The Hard Truth About the Penile Plethysmograph: Gender Disparity and the Untenable Standard in the Fourth Circuit

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*Taking a new step, uttering a new word, is what
people fear most.*

—Fyodor Dostoevsky†

FOREWORD

John is a nineteen-year-old boy. He lives in an affluent area in a
house with both of his parents and a younger sister. John suffers from
crippling anxiety. He cannot go out in public, and he dislikes anyone
outside of his immediate circle. It was not always this way though.

Last year, John made good grades and played on the high school
football team. He was by all accounts, a very normal and well-adjusted
teenage boy. One day, eighteen-year-old John took consensual nude
photographs of his seventeen-year-old girlfriend. A few days later,
John bragged to his buddies about these pictures while in the locker
room before football practice. John’s friend, Brad, responded that he
did not believe John’s girlfriend would let him take pictures. John,
not wanting to be made fun of by the rest of the guys, grew defen-
sive and replied that he would post it on the team’s Facebook page
after practice. That night, upon receiving the image, one of the boys
candidly told his father about the picture. The father, concerned
that a picture was circulating of an underage girl, called the police.

One month later, John found himself in front of a judge where
he was convicted of production and distribution of child pornography.
Though John was a first-time offender, the judge viewed John as an
entitled jock and imposed a harsh sentence in an attempt to deter
other young adults from committing similar crimes. The sentence it-
self required only a few months of incarceration, however, as a condi-
tion of supervised release, the judge ordered John to undergo monthly
penile plethysmograph testing.

Now, every month for the next five years, John must go to a
testing center, where he is instructed to change into a hospital gown
and sit on a cold table. Next, a scientist in a lab coat comes in and
instructs John to put a gauge around the base of his penis. John is
then shown depictions of child pornography while the scientist
watches a monitor that registers any small change in penis size due
to erection. The testing itself is humiliating and degrading but even

† FYODOR DOSTOEVSKY, CRIME AND PUNISHMENT 2 (1866).
worse is that John hates being forced to view images of child pornography. John knows that sharing the pictures of his seventeen-year-old girlfriend was wrong, but he does not understand why he is now forced to see explicit images of young children as part of his punishment. John views the penile plethysmograph testing as far worse than his small stint in the prison system. Though he knows he will never commit any crime like this ever again, the whole process has caused him such horrible anxiety that John is unable to hold a job and does not leave his parents’ house unless he absolutely must.

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Unfortunately, the above hypothetical situation is not far from actual circumstances when a boy or man is convicted of a sex crime.1 Undoubtedly, there must be provisions of supervised release to prevent further harm in cases involving child pornography, but the current practice in the Fourth Circuit of using penile plethysmograph testing as a specific provision does not accomplish this goal. Research shows that the practice is not only outdated but disparately affects males over females.2 This disparate impact raises

constitutional concerns and suggests that maybe the Fourth Circuit needs to use more heightened scrutiny in its analysis when imposing the condition. Further, most circuits do not use this method, and those that do have a much higher standard than that of the Fourth Circuit in applying it as a provision of supervised release. Additionally, though it is imposed as a condition of supervised release, courts have ruled that penile plethysmograph testing may not be used as evidence in court because the test lacks “accepted standards in the scientific community.” This Note will begin by examining which offenders might be affected by penile plethysmograph testing, the history of the treatment, and how different courts use the treatment today as a condition of supervised release. This Note will then focus on the Fourth Circuit’s use of the treatment and how the treatment has a disparate impact on men.

I. WHO IS AFFECTED BY PENILE PLETHYSMOGRAPH TESTING?

Penile plethysmograph testing is routinely imposed as a condition of supervised release by various courts in the United States, though the various standards and methods differ not only across circuits but within them as well. Before diving into the different methods and the intricacies of penile plethysmograph testing, it is important to grasp the full scope of who is implicated by the imposition of this testing. To be certain, child pornography is a sensitive subject, however, it must be looked at through the lens of not only the most egregious offense, but rather, everything that falls under the umbrella of child pornography. For example, an eighteen-year-old who sends nude photographs of his mature, underage girlfriend to a friend would be guilty of child pornography production and distribution. Families Against Mandatory Minimums, a nonprofit organization that challenges what is considered excessive penalties required by mandatory minimums, points out that even a young adult man who records himself and his seventeen-year-old girlfriend having consensual sex would be guilty of child pornography production, even if he put the video on “his computer, with his girlfriend’s knowledge and with no intent to share the video with others . . . .” Families Against Mandatory Minimums has analyzed not only the

3. See infra Part V.
5. United States v. Medina, 779 F.3d 55, 69–70, 72 (1st Cir. 2015); United States v. McLaurin, 731 F.3d 258, 261 (2nd Cir. 2013); United States v. Music, 49 F. App'x 393, 394–95 (4th Cir. 2002) (per curiam); Powers, 59 F.3d at 1471.
7. Id.
Wide variety of crimes that constitute sex crimes but also how the sentences vary and are imposed. The group notes:

Even first-time offenders who do not receive a mandatory minimum can receive “substantially identical sentences as hardcore offenders.” In addition to increasing the base offense level, enhancements within the guidelines are frequently applied and can significantly increase the sentence. For example, one guideline enhancement is triggered if the defendant used a computer to receive or possess the material. The saturation of computer technology assures that nearly all child pornography offenders sentenced under this section receive this enhancement. As a result, a possession offender can easily receive a sentence longer than someone who sexually abuses a child.

While a vast array of crimes can constitute sex crimes, the labeling of an individual as a sex offender can have lasting and sometimes fatal impacts. The media writes every day of these impacts, covering stories such as that of two individuals who were beaten and killed in New Hampshire because of their status as sex offenders; of a husband and wife murdered in their own home by a white supremacist because the husband was listed as a South Carolina sex offender; or of a fifteen-year-old boy in Alabama who hung himself shortly after his arrest for streaking the field during a high school football game. These examples show that sex offenses cover a vast array of crimes, a fact which is important to keep in mind when looking at court-imposed conditions and their potential effects on the greater community.

II. THE PENILE PLETHYSMOGRAPH

In United States v. Weber, the Ninth Circuit addressed penile plethysmograph testing: “[a]lthough one would expect to find a description of such a procedure gracing the pages of a George Orwell novel rather than the Federal Reporter, plethysmograph testing has become routine in the treatment of sexual offenders and is often

9. Id. at 3 (internal citations omitted).
11. Id.
imposed as a condition of supervised release.”

Penile plethysmograph testing, commonly referred to as “PPG” testing, is used by courts today as a condition of supervised release to see whether an individual who has been convicted of a “sexually deviant” crime, such as those involving child pornography, is likely to recidivate. This testing is done by putting an apparatus on a man’s penis and then exposing him to various images and testing his sexual response.

III. HISTORY OF THE TEST

The penile plethysmograph was originally invented in 1908 when it was used on dogs to test how certain drugs regulated blood flow. Over the next thirty years, European doctors began using the penile plethysmograph on human subjects to study erectile dysfunction by using the plethysmograph on patients while they slept. In 1957, the test was modified by a Czech scientist named Kurt Freund to become a penile plethysmograph much like that used today to test for sexual deviance. Freund aimed to create a more objective method of “understanding deviant male sexuality by measuring it.” In 1957, when Freund first created this modified penile plethysmograph, he was living in Czechoslovakia where homosexuality was criminalized. Leaders in Czechoslovakia forced Freund to use his penile plethysmograph machine in an attempt to cure “homosexual men’s deviant impulses” as a kind of aversion therapy. This “therapy consisted of ‘giving the patient an electric shock whenever the plethysmograph showed he was [sexually aroused by] men.’” In 1960 though, Freund announced that he found homosexuality to be “incurable,” and based on this proclamation, “Czechoslovakia de-criminalized homosexuality in 1961.”

16. Id.
17. Id.
18. Bernstein, supra note 13, at 266 (quoting DAVID M. FRIEDMAN, A MIND OF ITS OWN: A CULTURAL HISTORY OF THE PENIS 231 (2001)).
19. Id. at 266–67.
20. Id. at 267.
21. Id. (quoting DAVID M. FRIEDMAN, A MIND OF ITS OWN: A CULTURAL HISTORY OF THE PENIS 232 (2001)).
22. Id. When Czechoslovakia de-criminalized homosexuality, it was one of the first countries to do so. Id.
Despite the country’s general decriminalization of homosexuality, homosexuals were still not permitted to serve in the nation’s army, so Freund used the penile plethysmograph to test the sexual preference of those trying to escape being enlisted.23 Freund “opposed the persecution of homosexuals” and immigrated to Canada in 1968, where he spent the last thirty years of his life using his machine to target pedophilic sexual interests.24

Meanwhile, in 1966, a scientist named John Bancroft, who was working for the Department of Psychiatry at a hospital in London, invented a similar penile plethysmograph machine.25 This penile plethysmograph was used as a shock therapy in which individuals were shown images of children and told to concentrate on sexual cognitions.26 When the subjects gained an erection, the scientist administering the test would give the subjects “painful electric shocks to the . . . arm.”27

By the 1970s, penile plethysmograph testing was being used in the United States to identify those with sexually deviant thoughts.28 It was also used at this time in a way similar to its counterpart in Europe where subjects were punished with shock waves when they became aroused by sexually deviant material.29

IV. TESTING TODAY

Testing today has not changed drastically, but courts have attempted to understand the procedure as a means of analysis by having expert witnesses testify as to the specific methods used in more modern times.30 One such expert, Dr. Gullick, described the process as part of her court testimony stating:

The individual is placed in a room and a mercury strain gauge is placed around the penis so that the circumference of the penis can be measured. And this mercury strain gauge is capable of measuring slight increases in circumference, many times before they are noticeable to the man himself. The individual is then

25. Id.
26. Id.
27. Id. (quoting J.H.J. Bancroft et al., A simple transducer for measuring penile erection, with comments on its use in the treatment of sexual disorders, 4 BEHAV. RES. & THERAPY 239, 240 (1966)).
28. Id.
29. Id.
presented with sequential stimulus materials, auditory and visual, encouraging him to think about and look at materials indicative of sexual activity with different ages of people, different genders and different sexual activities.31

While this case treats the above as a standard method, other litigation has pointed out that there are “well over a dozen potential sources of variation among different assessments, including the type of measuring device and stimuli that are used, the characteristics of the test, and the setting in which it is conducted.”32 This brings to light the great concern in both the courts and the academic community regarding not only the scientific validity of penile plethysmograph testing, but also the complete lack of standardization in its administration.33

A. The Different Methods

There are actually two different types of penile plethysmography: volumetric plethysmography and circumferential plethysmography.34 Volumetric plethysmography was the method originally developed by Freund in the 1930s.35 This method uses “a glass or rigid cylinder [which] is placed over the penis with an inflatable cuff that encloses the base of the penis.”36 “The tube [is] filled with air and sealed with the ‘ominous-sounding “locknut.”’”37 The man is then shown sexual material, and when the man sustains an erection, the air within the cylinder is displaced, and the plethysmograph uses the displacement of air as a way of indirectly measuring “penile volume.”38

The circumferential method was invented by Bancroft in 1966.39 This method directly measures changes in the diameter of a penis by using a mercury strain gauge.40 The gauge is placed around the base of the penis and is meant to measure any small alteration in penis size as a man becomes increasingly erect.41 This is done with

31. Id.
33. Id. at 564–65; Spencer, 459 S.E.2d at 815; Bernstein, supra note 13, at 274.
35. Bernstein, supra note 13, at 268.
36. Coric et al., supra note 34, at 27.
37. Bernstein, supra note 13, at 268 (quoting DAVID M. FRIEDMAN, A MIND OF ITS OWN: A CULTURAL HISTORY OF THE PENIS 231 (2001)).
38. Coric et al., supra note 34, at 27.
40. Coric et al., supra note 34, at 27.
41. Bernstein, supra note 13, at 268.
electrodes that are able to measure resistance as the man becomes erect, and “the mercury is thinned out against the ring.”

“The volumetric method is considered to be the more accurate and sensitive of the two, as it can detect even ‘the smallest changes in penis diameter.’” Still, while this method may be thought of as slightly more accurate, the scientific community and courts alike have found the testing to be lacking in reliability and standardization. Acclaimed scientists on the subject have commented on attempts to test sexual impulses and the propensity for recidivism, stating “penile erection is merely an epiphenomenon. We measure penile erection because we can, and because it is an approximation of what we are seeking. We are unable to measure mental events directly, although the fMRI procedure is bringing us closer to that.”

B. Issues with Standardization and the Potential for False Results

Not only is it a problem that different methods are used, but regardless of which actual test is being administered, there is a lack of standardization from state to state. In State v. Spencer, the North Carolina Court of Appeals highlighted a number of problems regarding the reliability of PPG testing, specifically the “lack of standards for training and interpretation of data, lack of norms and standardization and susceptibility of the data to false negatives and false positives.” The court in Spencer agreed that the validity and reliability of the testing should be determined without regard to the sophistication of the technology used in the testing. Still, there has been a move to standardize PPG testing. The Association for the Treatment of Sexual Abusers (ATSA) was responsible for creating a set of practical guidelines that were meant to assist administrators of the treatment in standardization. Still, there is a documented

42. Id.
43. Id. (quoting Dominique Bourget & John M. W. Bradford, Evidential Basis for the Assessment and Treatment of Sex Offenders, 8 BRIEF TREATMENT & CRISIS INTERVENTION 130, 132 (2008)).
44. United States v. Music, 49 F. App’x 393, 394–95 (4th Cir. 2002) (per curiam); see also United States v. Powers, 59 F.3d 1460, 1471 (4th Cir. 1995).
47. Id.
48. See id.
50. See id. at 70–73.
amount of inconsistency in what is being used.  As part of treatment, some offenders are shown mere depictions of child pornography. Others are shown real child pornography. Some offenders are shown naked children who were brought up in nudist colonies but with written consent from the children’s parents. These examples of differences in the images alone might go to show why courts are concerned with the reliability of the testing in light of the lack of standardization regarding methods.

Another concern about the reliability and validity of the penile plethysmograph comes from the potential for offenders to fake results. Some scientists have also suggested that results might differ depending on whether the individual is being tested for scientific purposes or whether they have been ordered to take the test as a court condition. One such study described the prospective discrepancy, stating:

The methodology and instructions used during PPG assessments differ by laboratory. . . . Depending on the instructions that are used, it may be that some sex offenders view the PPG assessment procedure as a test of sexual deviance (i.e., a test with potentially negative consequences . . .). This interpretation of the PPG procedure may lead some subjects who are involved with the judicial system to attempt to inhibit or distort their responses. . . .

In some studies, scientists attempt to minimize the ability of subjects to fake by monitoring for tension of the abdominal or perineal muscles as well as watching subjects “for signs of genital manipulation.” Still, this does not account for false results due to mental manipulation. In a study looking into stimulus control of sexual arousal, H.E. Barbaree found that “[s]ubjects attempting to suppress
arousal to deviant stimuli might use self-distraction, and, indeed, when subjects have been instructed to fake suppression of response to a preferred erotic stimulus, they reported using such a strategy to minimize arousal.” 60 Conversely though, scientists have argued that one of the benefits of the penile plethysmograph test is that those accused of pedophilia can use this test to squash false accusations. 61

The potential for false results is undoubtedly heightened due to the lack of standardization in administration. This is exemplified in the way that the test is given today. The test is not typically administered in government owned and operated treatment centers; rather, most often the test is given “in privately operated treatment centers under contract with government probation services.” 62 Further, while the administering clinician is usually in a separate room from the offender being tested, he or she may be separated by a window, a one-way mirror, or merely a curtain. 63 As previously mentioned, the stimuli can also differ, depending on who is giving the test and what is available. 64 Not only do the “images” themselves differ but there is even differentiation in whether subjects are shown audio or visual stimuli. 65

There has been a recent move towards standardization, but despite this attempt, there is still a lot of room for deviation. 66 ATSA has published special guidelines meant to “provide quality treatment services by recommending clinical practices that reflect the best available knowledge.” 67 ATSA has made these guidelines available for purchase by members of the Association but does not mandate the use of such material; the Association does not even specify on their website that these guidelines are meant to apply to penile plethysmograph testing. 68 That being said, the guidelines suggest that the following methods are appropriate:

1. Visual material: (a) Visual material will include nude or clothed poses. (b) Visual materials should represent all five

60. Barbaree, supra note 56, at 117.
61. See Tong, supra note 53, at 188. This follows the suggestion that “over the past 20-odd years, there has been an alarming increase in the number of unfounded and false child sexual abuse allegations made within contested divorces, visitation disputes, and custody battles . . . “ (internal citations omitted).
62. Bernstein, supra note 13, at 269; see also Odeshoo, supra note 14, at 8.
63. Odeshoo, supra note 14, at 8.
64. Supra notes 53–54 and accompanying text (describing how some offenders are shown mere images of children while others are shown fully nude child pornography).
65. Bernstein, supra note 13, at 269.
66. See id. at 269–70 (describing the ways the test can deviate).
68. See id.
Tanner’s stages of maturation. Categories should include both sexes and be devoid of extraneous stimulus. (d) The number of stimulus presentations must be based on client’s problem. Stimulus duration should be consistent with published papers that have demonstrated validity. Currently 2-minute presentations are common. (e) The examiner should be satisfied that detumescence has reached a sufficiently low level to proceed.

(2) Audio tapes: (a) Categories of audio material should be sufficient to adequately evaluate potential problems of your client and reflect currently accepted methods as outlined in published and validated studies. (b) Audio material must include a representative group of normal sexual activity, including both sexes. (c) Typical audio tapes include fondling, consenting intercourse, coercive sex, rape, and assault with both children and adults of both sexes.

While on its face this may seem to add some level of consistency to testing, the actual wording of these guidelines is extremely vague. For example, in section (1)(d), ATSA stresses that “[t]he number of stimulus presentations must be based on client’s problem.” Though the guidelines suggest that the number of stimuli shown should reflect the client’s “problem,” there is no indication of what number might be suggested for any given problem, and presumably, different administering clinicians have different ideas of what is appropriate. Further, in the same section, it states “[s]timulus duration should be consistent with published papers that have demonstrated validity,” but given the fact that courts have ruled on the validity of this testing and found it lacking, it seems to make little sense for

69. The Tanner stages for boys are:
   [(1) Prepubertal; (2) Enlargement of scrotum and testes, scrotum skin reddens and changes in texture; (3) Enlargement of penis, further growth of testes; (4) Increased size of penis with growth and breadth of development of glans; testes and scrotum larger, scrotum skin darker; (5) adult genitalia. And for girls: [] (1) Prepubertal; (2) Breast bud stage with elevation of breach (sic) and papilla; enlargement of areola; (3) Further enlargement of breast and areola; no separation of their contour; (4) Areola and papilla form a secondary mound above level of breast; (5) Mature stage: projection of papilla only, related to recession of areola.


70. Id. at 22–23 (quoting GUIDELINES FOR THE USE OF THE PENILE PLETHYSMOGRAPH, ASS‘N FOR THE TREATMENT OF SEXUAL ABUSERS (1992) [hereinafter GUIDELINES FOR THE USE OF THE PENILE PLETHYSMOGRAPH]).

71. Id. at 22 (quoting GUIDELINES FOR THE USE OF THE PENILE PLETHYSMOGRAPH, supra note 70).
that court-imposed treatment to rely on validity regarding specific stimulus duration.\textsuperscript{72}

V. DIFFERENT COURTS' TREATMENTS

While courts use different standards when determining what conditions of supervised release may be appropriate, there are limitations.\textsuperscript{73} A district court may only impose a condition of supervised release if (1) it finds the condition “is reasonably related to the factors set forth [under 18 U.S.C. § 3553(a)(1) and (a)(2)(B)–(D)],”\textsuperscript{74} and (2) it “involves no greater deprivation of liberty than is reasonably necessary for the purposes set forth in [18 U.S.C. § 3553(a)(2)(B)–(D)].”\textsuperscript{75} Further, a condition must be “consistent with any pertinent policy statements issued by the Sentencing Commission pursuant to 28 U.S.C. [§] 994(a). . . .”\textsuperscript{76}

Under § 3553(a)(2), a court is required to consider whether the sentence imposed (1) reflects the seriousness of the offense, promotes respect for the law, and provides a just punishment; (2) is sufficient to deter others; (3) protects society from other crimes the defendant might commit; and (4) is sufficient to give the defendant time to receive vocational training, medical care, or educational training.\textsuperscript{77}

While all courts must adhere to the general standard set forth in 18 U.S.C. § 3553(a) and 18 U.S.C. § 3583(d), the circuits that still impose penile plethysmograph testing have developed further analyses to determine when it might be used as an appropriate condition for supervised release.\textsuperscript{78}

The Fourth Circuit has little problem with penile plethysmograph testing. The court has really only analyzed this method of supervised release to the extent that they have found it not to be accurate enough to be included in court for evidence purposes but fine for treatment purposes.\textsuperscript{79} Many Fourth Circuit decisions on penile plethysmograph testing rely on cases like \textit{United States v. Music}, which found that penile plethysmograph testing was reasonably

\begin{itemize}
\item \textsuperscript{72} \textit{Id.} (quoting GUIDELINES FOR THE USE OF THE PENILE PLETHYSMOGRAPH, supra note 70); State v. Spencer, 459 S.E.2d 812, 815–16 (N.C. Ct. App. 1995).
\item \textsuperscript{74} 18 U.S.C.A. § 3583(d)(1) (West 2016).
\item \textsuperscript{75} \textit{Id.} § 3583(d)(2).
\item \textsuperscript{76} \textit{Id.} § 3583(d)(3).
\item \textsuperscript{77} 18 U.S.C.A. § 3553(a)(2)(A)–(D) (West 2010).
\item \textsuperscript{78} \textit{United States v. Medina}, 779 F.3d 55, 69–70 (1st Cir. 2015).
\item \textsuperscript{79} See \textit{United States v. Powers}, 59 F.3d 1460, 1471 (4th Cir. 1995).
\end{itemize}
related to § 3553 facts so as to be a valid "treatment" condition for supervised release. The Fourth Circuit has given a bit more consideration to the use of penile plethysmograph testing as evidence. In United States v. Powers, the Fourth Circuit held that a district court did not abuse its discretion by refusing to admit plethysmograph evidence offered by a criminal defendant. In Music, the court points out that the rule in Powers was not a general rule that plethysmograph evidence is inadmissible. Rather, the Fourth Circuit noted that there, "the government had provided unrebutted evidence that the test lacks 'accepted standards in the scientific community' and that the test is prone to producing false negatives. . . . We then concluded that the government had established that the test is insufficiently reliable to meet the 'scientific validity' prong of Daubert. . . ." The Fourth Circuit went on to point out that while it was not relevant to the general issue of admissibility, the plethysmograph test was "useful for treatment of sex offenders."

Other courts have deviated from the Fourth Circuit’s standard and rationale, criticizing the Fourth Circuit for its lack of review. The First Circuit discussed the Fourth Circuit’s analysis of penile plethysmograph testing as a condition of supervised release, pointing out that although the Fourth Circuit finds that "a district court 'clearly act[s] within its discretion in imposing' it as a condition . . . it seems [to impose the testing] without offering much of an explanation for doing so." The Second Circuit has addressed constitutional concerns with the testing and found that a district court must satisfy strict scrutiny before granting penile plethysmograph testing as a condition of supervised release. The Second Circuit found a "clear distinction between penis measurement and other conditions of supervised release." In United States v. McLaurin, the Second Circuit decided the testing was so invasive that "it could be justified only if it is narrowly tailored to serve a compelling government interest."

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80. United States v. Music, 99 F. App’x 393, 394–95 (4th Cir. 2002); see also Powers, 59 F.3d at 1471.
81. See Powers, 59 F.3d at 1471.
82. Id.
83. Music, 49 F. App’x at 394–95.
84. Id. at 395 (quoting Powers, 59 F.3d at 1471 and Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579 (1993)).
85. Id. (quoting Powers, 59 F.3d at 1471).
86. United States v. Medina, 779 F.3d 258, 261 (2d Cir. 2013).
87. Id. at 264.
88. Id. at 261.
Second Circuit went on to require that a district court must “at a minimum make findings, sufficiently informative and defendant-specific for appellate review, that the test is therapeutically beneficial, that its benefits substantially outweigh any costs to the subject’s dignity, and that no less intrusive alternative exists.”

The Ninth Circuit has also given the testing a more in-depth analysis. That court has looked into not only the physical effects of the testing but also the potential medical and emotional effects, finding that “[p]lethysmograph testing not only encompasses a physical intrusion but a mental one, involving not only a measure of the subject’s genitalia but a probing of his innermost thoughts as well.” The Ninth Circuit held in United States v. Weber that the procedure “implicates a particularly significant liberty interest.” Further, it is one of the few circuits that has displayed concerns about the testing’s reliability and efficiency and taken those into account in its decisions. Specifically, the Ninth Circuit found that penile plethysmography had a “susceptibility to manipulation via faking.” The Circuit ultimately required “heightened procedural protections” such as “consideration of evidence that plethysmograph testing is reasonably necessary for the particular defendant based upon his specific psychological profile” before a district court may require the testing as a condition of supervised release.

The First Circuit said that, like the Ninth Circuit, it was not prepared to “say categorically that, despite the questions of reliability, [PPG] testing can never reasonably’ be imposed.” The First Circuit went on to find that for the condition to be facially reasonable, district courts “must provide a more substantial justification, at least once a defendant objects.” Further, the First Circuit required its courts to balance sentencing goals against the defendant’s liberty.

Not only do courts have different standards for determining whether penile plethysmograph testing is an appropriate condition of supervised release, they also struggle at a base level to determine what is being measured by the instrument as a whole. In State v.

90. Id. at 263.
92. Id. at 563.
93. See id.; Bernstein, supra note 13, at 288.
94. Weber, 451 F.3d at 564.
95. Id. at 569–70.
97. Id. at 72.
98. Id. at 71–72.
Spencer, expert witnesses disputed what the test itself was measuring.100 One expert witness described how she used the test regularly in her assessment of how stimuli arouses patients.101 She described her knowledge of the technology stating:

The plethysmograph . . . directly measures the outside evidence of sexual arousal. We know, it’s established throughout the literature that when a man becomes sexually aroused, there is engorgement of the penis. It’s a one-to-one relationship. In a polygraph, galvanic skin responses are measured, and we have to make a leap of logic to think that galvanic skin response is related to anxiety, and therefore truthfulness. And it is that jump in logic that leads to a lack of reliability at times with that instrument. . . . We know when the penis becomes engorged, we are measuring sexual arousal. So it’s much more akin to say blood pressure measurement.102

Yet another expert witness, a clinical and forensic psychologist with a specialty in sexual criminal behavior, testified that in his research on the penile plethysmograph he found “that the plethysmograph data does not give any evidence that is useful in determining whether an individual did or did not commit a specific act.”103 He agreed that the plethysmograph “measures the engorgement of blood to the penis” but qualified that:

[T]here is substantial disagreement as to the extent to which the penile response is subject to voluntary control and as to whether the penile response as measured by the plethysmograph can then be generalized to anything else pertaining to sexual behavior. . . . [The expert] testified that the fact that the plethysmograph does not show evidence of sexual arousal when a subject is shown stimulus materials involving children does not lead to a valid conclusion that the person will not engage in sexual activities with children.104

The expert also testified that:

[T]he vast majority of individuals who commit sexual offenses against children are not sexually aroused by stimulus material involving children; “their primary sexual orientation is to adults and they molest children by fantasizing that they are engaging
in relationships with appropriate sex partners.” In [the expert’s] opinion, the plethysmograph has “very limited forensic utility”, “the forensic validity of the instrument is highly suspect”, and “the utility of what it [the plethysmograph] shows is highly questionable and the possibility of misleading the trier of fact or the jury is very high, dangerously high.”

Indeed, courts have found that although the plethysmograph may be used as a condition of supervised release, its value as evidence is much more limited. In *United States v. Powers*, the Fourth Circuit found that a district court did not abuse its discretion in refusing to admit plethysmograph results as evidence. Courts have since said that although there is no blanket rule that plethysmograph evidence is inadmissible, the test “lacks ‘accepted standards in the scientific community’ and that the test is prone to producing false negatives.” Further, courts have found that the test is “insufficiently reliable to meet the ‘scientific validity’ prong of *Daubert v. Merrell Dow Pharm., Inc.*.” The fact that courts have found the test to lack the validity to be used as evidence truly goes to show the questionability of its true value as a condition of supervised release.

VI. GENDER DISPARITY

One of the most troubling concerns with plethysmograph testing is the gender disparity in its application as a condition of supervised release. There is, in fact, a female equivalent of the penile plethysmograph, known as the vaginal photoplethysmograph.

A. The Vaginal Photoplethysmograph

The vaginal photoplethysmograph was first developed in 1967 and used a light source in conjunction with a photosensitive cell on a gynecologic speculum to measure the pulse waves emitted from the vagina. The more modern version “consists of a tampon-sized...”

107. *Id.*
109. *Id.*
111. A search of the term “penile plethysmograph” in Westlaw came up with 340 cases as compared to the zero case results when searching “vaginal photoplethysmograph.”
113. Terri L. Woodard & Michael P. Diamond, *Physiological Measures of Sexual...*
acrylic device that contains a light emitting diode and a phototransistor to detect light.”\textsuperscript{114} A vaginal photoplethysmograph “measures the amount of blood in the genitalia by monitoring minor changes in skin color inside the vagina. It is essentially similar to a lie detector that measures blush response.”\textsuperscript{115} While there have been many versions and updates of the vaginal photoplethysmograph test, the general mechanism is the most commonly used and scientifically sound method of studying arousal in women.\textsuperscript{116}

\textbf{B. Disparity in Court}

Despite the fact that this technology exists, a woman has yet to be sentenced to mandated vaginal photoplethysmograph testing by courts.\textsuperscript{117} Given the lack of empirical studies on the subject, it is difficult to determine whether or not this is due to a lack of familiarity or reliability in the testing, or the fact that most offenders charged with child pornography (and other sex crimes) are men,\textsuperscript{118} and thus there is just not a “need” for court mandated vaginal photoplethysmograph testing. It is also unclear if courts have yet to deal with the question given the lack of women convicted of child pornography.\textsuperscript{119} In fact, according to the U.S. Department of Justice, in 2006, ninety-nine percent of arrestees charged with child pornography were male.\textsuperscript{120} Even when females are charged, judges often find women to

\textsuperscript{114} Id. at 19.
\textsuperscript{115} Carroll, supra note 112 (internal quotations omitted).
\textsuperscript{116} Woodard & Diamond, supra note 113, at 20.
\textsuperscript{117} See supra note 111 (referencing Westlaw search results).
\textsuperscript{119} Paula Dobbyn, First Alaska woman charged with possessing child pornography gets no jail time, KTUU (Oct. 21, 2016, 4:01 PM), http://www.ktuu.com/content/news/First-Alaska-woman-charged-with possessing-child-pornography-gets-no-jail-time-397985081.html [https://perma.cc/CS9V-EQ2F] (demonstrating that many courts rarely deal with female offenders in child pornography cases given that the first woman in Alaska to be charged with possession of child pornography was in 2016).
be more sympathetic and remorseful.121 In late 2016, one judge imposed no actual jail time for the first woman in Alaska to be charged with possession of child pornography.122 Instead, she had three years of suspended time with a mere five years of probation imposed.123

C. Legal Implications of Gender Disparity

There may in fact be a constitutional argument for requiring that courts use more stringent standards when imposing penile plethysmograph testing simply due to the fact that such conditions are not equally imposed on women. Under the Fourteenth Amendment’s Equal Protection Clause, no state may “deny to any person within its jurisdiction the equal protection of the laws.”124 Jurisprudence on gender discrimination dictates that legal disparities involving gender-specific classifications shall receive intermediate scrutiny.125 Specifically, under United States v. Virginia, the Supreme Court held that “exceedingly persuasive” justification was required for a sex-based policy.126 It is imperative to recognize that this heightened level of scrutiny can lead to completely different policies and case law compared to that of rational basis on one side and strict scrutiny on the other.127

[https://perma.cc/N7PK-JE5B](https://perma.cc/N7PK-JE5B) (stating that statistics in 2014 also reflected that 99% of consumers of child pornography were men).

121. Dobbyn, supra note 119 (exhibiting the Judge’s opinion of the female defendant, which read, “I do find good prospects for rehabilitation here based on the evaluation that was provided to me and the testimony I have heard, including Ms. Robinson’s short, but I’m convinced, heartfelt, expression of remorse.”).

122. Id.

123. Id.

124. U.S. CONST. amend. XIV.


126. Virginia, 518 U. S. at 533.

127. Rational basis is the lowest level of scrutiny when determining a law’s constitutionality. It requires that a law merely be rationally related to a legitimate government interests which has, historically, not been a terribly high hurdle. See, e.g., United States v. Carolene Products Co., 304 U.S. 144, 152 (1938) (discussing how the court will not question the judgment of Congress as long as it believes there is a legitimate government interest). Intermediate scrutiny is a significantly more rigorous test than rational basis, whereby if the challenged law is on its face one that discriminates based on gender, the means must be substantially related to an important government objective to justify the ends. See, e.g., United States v. Virginia, 518 U.S. 515, 532–33 (1996); Miss. Univ. for Women v. Hogan, 458 U.S. 718, 723 (1982); Craig v. Boren, 429 U.S. 190, 198 (1976). Finally, strict scrutiny is the highest level of scrutiny and is used primarily to protect fundamental rights and for race-based discrimination, requiring that the law in question be narrowly tailored to serve a compelling government interest. See, e.g., Loving v. Virginia, 388 U.S. 1, 12 (1967); Korematsu v. United States, 323 U.S. 214, 216 (1944).
Applying this standard to various courts’ treatments of penile plethysmograph testing would require a judge or jury to determine what actually constitutes an “exceedingly persuasive justification” for this treatment. However, assuming it was found to be justified at all, ostensibly, the lack of a standard in the Fourth Circuit would not be acceptable. Other circuits have at least addressed constitutional concerns. The Second Circuit found that a court must satisfy strict scrutiny, the Court’s highest standard of review, before requiring penile plethysmograph testing as a condition of supervised release. The Court stated that there is a “clear distinction between penis measurement and other conditions of supervised release.” The Ninth Circuit, in United States v. Weber, found that the testing “implicate[d] a particularly significant liberty interest” and also required that a heightened scrutiny analysis be performed when penile plethysmograph testing was a potential requirement of supervised release. Finally, as previously mentioned, the First Circuit also required a heightened scrutiny analysis in order to balance the defendant’s individual liberties with sentencing goals.

The obvious gender disparity, in tandem with other courts’ constitutional considerations, suggests that even if penile plethysmograph testing was found to be definitively effective and legal, the Fourth Circuit would need to adopt a more stringent standard of review when deciding cases on the topic.

VII. A PRACTICAL ALTERNATIVE

More than any other concern is that courts are applying this treatment as a condition of supervised release when there is not even a general acceptance of penile plethysmography testing in the scientific community. Luckily, scientists have looked into “other, less intrusive tests including direct observation measures of sexual fantasy behavior, and the three other tests under investigation . . . the Abel Screen (VRT) and Abel Questionnaire for Men, collectively known as the Abel Assessment for Sexual Interest (AASI), and MSI-II or Multiphasic Sex Inventory-II, also known as the Molinder.”

128. See Virginia, 518 U.S. at 533.
129. See United States v. McLaurin, 731 F.3d 258, 261 (2d Cir. 2013).
130. Id.
131. Id. at 264.
133. United States v. Medina, 779 F.3d 55, 72 (1st Cir. 2015).
134. United States v. Music, 49 F. App’x 393, 394–95 (4th Cir. 2002) (finding that the test is not accepted by the scientific community and that it is prone to false results).
A. The Abel Assessment for Sexual Interest

The Abel Assessment for Sexual Interest is made up of the Abel Screen VRT (Visual Reaction Time) and the Abel Questionnaire for Men. The Abel Screen VRT is not only less invasive than the penile plethysmograph test, but it is also cheaper and requires less time. This test involves showing the participants images and measuring the visual reaction time. The idea behind this is that the longer a person views a given stimulus, the greater that individual’s interest in the stimulus is and vice versa. So, put differently, the length of time an offender chooses to look at a specific image of child pornography before moving to the next image, theoretically, the greater that individual’s interest in the contents of said image. This “Abel Screen VRT [testing] is less controversial than PPG [penile plethysmograph]” testing and has passed the Daubert test in many court cases. Dean Tong, an expert in the field of child pornography and sex abuse cases, wrote of the Abel Screen VRT: “[a]s well as taking less time to complete than the approximate 90 minute PPG assessment, which also requires the test-taker to watch and listen to nude child scenes, the Abel VRT does not appear to have a problem with non-responders, or flatliners, as seen sometimes with the PPG.” Tong went on to say that “[s]tandardization is not problematic with VRT as Abel Screen, Inc. disseminates to all users of the test the same digital images. Further, potential feigning of mental images creating possible false results has not been reported to be a problem with the Abel VRT.”

The second part of the Abel Assessment for Sexual Interest is the Abel Questionnaire for Men. This questionnaire assesses twenty-one different “problematic sexual behaviors,” which include interests in pedophilia. One of the greatest advantages that the Abel Assessment has over the penile plethysmograph is that it includes something called a Denier-Dissimulator Scale, which is used to weed
out those who attempt to conceal behaviors of child sexual abuse.\footnote{146}
With this tool, eighty-eight percent of child sexual abusers who make an attempt to hide their behaviors are detected.\footnote{147} The benefit of this in particular was pointed out by one scientist who wrote that “[a]n instrument’s ability to correctly identify child molesters who deny having sexually abused children (denier-dissimulator child molesters) has the greatest clinical utility.”\footnote{148}

\textbf{B. The MSI-II}

The MSI-II, also known as the Multiphasic Sex Inventory or Molinder, is used to measure sexual characteristics of an offender or of an accused individual.\footnote{149} One advantage it has over the penile plethysmograph is that it has been around since 1984 and has been researched extensively since 1986, so it is well tested.\footnote{150} It works by comparing twelve different measures with those of a sample size of 1,200 (currently) known child molesters.\footnote{151}

While none of the current tests are perfect markers for determining whether one is likely to recidivate and commit another deviant sex crime, the results of a 2007 study that tried all three methods found that in terms of validity and reliability, the Abel Assessment for Sexual Interest and the MSI-II were both equally viable replacements for the “more intrusive” penile plethysmograph test.\footnote{152} Still, there is little to no research involving individuals without any history of sexual offenses.\footnote{153} This research would be important in identifying what might lead one to reoffend or even offend in the first place.\footnote{154} For example, as one study on the assessment of deviant arousal in adult male sex offenders points out:

\begin{quote}
[I]t may be the case that typical men show at least some arousal to some . . . inappropriate stimuli, but they have no previous history of committing a sexual offense. They may be aroused by a child in the community and have an opportunity to get the child alone, but do not act on it.\footnote{155}
\end{quote}

\begin{footnotes}
\item[146] \textit{Id.}
\item[147] \textit{Id.}
\item[148] Tong, \textit{supra} note 53, at 192.
\item[149] \textit{Id.}
\item[150] \textit{Id.}
\item[151] \textit{Id.} at 192–93.
\item[152] \textit{Id.} at 200.
\item[154] \textit{Id.}
\item[155] \textit{Id.}
\end{footnotes}
Such information could be critical in court proceedings where what might have otherwise been thought of as deviant behavior could turn out to be ordinary for non-offenders and would therefore result in such treatment being terminated as a condition of supervised release.

It should also be noted that courts have actually weighed in on Abel testing, finding that Abel testing is “much less intrusive into the body and somewhat less intrusive into the mind of a defendant than plethysmograph testing.” In United States v. Cope, the court described the Abel test as being a “far less intrusive procedure” than that of the penile plethysmograph test. In United States v. Stoterau, the court gave a more in-depth comparison of the Abel test and the plethysmograph, stating:

Abel testing does not involve any manipulations or intrusions akin to those involved in penile plethysmography, antipsychotic medication, or chemical castration. . . . Abel testing involves showing subjects a series of slides and monitoring the amount of time they attend to each slide. . . . Unlike antipsychotics or chemical castration, Abel testing does not “interfere[] with mental processes [or] alter[] behavior.” . . . Unlike penile plethysmography, Abel testing does not require the test subject to disrobe and does not “involve the minute monitoring of changes in the size and shape of a person’s genitalia.”

The fact that courts have made such comparisons, yet still impose penile plethysmograph testing as a condition of supervised release, is confusing and leads to questions of how the test might be reviewed by courts.

VIII. THE ISSUE OF REVIEW

There is an additional hurdle that must be faced when dealing with the “penile plethysmograph problem”—that of judicial review. Though the testing is often imposed by lower courts, higher courts have a difficult time actually addressing the issue because many courts find that, due to its imposition as a condition of supervised release, it is not ripe for review. “[R]ipeness . . . has both constitutional and prudential” aspects. In order for one to have a “ripe”

156. United States v. Weber, 459 F.3d 552, 567 (9th Cir. 2006).
157. United States v. Cope, 506 F.3d 908, 913 (9th Cir. 2007).
158. United States v. Stoterau, 524 F.3d 988, 1005–06 (9th Cir. 2008) (internal citations omitted).
159. See United States v. Ortega, 485 F. App’x 656, 660 (5th Cir. 2012); United States v. Rhodes, 552 F.3d 624, 628 (7th Cir. 2009); United States v. Lee, 502 F.3d 447, 450 (6th Cir. 2007).
160. United States v. Bennett, 823 F.3d 1316, 1325 (10th Cir. 2016).
case or “standing to litigate” in high courts, there must be injury in fact, causation, and redressability.\textsuperscript{161} Injury in fact is “an invasion of a legally protected interest,” which here would be the right to privacy of one’s own body.\textsuperscript{162} Admittedly, the Court has found that one gives up some amount of personal rights while in prison,\textsuperscript{163} but penile plethysmograph testing would presumably fall outside of that scope given its imposition after one completes his time in prison. The Supreme Court has said that to hear a case, the injury in fact must not only be “concrete and particularized” but also “actual or imminent.”\textsuperscript{164} This is where courts have difficulty ascertaining whether or not they may consider the issue of penile plethysmograph testing imposed as a condition of supervised release—many courts find that since the testing happens so far after the imposition, that it is not ripe for appeal until after the man has completed his prison term.\textsuperscript{165} Indeed, the Tenth Circuit tackled this issue in \textit{United States v. Bennett} where they discussed how the Supreme Court determined that “[a] claim is not ripe for adjudication if it rests upon ‘contingent future events that may not occur as anticipated or indeed may not occur at all.’”\textsuperscript{166} In fact the Fifth, Sixth, and Seventh Circuits have all dismissed immediate challenges to penile plethysmograph testing as being unripe.\textsuperscript{167} The Sixth Circuit in \textit{United States v. Lee} found that though “conditions of supervised release may be ripe for appellate review immediately following their imposition at sentence,” the issue was not ripe because: “(1) the defendant would not be released for fourteen years, (2) his treatment plan was indefinite, and (3) the court was unsure whether plethysmograph testing would even be considered medically useful in 2021.”\textsuperscript{168}

As recently as May 2016, a court once again looked into whether the issue was ripe for judicial review in \textit{United States v. Bennett}.\textsuperscript{169} The court stated, “[e]ven if we remanded, the district court would be faced with the nearly impossible task of determining how effective plethysmograph testing might be for Bennett after completing his ten-year sentence.”\textsuperscript{170} The court went on to say that since there was no way of knowing whether testing would even be available as a

\begin{itemize}
\item \textsuperscript{162} Id. at 560.
\item \textsuperscript{163} See Turner v. Safley, 482 U.S. 78, 88–89 (1987).
\item \textsuperscript{164} Lujan, 504 U.S. at 560.
\item \textsuperscript{165} Bennett, 823 F.3d at 1326.
\item \textsuperscript{166} Id. (quoting Texas v. United States, 523 U.S. 296, 300 (1998)).
\item \textsuperscript{167} See United States v. Ortega, 485 F. App’x 656, 660 (5th Cir. 2012); United States v. Rhodes, 552 F.3d 624, 628 (7th Cir. 2009); United States v. Lee, 502 F.3d 447, 450 (6th Cir. 2007).
\item \textsuperscript{168} Bennett, 823 F.3d at 1326 (quoting Lee, 502 F.3d at 450).
\item \textsuperscript{169} Id. at 1318.
\item \textsuperscript{170} Id. at 1326–27.
\end{itemize}
treatment option upon the defendant’s release from prison, they could not take up the issue at this time.171

CONCLUSION

While penile plethysmograph testing might have some putative value due to its humiliating and degrading nature, the results of such testing mean very little in a courtroom setting as they cannot be admitted into evidence and are merely used for probative value.172 Moreover, the blatant gender disparity in courts only mandating plethysmograph testing on men demands that a heightened scrutiny analysis be applied under the Equal Protection Clause.173 Currently, the few jurisdictions aside from the Fourth Circuit that still impose penile plethysmograph testing use some form of heightened scrutiny.174 Though no case has come before the Supreme Court to decide this issue, given the strong weight of evidence against penile plethysmograph testing, the Fourth Circuit’s deference to judicial discretion without some sort of heightened review is not a strict enough standard to reasonably impose testing as a condition of supervised release.

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171. Id. at 1327.
173. See discussion supra Section VI.C.
174. See United States v. Medina, 779 F.3d 55, 69 (1st Cir. 2015); United States v. McLaurin, 731 F.3d 258, 261 (2d Cir. 2013); United States v. Weber, 451 F.3d 552, 562–63 (9th Cir. 2006).
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