep. 37:1-10.) As of November 16, 2015, he had performed approximately 3,500 cardiac catheterizations using midazolam as a sedative. (Strader 11/16/15 Decl., Ex A, at 3, ¶ 5; Doc. # 364-1.) Dr. Strader reported that approximately 24 of these patients experienced a heart attack after being sedated with a clinical dose of midazolam. (Strader Dep. 53:10-17.) The statistics from Dr. Strader's practice reflect that less than 1% (0.00686%) of these 3,500 patients suffered a heart attack following administration of a clinical dose.

d. *Clinical Dose for Anesthesia*

Dr. Strader has little experience administering doses of midazolam that exceed a clinical dose (2-5 mg) for sedation. He explained: "In the clinical use in this setting, in the cardiac cath[erization] lab, it's administered in small doses 1/2 to 1 milligram at a time. Then there's a waiting period to assess response, and then readminister it if you need more." (Strader Dep. 11:6-11.) The largest dose of midazolam Dr. Strader has administered is a cumulative 20-mg dose that was given in small doses over time ("titrated"). (*Id*. at 13:19-24, 15:13-15.) Because Dr. Strader administers midazolam for sedation purposes only, he had no opinion as to what would be a clinical dose of midazolam sufficient to induce anesthesia. Dr. Strader testified that he was aware that midazolam had been approved for use to induce anesthesia, and he "thinks some anesthesiologists use it for that purpose. I don't have any direct knowledge of what they do." (Strader Dep. 25:11-17.) "To what extent midazolam would produce full unconsciousness or anesthesia, again, I would defer that to an anesthesiologist. It's outside the scope of my practice." (Strader Dep. 115:18-21.) As a board-certified internal medicine and cardiac disease specialist, Dr. Strader has never offered expert testimony, before this case, concerning anesthesia. (Strader Dep. 7:5-7.)

Some evidence is found in the manufacturer's package insert accompanying midazolam, which acknowledges midazolam's use for anesthesia and states

generally that its effects are dose-dependent: "The effects of midazolam on the CNS [central nervous system] are dependent on the dose administered, the route of administration, and the presence or absence of other medications." (Doc. # 364-7 at 2.) According to the package insert, when midazolam is "given IV as an anesthetic induction agent," *anesthesia is induced* in approximately 1.5 minutes, when narcotic premedication has been used, and in *2 to 2.5 minutes* when there is no narcotic premedication. (Doc. # 364-7 at 3). While there is no direct *medical* evidence of the time required by a bolus dose to induce anesthesia, the manufacturer's label is direct evidence that at clinical doses (1) midazolam will induce anesthesia (not just sedation) (2) in as little as 2 minutes without narcotic premedication.

e. *Non-Clinical Dose (500-mg)*

The 500-mg bolus dose of midazolam in the ADOC's protocol is a dose much larger than that administered in clinical practice, as Dr. Strader explains in his Declaration:

> 4. There is no institutional experience within the field of human medicine using the dose proposed by the ADOC (500 mg). Based on the expert report of Dr. Bannister, I understand that the midazolam called for in the ADOC lethal injection protocol may precipitate, *i.e.*, fall out of the solution, at the site of injection as it is first diluted with blood. Given the immediate and severe effects of midazolam on blood pressure, it is highly unlikely that 75% or more precipitation of the agent would preclude the hemodynamic effects noted above. Accordingly, the application of 500 mg of midazolam would be expected to create a significant risk of the

> onset of hemodynamic effects prior to the onset of sedative effects, even with more than 75% precipitation.

(Strader 11/16/15 Decl. Ex. A, at 6-7, ¶ 4; Doc. # 364-1 (footnotes omitted).)

While Dr. Strader has no experience with the effects of a 500-mg bolus dose of midazolam (a dose at least 100 times larger than any dose with which he is familiar), he yet opines that the hemodynamic effects would occur more quickly from a 500-mg dose than they would from a clinical dose. Dr. Strader was careful to qualify many times that his experience with midazolam is only with clinical (very small) doses. Especially with the critical gap in time between the sedative effect and the hemodynamic effect, Dr. Strader makes a point of the small (2-5 mg) dose of midazolam that results in the "gap." Dr. Strader declined to offer any opinion as to the amount of time it would take a 500-mg bolus dose to render one unconscious, reiterating "[t]hat's outside my realm of practice." (Strader Dep. 19:4-9.) Nevertheless, extrapolating from his clinical practice, Dr. Strader remained of the opinion that the sedative effects of a 500-mg bolus dose would take longer than the hemodynamic effects. (Strader Dep. 19:14-25.)

The court finds the latter opinion unreliable. *See generally Daubert v. Merrell Dow Pharm., Inc.*, 509 U. S. 579 (1993) (setting forth the standard for the admissibility of expert testimony). Because Dr. Strader cannot render an opinion regarding how much time it would take a 500-mg dose to render one unconscious, it is impossible for him to extrapolate a sequence of hemodynamic effect and

sedation. Moreover, any argument based upon the time-gap Dr. Strader emphasizes between midazolam's hemodynamic and sedative effects is speculative because the time-gap is associated with the clinical dose (2-5 mg) for sedation, not for anesthesia or bolus doses. Also, the argument is based upon an opinion of an expert who has never administered more than a 20-mg dose of midazolam, and typically only a 2-5 mg dose, in more than 3,500 invasive procedures in which he used midazolam.

In any event, taking all the available evidence, Arthur falls short of producing evidence that the current protocol as applied to him has a demonstrated risk, sure or very likely to cause severe pain. Arthur has pointed to no admissible medical expert opinion testimony to establish either the clinical dosage of midazolam necessary to induce anesthesia or the time-frame within which that would occur. Nor is there admissible scientific or medical evidence connecting Dr. Kaye's "consciousness continuum" directly to the time required for a 500-mg dose of midazolam to produce anesthesia.[17]

[17] Ironically, Arthur's expert in the field of anesthesiology, Dr. Kaye, says that there is no dosage of midazolam that will "hold an inmate unconscious in the presence of pain stimuli from the second and third drugs" in the ADOC's protocol. (Doc. # 378-11, at 1, ¶ 59.) Based upon midazolam's "inability to maintain unconsciousness in the presence of noxious stimuli," Dr. Kaye "would never attempt nor teach . . . [his] trainees to use midazolam by itself to induce and to maintain general anesthesia in a healthy adult patient undergoing a painful, invasive procedure." (Doc. # 378-11, at 12, ¶¶ 60–61.) The irony is that, as to this as-applied heart-attack challenge, Dr. Kaye's opinions drift into the facial challenge of the protocol itself, which is not relevant directly to Arthur's as-applied challenge. Arthur's argument is based solely on the "gap" between the onset of the blood pressure drop and the sedative effect, which he says will produce a painful

Moreover, the diagnosis of CAD is tenuous. Arthur could have cured that very easily by submitting to a medical examination, which he refused.[18] As it stands, he has not been examined for the alleged unique health condition since 2009, if then. Because he is relying on information that is more than six years old, with no tests or other findings of recent origin, Dr. Strader's diagnosis of CAD borders on being speculative and unreliable.

In any event, his diagnosis cannot support a finding that Arthur is sure or very likely to suffer a painful heart attack during the administration of midazolam. And it is not sure or very likely, from the evidence, that any drop in blood pressure will precede the anesthetic effects of midazolam. Both must exist—the heart condition and the gap Dr. Strader expects—for there to be a realistic likelihood of the heart attack. Arthur's evidence is based on clinical doses (2-5 mg) of midazolam for sedation, not a dose for anesthetic or execution purposes. Arthur presented no reliable, non-speculative evidence regarding the effects of a large, 500-mg bolus

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heart attack. He has made no reliable scientific connection between the two at a 500- mg bolus dose.

[18] It was not until May 4, 2016—nearly five years after the commencement of this lawsuit and sixteen months after he raised his as-applied claim (*see* Doc. # 197)—that Arthur's counsel moved for a court order to require Arthur to submit to a medical examination pursuant to Federal Rule of Civil Procedure 35(a) for a determination by a cardiologist as to whether he has clinically significant coronary artery disease that may be impacted by ADOC's execution. As explained in the Order entered on May 10, 2016 (Doc. # 366), that request came too little and too late in the litigation day and, consequently, was denied. Besides, Arthur has not wavered in his refusal: "I am not going to endure the pain and the absolutely unnecessary bruising that accompanies taking my blood." (*See* Doc. # 378 n.5.)

dose of midazolam and the speed at which it produces a decrease in blood pressure or anesthesia. Thus, it cannot be said that a heart attack is sure or very likely at all; one cannot make that connection from the medical evidence.

Arthur has failed to raise a genuine dispute of material fact of a sure or very likely risk of severe pain in the application of Alabama's execution protocol as applied to him. This failure also dooms his as-applied Eighth Amendment claim.

B. Arthur's Motion for a New Trial

Pursuant to Federal Rule of Civil Procedure 59(a)(2), Arthur has moved for a new trial on his facial Eighth Amendment claim[19] based on newly discovered evidence that he obtained post-trial. (Doc. # 367.) Specifically, Arthur states that on April 14, 2016, his counsel learned from plaintiffs' counsel in *Grayson v. Dunn, et al.*, No. 2:12-cv-316-WKW (M.D. Ala.)[20], another method-of-execution challenge pending before the undersigned, that Dr. Daniel Buffington, a pharmacist and Defendants' expert in this case and the *Midazolam Litigation*, testified during his deposition in March 2016 that he knew of qualified pharmacists who were willing to compound pentobarbital for the ADOC. Arthur contends that this new evidence undermines Defendants' position that the ADOC cannot obtain

[19] Arthur did not request a new trial on his Fourteenth Amendment claim and has reserved all rights to appeal the court's decision on all of his claims once the court enters a final and appealable order under 28 U.S.C. § 1291 and Federal Rule of Appellate Procedure 4(a)(1)(A).

[20] That consolidated case is known as the *Midazolam Litigation*.

compounded pentobarbital, as well as the court's prior finding that compounded pentobarbital is not available to the ADOC. For this reason, Arthur submits that a new trial is necessary.

Federal Rule of Civil Procedure 59(a)(2) provides that, "[a]fter a nonjury trial, the court may, on motion for a new trial, open the judgment if one has been entered, take additional testimony, amend findings of fact and conclusions of law or make new ones, and direct the entry of a new judgment." The Eleventh Circuit has held that "[t]o obtain a new trial based on such a motion, the movant must demonstrate that [(1)] the evidence was discovered after trial, [(2)] that due diligence was shown, and [(3)] that the evidence was neither cumulative nor impeaching but actually material and likely to produce a new result." *Branca v. Security Benefit Life Ins. Co.*, 789 F.2d 1511, 1512 (11th Cir. 1986).

Arthur contends that the evidence from Dr. Buffington satisfies the three *Branca* requirements and that, therefore, he is entitled to a new trial. On first blush, Arthur's argument has some appeal. But upon closer inspection of Dr. Buffington's deposition testimony and his post-deposition affidavit, the court concludes that Arthur's "new evidence" is nothing but generic testimony from Dr. Buffington describing passing conversations he has had with other pharmacists during national

conventions[21] concerning the use of pharmaceuticals, including pentobarbital, for lethal injection. Dr. Buffington testified, in general terms and without disclosing names, that he knew pharmacists who had indicated that they would prepare compounded pentobarbital for use in lethal injections. (Buffington Dep. 101:6-17.) However, he declined to provide any names, noting that he would need to obtain permission from these pharmacists to disclose their names before he could identify them. (Buffington Dep. 101:18-21.) Dr. Buffington's testimony taken out of context could create the impression that compounded pentobarbital *might* be available to the ADOC.

In response to Arthur's motion for a new trial and pursuant to Federal Rule of Civil Procedure 59(c), Defendants submitted the affidavit of Dr. Buffington to clarify his testimony concerning compounded pentobarbital. (Buffington Aff., Ex. B; Doc. # 383-2.) Summarizing his affidavit, Dr. Buffington states that Defendants retained him as an expert to provide information about the pharmacological effects of medications used in lethal injection protocols, midazolam in particular, but that he was not asked to render an opinion as to the availability or feasibility of obtaining either compounded pentobarbital or sodium thiopental for the ADOC or to assist

[21] Dr. Buffington, a pharmacist licensed in Florida and Georgia, is on the Board of Trustees of the American Pharmacists Association. (Buffington Dep. 97:11-16; 98: 16-19.)

the ADOC in locating a pharmacist to compound pentobarbital. (Buffington Aff., Ex. B, at 1-2; Doc. # 383-2.)

In his affidavit, Dr. Buffington explains that in response to questions by plaintiffs' counsel in the *Midazolam Litigation* about compounded pentobarbital, he "testified that the use of pharmaceuticals in lethal injections is an area of open discussion in the pharmacy community and that some colleagues [he] ha[s] encountered at professional events such as national conventions and conferences have commented that they would be willing to compound pentobarbital for use in lethal injections." (Buffington Aff., Ex. B, at 2; Doc. # 383-2.) However, he did not disclose the identity of any of these pharmacists. *Id.* He states that after his deposition, Defendants' counsel asked him to contact the compounding pharmacists and pharmacies that he thought "were capable of compounding pentobarbital to inquire if they were willing to be contacted directly by the ADOC concerning the performance of this type of technical service." *Id.* To comply with that request, Dr. Buffington states that he contacted fifteen pharmacists, some of whom were located in Alabama, to inquire as to their interest and willingness to provide compounded pentobarbital to the ADOC. Dr. Buffington reported their responses:

> 7. None of the 15 pharmacists [whom] I contacted were able and willing to supply compounded pentobarbital for use in lethal injections to the ADOC. In addition, none of the pharmacists provided me permission to share their names and contact information with the ADOC or counsel for the Defendants.

(Buffington Aff., Ex. B at 3, ¶ 7; Doc. # 383-2.)

Thus, Arthur's reliance on Dr. Buffington's testimony to support his motion for a new trial is misplaced. This testimony is insufficient to warrant granting Arthur a new trial because it is speculative as to compounded pentobarbital's availability to the ADOC. When examined in context, the testimony confirms that Arthur cannot prove that compounded pentobarbital is an alternative that is available to the ADOC. *See Glossip*, 135 S. Ct. at 2737. The testimony is "not likely to produce a new result," *Branca*, 789 F.2d at 1512, and Arthur's motion for a new trial is due to be denied.

III. CONCLUSION

For the reasons stated, it is ORDERED as follows:

1. Defendants' Alternative Motion for Summary Judgment on Arthur's as-applied Eighth Amendment claim (Doc. # 364) is GRANTED; and

2. Plaintiff's Motion for a New Trial on his Eighth Amendment claim (Doc. # 367) is DENIED.

A Final Judgment in Defendants' favor on all claims will be entered contemporaneously with this Memorandum Opinion and Order.

DONE this 19th day of July, 2016.

/s/ W. Keith Watkins
CHIEF UNITED STATES DISTRICT JUDGE