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**Ethics in Administration of PDD Tests**



***Standard Guide for***

**Requirements for Psychophysiological Detection of Deception (PDD) Examiners[[1]](#footnote-1)**

This standard is issued under the fixed designation E2065; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (s) indicates an editorial change since the last revision or reapproval.

**1. Scope**

1.1 The purpose of this guide is to establish requirements for all individuals engaged in forensic psychophysiological detection of deception (PDD).

1.2 All individuals engaged in the practice of conducting PDD examinations shall adhere to this guide.

**2. Referenced Documents**

2.1 *ASTM Standards:[[2]](#footnote-2)*

E2035 Terminology Relating to Forensic Psychophysiology

**3. Terminology**

3.1 For definitions of terms, see Terminology E2G35.

**4. Summary of Practice**

4.1 A PDD examiner shall not circumvent or attempt to circumvent, violate, or attempt to violate any of the following:

4.1.1 Any legislative act which regulates or governs the use of PDD.

4.1.2 PDD examiners shall avoid conducting an examination in a situation in which there is a real or apparent conflict of interest.

4.1.3 A PDD examiner shall not release any confidential information except when legally required to do so.

4.1.4 A PDD examiner or his or her employee or associate, with the PDD examiner's knowledge, shall not engage in any type of advertising which would be considered false, deceptive, or misleading.

4.1.5 A PDD examiner shall not provide any false or misrepresented information in any of his or her written report(s) or record(s)

4.1.5.1 A PDD examiner shall not omit any pertinent detail(s) from any written report or record.

4.1.6 A PDD examiner shall not alter or cause to be altered any tracing(s) during a PDD examination in order to improperly influence the outcome of that examination.

4.1.7 A PDD examiner shall not administer a PDD examination if he or she reasonably believes the examinee is not physically or mentally suitable for the examination.

4.1.8 A PDD examiner shall not solicit or accept fees, gratuities, or gifts which are intended or could reasonably be perceived to be intended to influence the examiner's opinion.

4.1.8.1 Fees shall not be contingent on the results of the examination.

4.1.9 A PDD examiner shall not form an opinion that is influenced by anything other than the PDD examination.

4.1.9.1 No other credibility assessment method shall be included in the PDD report.

4.1.10 A PDD examiner shall not include (in any examination) questions that are intended to inquire into or develop information on activities, affiliations, or beliefs in religion, politics, or race, except when relevant.

4.1.11 A PDD examiner, who is also a mental health counselor, marriage counselor, sex offender treatment provider, and any similarly recognized professional, or any combination thereof, shall not conduct a PDD examination on any person whom he or she is also actively counseling or treating.

4.1.12 A PDD examiner who is also employed in a court supervision capacity, such as that of a probation or parole officer, shall not conduct a PDD examination on any person who is under his or her direct supervision. Because the role of the PDD examiner is that of an independent arbiter in search of the truth, the integrity of that role is compromised when an examiner has had contemporaneous supervision responsibilities of an examinee.

4.1.13 A polygraph examiner shall not represent that he or she has a particular academic degree unless one of the two following criteria was met: (1) The degree was awarded from an institution that is accredited to grant that degree by a national, regional or professional accrediting agency recognized by the United States Department of Education or the Council for Higher Education Accreditation (CHEA). (2) The degree was awarded from a school, institute, college, or university chartered outside the United States that is approved by the Ministry of Education or similar government agency (of that country) to grant the degree.

4.1.14 If such an academic degree (that is, earned outside the United States) or title is to be used in the United StatesTiV must be validated recognized by a credential evaluation service that is a member of the National Association of Credential Evaluation Services to be the equivalent of a baccalaureate or post baccalaureate degree conferred by a regionally, accredited college or university in the United States.

**5. Significance and Use**

5.1 The development of a canon of consensus-based standards signifies the maturity in a specialized field of endeavor that its practitioners recognize as their collective responsibility to individual and public welfare. The consensus-based standards set forth in this guide hold all PDD examiners to a code of practice that elevates the profession above personal interests for the benefits of justice and the society it serves. Because licensing requirements of PDD examiners vary from state to state, the establishment of consensus-based standards and practices is imperative.

**6. Keywords**

6.1 academic degree; counseling; ethics; fees; forensic psy-chophysiology; governmental approving entity; licensing; marriage counselor; mental health counselor; PDD examiners; quantitative analysis; regional accrediting entity; sex offender treatment provider

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**Examiner Education and Training**

 стр. 700

***Standard Guide for***

**Minimum Basic Education and Training of Individuals Involved in the Detection of Deception (PDD)[[3]](#footnote-3)**

This standard is issued under the fixed designation E2000; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (e) indicates an editorial change since the last revision or reapproval.

**1. Scope**

1.1 This guide covers the minimum basic education and training required for an individual involved in the psychological detection of deception in using instruments which measure physiological responses in the areas of breathing or respiration, changes in electrodermal activity, and changes in pulse rate and relative blood pressure.

**2. Significance and Use**

2.1 This practice is intended for use by any individual when reasonably expected to be the subject of litigation. The intent of this guide is to set forth the minimum requirements for education and training of an individual who administers psychophysiological examinations, and who renders an opinion as to attempted deception or truthfulness of a subject who has been tested.

2.2 Polygraph standards have changed the standards herein represent the current industry standards, individuals who can document that they were trained at a polygraph school which was fully accredited by the American Polygraph Association prior to January 1998, shall be deemed to have met the minimum professional standards for polygraph examiner training at the time they received their initial basic polygraph training.

2.3 Individuals who received basic polygraph training prior to January 1998 at a polygraph training school which was not fully accredited by the American Polygraph Association standards may be qualified, providing they can document that their basic polygraph training was substantially equivalent in length and curriculum as required for American Polygraph Association polygraph school accreditation.

**3. Minimum Requirements for Basic Polygraph Education and Training**

3.1 *Facility:*

3.1.1 The training facility must be licensed or recognized, or both, and approved by the appropriate state, county, or municipal licensing authority, or both, wherein such authority exists. In addition, the facility must be approved by local agencies such as zoning, fire department inspection, health department, and have the local licenses or certification, or both, to operate such a school wherein such authority exists.

3.1.2 The facility housing the polygraph school must reflect an operation which provides a proper educational environment which should include, as a minimum, the following:

3.1.2.1 Controlled access to and from the classroom instruction and supervision areas.

3.1.2.2 Adequate and regulated heating, cooling, and lighting of all classroom/instructional student work areas.

3.1.2.3 Isolated and controlled facilities for student testing.

3.1.2.4 A classroom setting sufficient in size with available space for lectures/demonstrations for all enrolled students.

3.2 *Instructional Aids, Supplies and Equipment*

3.2.1 The polygraph school shall maintain a library with reference sources available to students that includes as a minimum:

3.2.1.1 The journal Polygraph published by the American Polygraph Association for at least the last 3 years.

3.2.1.2 Professional practitioner journals which relate to the application of polygraph sciences for at least the last 3 years.

3.2.1.3 Research articles or journals, or both, containing published research that document validity, reliability, and procedural data pertinent to the polygraph profession.

3.2.1.4 Reference and resource materials pertaining to psychology, physiology, psychophysiology, interviewing, interrogation, and the law as it relates to polygraph.

3.2.1.5 Polygraph texts and publications recognized within the polygraph profession for historical or contemporary contributions.

3.2.1.6 A school may satisfy the requirements above by providing students with official access to technical libraries that maintain said publications.

3.2.2 The school should have sufficient teaching aids and supplies available on site to effectively present the instructional materials to all students enrolled.

3.3 The polygraph course of instruction must meet one of the following:

3.3.1 The course must be no less than a minimum of 320 continuous classroom contact hours, conducted over a period of not less than 10 consecutive weeks.

3.3.2 The course must be no less than a minimum of 320 continuous classroom contact hours, conducted over a period of not less than 8 consecutive weeks in residence and followed by 2 additional weeks of credit earned by non-residence independent study. The independent study credit must be completed within 6 consecutive calendar months from the initial course starting date.

3.4 The student must be physically present at the school facility for not less than 90 % of the actual instruction time, with remedial studies required for any missed time.

3.4.1 The student may not be credited with completing more than 8 hours of instruction within any consecutive 24-h period. The student may not be *required* to attend more than 8 h of instruction during a 24-h period.

3.4.2 The student may not be credited with completing more than 6 instruction days within any given instruction week consisting of 7 consecutive 24-h days. The student may not be *required* to attend more than 6 instruction days within any 7-day instruction week.

3.5 *Polygraph Instrumentation Requirements:*

3.5.1 The polygraph school shall be required to have available for all students sufficient polygraphs, fully operational and properly calibrated to reasonably allow all students sufficient instrument time to complete a minimum of 90 min of total chart time during the course. As a minimum, one instrument, either analog or computer, shall be available for each 3 students enrolled.

3.5.1.1 If the school advertises they teach polygraph exclusively using the computer, the school shall be required to have available for all students sufficient computer polygraphs to allow a minimum of 90 min of total chart time. As a minimum, one complete computer polygraph system shall be available for each 3 students enrolled.

3.5.1.2 All polygraphs assigned by any school for student use shall record visually, permanently, and simultaneously on continuously moving charts at least 3 physiological tracings: (1) pneumographic, (2) cardiosphygmographic, and (3) electrodermal activity. This shall not be interpreted to preclude the recording of additional physiological phenomena on the same chart. Computers displaying these three physiological tracings on a computer screen which may be printed, will meet this instructional requirement.

3.6 *School Record Requirements:*

3.6.1 Each polygraph school shall maintain the following student records permanently:

3.6.1.1 Date the course/instruction started.

3.6.1.2 Date classroom instruction completed or date the student withdraws and reason thereof.

3.6.1.3 Date of final certification or graduation from the complete polygraph training program.

3.6.1.4 Method used and amount of Independent Credit awarded if any.

3.6.1.5 A written transcript reflecting performance of the student on all written examinations, internship, and practical skills.

3.6.1.6 The school shall require that each student conducts a minimum of one complete polygraph test which is video or audio recorded.

3.6.2 All other student records including charts conducted, one complete recorded polygraph test, student complaints, testing materials, documentation as to credit earned by a non-residence method, and any other documents required for professional inspection, shall be maintained for a period of not less than 3 years.

3.6.3 All records related to any student candidate who was not accepted for training shall be maintained for a period of not less than 3 years.

3.6.4 All records related to any student who withdraws, takes leave of absence or is suspended or expelled from the school for any reason shall be maintained for a period of not less than 3 years.

3.7 *Instructor Requirements:*

3.7.1 The selection, development, and retention of competent faculty at all levels are of major importance to the quality of a polygraph school.

3.7.1.1 A resume or curriculum vitae of each faculty member must be kept on file.

3.7.1.2 The school must demonstrate that the size of the faculty is sufficient to achieve the school's stated mission.

3.7.1.3 The school must present designated criteria for periodic evaluation of faculty members along with evaluation reports.

3.7.2 Instructor requirements in primary course materials, to include polygraph instruction in methodology, techniques for detection of deception, and instrumentation must meet or exceed the following requirements.

3.7.2.1 Must possess, as a minimum, a degree at the Baccalaureate level from a college or university accredited by the appropriate regional accreditation board(s). Individuals who are a Full Member, in good standing, of the American Polygraph Association who have been approved as a primary polygraph instructor at an American Polygraph Association accredited polygraph school for a period of 5 consecutive years prior to adoption of this guide and do not possess the required degree, shall be deemed qualified so long as they continue as a primary instructor with no breaks in service.

3.7.2.2 Must have administered a minimum of 200 polygraph examinations of the type in which they will be presenting instruction.

3.7.2.3 Must have completed a basic polygraph school course at a school which meets or exceeds the requirements set forth within ASTM standards. Exceptions are made for instructors who received their basic polygraph training prior to the acceptance of the above ASTM standards, providing the training was equivalent to the prevailing American Polygraph Association school standards at the time training was received.

3.7.2.4 Must have at least 3 years experience as a practicing polygraph examiner.

3.7.2.5 Exceptions to 3.7.2.1 which have been granted to persons on a case by case basis by the American Polygraph Association prior to January 1998, will be deemed to satisfy these requirements for instructors' in primary polygraph areas.

3.7.2.6 An individual expelled for cause from the American Polygraph Association (APA) or any other professionally recognized National or State Polygraph Association, or anyone convicted of a felony or discharged from related employment for cause, may not qualify as a primary instructor. Similarly, individuals in a polygraph licensing state or who were licensed in any state, who have had their polygraph license revoked for cause may not qualify as a primary instructor.

3.7.3 An individual not meeting all of the criteria described in section 3.7.2 as necessary for primary instruction, may provide instruction in primary course work; however, they will not be considered as primary instructors and they may not substitute where the physical presence of the primary instructor is required under 3.7.4.5.

3.7.4 Individuals qualifying as primary instructors must be physically present with the. students and must provide the instruction to the student no less than 75 % of the minimum hours of primary course material instructor required. This shall be interpreted as follows:

3.7.4.1 Minimum total required hours = no less than 320 continuous classroom hours in residence.

3.7.4.2 Required hours of supplemental instruction is = 64 h.

3.7.4.3 Required hours of primary instruction is = 256 h.

3.7.4.4 75 % of 256 = 191 h instruction requiring the physical presence of a primary instructor.

3.7.4.5 Therefore, it will be required that regardless of the course length, a primary instructor must be physically present with the students and provide student instruction during no less than 191 h of scheduled primary course material instruction.

3.7.4.6 At least 50 h of the total time of scheduled instruction in primary course materials must be taught by an additional primary instructor or instructors. Thus, any basic polygraph course will require at least two qualified primary instructors provide the primary instruction to the students.

3.7.4.7 Where a primary instructor is not required to be physically present, additional methods of presenting course material to students may be utilized, that is, guest instructors, and so forth.

3.7.5 Instructors for supplemental disciplines must meet the following requirements.

3.7.5.1 *Legal Issues* – Instructors teaching legal issues or legal aspects related to polygraph sciences must possess a law degree which is recognized by the appropriate national or regional bar association, or be, currently licensed to practice law by an appropriate governmental or regulatory licensing authority; and, be a member in good standing with the bar association in their state or residence where applicable. They need not be practicing polygraph examiners.

3.7.5.2 *Physiology Issues –* Instructors teaching physiological issues related to polygraph sciences must possess, as a minimum, a degree at the Masters level from a regionally accredited college or university, in physiology or in a discipline defined as closely related or aligned with physiology, that is psychophysiology, physiological psychology, and so forth. They need not be practicing polygraph examiners.

3.7.5.3 *Psychology Issues* – Instructors teaching psychological issues or aspects related to polygraph must possess, as a minimum, a degree at the Masters level from a regionally accredited college or university in psychology. They need not be practicing polygraph examiners.

3.7.5.4 *Research Methods* – Instructors teaching research methods or aspects related to polygraph must posses, as a minimum, a degree at the Baccalaureate level from a regionally accredited college or university, in the area of behavioral science or research. They need not be practicing polygraph examiners.

3.7.6 Documentation of instruction in all primary and supplemental course materials must be documented for each class presentation and must include, as a minimum, the following.

3.7.6.1 Name of instructor, date, and time of the instruction.

3.7.6.2 Method of instruction, that is, by primary instructor, by guest instructor, by videotape presentation, demonstration, practical exercises, and so forth.

3.7.6.3 Record of student attendance and testing of materials, if appropriate.

**4. Polygraph Course Curriculum**

4.1 Basic polygraph course curriculum requirements shall consist of a minimum of 320 instruction hours to include formal classroom instruction, in-house supervised instrument time, in-house research activities, as well as any other ap-proved method of instruction.

4.2 Primary course work consists of polygraph methodology and techniques, and instrumentation, and the following minimum contact hours of instruction in major topics are required:

4.2.1 The History and Development in the Detection of Deception through scientific means – 8 h.

4.2.2 Mechanics of Instrument Operation including mechanics and functioning of the instrument components, instrument activation and operation, chart making, instrument maintenance and calibration, and related areas – 20 h.

4.2.3 Test Question Construction which includes semantics and test question formation – 30 h.

4.2.4 Polygraph Techniques including an understanding of multi-technique procedures and must include instruction for understanding the comparison question techniques; relevant-irrelevant techniques; peak of tension procedures; and other testing techniques which are generally accepted in the field as being valid testing techniques. Major emphasis and minor emphasis may be taught depending upon the orientation and philosophy of each respective polygraph school; however, all students must acquire a least introductory knowledge of different examination procedures prominently in use by polygraph examiners in the field today – 60 h.

4.2.5 Chart Analysis, including numerical chart evaluation must provide the student with at least an introductory knowledge of the different chart analysis procedures prominently in use by examiners today. The school may emphasize and teach a major chart analysis procedure. This block of instruction will include countermeasures and Examiner actions when used or suspected.

4.2.6 Interviewing/Post-test Procedures including skills development in the pre-test and post-test interview methods and procedure – 14 h.

4.2.7 Ethics to include a thorough understanding of the ethical obligations of the examiner to the polygraph examinee, to the examiner, and to the profession. Additionally, students must be familiarized with professional polygraph organizations on a national and local level that are concerned with the development of, and the ethics within the profession – 6 h.

4.2.8 Development of Student Skills including proficiency in chart work and test procedures. This should include a minimum of the student producing 90 min of charts to be maintained in the student's files and not including maintenance and calibration charts as described in 4.2.2. Students are prohibited from conducting live polygraph examinations until after they have completed the minimum requirements in primary course work and supplemental disciplines (320 h). This does not preclude students from conducting practice examinations on each other or on role players – 57 h.

4.2.9 Topics to be determined at the School Director's Discretion – 16 h.

4.3 Instruction in the supplemental disciplines should consist of the following.

4.3.1 Legal issues relating to polygraph including appropriate federal, state and local matters along with matters relating to EPPA and ADA as appropriate – 8 h.

4.3.2 Psychological and physiological issues relating to polygraph to include basic psychology, physiological, and psychophysiological areas forming the foundations of polygraph sciences and appropriate research in those areas. Topics should include not less than 20 h in psychology, 20 h in physiology and 4 h in research area – 44 h.

4.3.3 Student Performance Evaluations in both academic and practical areas relating to polygraph – 12 h.

**5. Keywords**

5.1 countermeasures; forensic psychophysiology; polygraph instrumentation; polygraph training

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***Standard Guide for***

**Minimum Continuing Education of Individuals Involved in Psychophysiological Detection of Deception (PDD)[[4]](#footnote-4)**

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**1 Scope**

1.1 This guide establishes the minimum amount of advanced continuing education required for individuals engaged in psychophysiological detection of deception (PDD) examinations.

**2. Referenced Documents**

2.1 *ASTM Standards:[[5]](#footnote-5)*

E2000 Guide for Minimum Basic Education and Training of Individuals Involved in the Detection of Deception (PDD)

**3. Terminology**

3.1 *basic PDD training* – the initial training required to administer PDD (Polygraph) Examinations in accordance with Guide E2000.

3.2 *continuing education training* – advanced polygraph training and education completed after the basic training has been accomplished.

3.3 *primary polygraph curriculum* – advanced training in the areas of polygraph methodology and techniques such as instrumentation, chart analysis, test question construction, interviewing, and testing techniques.

3.4 *secondary polygraph curriculum* – training in polygraph-related areas such as law, psychology, physiology, research, and other areas, which relate to PDD activities. These may include, but are not limited to:

3.4.1 Computer courses, which may relate to PDD, such as, word processing, small business administration, accounting, and other appropriate areas.

**4. Significance and Use**

4.1 This guide is intended to ensure that those individuals who are practicing PDD (polygraph) examinations maintain their proficiency in the profession. Changes are constantly being made in the areas of instrumentation, testing format, and procedures, as well as legislation which affects the conduct of the industry. It is important that the individual PDD examiner be aware of changes in technology.

**5. Minimum Requirements for Advanced Continuing Education PDD Training**

5.1 The required number of minimum hours of training to maintain professional competence is 40 h, every two calendar years, starting with the date on which the basic PDD (polygraph) training was completed.

5.2 A minimum of 20 h of continuing education training must be in the primary area of instruction, and up to 20 h may be in the secondary area of instruction. A normal classroom contact hour is 50 consecutive min.

5.3 All continuing education must be documented in the form of a certificate, diploma, continuing education units (CEU) certificate, or letter transcript setting forth the following minimum information:

5.3.1 Name, address, and location of the training.

5.3.2 Name of the instructor or instructor(s) providing the instruction along with a resume of the instructor(s).

5.3.3 Date(s) of training and name of the person receiving the training.

5.3.4 Number of hours of training broken down by curriculum or subject matter and appropriate course outline(s).

**6. Sources for Advanced Continuing PDD Training**

6.1 Acceptable PDD (polygraph) advanced training may be obtained from any of the following areas:

6.1.1 Any formal PDD (polygraph) school meeting the criteria for Basic Polygraph Training in accordance with Guide E2000.

6.1.2 Any recognized national or state polygraph association.

6.1.3 Any accredited college or university offering formal courses which are related to PDD curriculum areas.

6.1.4 Advanced related courses which are presented at any formal police department or police training academy or similar group.

6.1.5 Advanced related courses which are presented by any federal investigative agency, federal government agency, or U.S. military department which are related to PDD testing.

6.1.6 Other training which is directly related to PDD in which the instructor(s) are qualified and recognized PDD (polygraph) examiners in the area in which the instruction is presented.

**7. Keywords**

7.1 advanced PDD training; continuing education; forensic psychophysiology; PDD examinations; polygraph examiner

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***Standard Guide for***

**Minimum Continuing Education of Individuals Involved in Psychophysiological Detection of Deception (PDD) Testing of Sex Offenders[[6]](#footnote-6)**

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**1. Scope**

1.1 This guide establishes minimum advanced continuing education training required for individuals engaged in psychophysiological detection of deception (PDD) testing of sex offenders.

**2. Referenced Documents**

2.1 *ASTM Standards:*[[7]](#footnote-7)

E2031 Practice for Quality Control of Psychophysiological Detection of Deception (Polygraph) Examinations

E2080 Guide for Clinical Psychophysiological Detection of Deception (PDD) Examinations for Sex Offenders

E2163 Guide for Minimum Training Requirements for Examiners Conducting Psychophysiological Detection of Deception (PDD) Testing of Sex Offenders in Treatment, Probation or Other Similar Programs

**3. Terminology**

3.1 *Definitions:*

3.1.1 *basic PDD training* – the initial training required to administer PDD examinations as set forth in Guide E2163.

3.1.2 *continuing education training* – advanced specialized PDD training and education completed after the basic training in sex offender testing.

3.1.3 *primary sex offender PDD curriculum* – advanced training in the areas of PDD methodology and techniques such as test question construction, interviewing, and applicable PDD testing protocols.

3.1.4 *secondary sex offender PDD curriculum –* -training in PDD related areas which directly relate to supervision and treatment of sex offenders.

**4. Significance and Use**

4.1 This practice is intended to ensure that those individuals who are practicing PDD examiners in connection with sex offenders to maintain their proficiency in the profession.

**5. Minimum Requirements for Continuing Education in PDD Sex Offender Testing**

5.1 The required number of hours of SOT training is 20 h every three calendar years.

5.2 All continuing education must be documented in the, form of a certificate, diploma,; continuing education units (CEU) certificate, or letter transcript setting forth the following minimum information:

5.2.1 Name, address, and location of the training,

5.2.2 Name of the instructor or instructor(s) providing the *i* instruction along with the credentials of the instructor(s),

5.2.3 Date(s) of training and name of the person receiving the training, and

5.2.4 Number of hours of training broken down by curriculum or subject matter and appropriate course outline(s).

**6. Sources for Advanced Continuing PDD Training**

6.1 Acceptable PDD (polygraph) advanced training may be obtained from any of the following areas providing such training meets the ASTM requirement; set forth in Guide E2163.

6.1.1 Any formal PDD (polygraph) school meeting the criteria for basic polygraph training as set forth in Guide E2163.

6.1.2 Any recognized national or state polygraph association.

6.1.3 Any instructor who shall possess professionally rec-: ognized expertise in sex offender testing and is qualified by appropriate credentials and experience in the area of their instruction.

6.1.4 Advanced related courses which are presented by any federal, state, or local government agency.

6.1.5 Training in related courses and presentations provided by national and state treatment provider associations or treatment provider groups.

**7. Keywords**

7.1 advanced PDD training; continuing education; forensic psychophysiology; PDD examinations; polygraph examiner; sex offender testing

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***Standard Guide for***

**Minimum Training Requirements for Examiners Conducting Psychophysiological Detection of Deception (PDD) Testing of Sex Offenders in Treatment, Probation or Other Similar Programs[[8]](#footnote-8)**

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**1. Scope**

1.1 This guide establishes the minimum training required for PDD examiners engaged in the psychophysiological detection of deception (PDD) examinations for applications with individuals in treatment, or probation or parole for sex offenses.

**2. Referenced Documents**

2.1 *ASTM Standards:[[9]](#footnote-9)*

E2000 Guide for Minimum Basic Education and Training of Individuals Involved in the Detection of Deception (PDD)

E2062 Guide for PDD Examination Standards of Practice

E2080 Guide for Clinical Psychophysiological Detection of Deception (PDD) Examinations for Sex Offenders

**3. Terminology**

3.1 *Definitions:*

3.1.1 *basic PDD training* – the initial training required to administer PDD (polygraph) examinations which is set forth in Guide E2000.

**4. Significance and Use**

4.1 This practice is intended to ensure that those individuals who are administering PDD examinations of sex offenders are proficient in such testing techniques.

**5. Minimum Requirements for a Qualifying Curriculum for PDD Testing of Sex Offenders**

5.1 The required number of minimum hours of advanced special training to qualify for sex offender testing is 40 h in accordance with Guide E2062.

5.2 A minimum of 24 h of training must be in the primary area of sex offender PDD testing to include:

5.2.1 Techniques of sexual history disclosure testing,

5.2.2 Techniques of specific offense issue testing,

5.2.3 Techniques of maintenance testing,

5.2.4 Techniques of monitoring testing,

5.2.5 Instruction in validated PDD testing formats,

5.2.6 Pretest interview procedures and formats,

5.2.7 Use of PDD examinations as required by Guide E2080 in the treatment and supervision process, and

5.2.8 Appropriate legal requirements or restrictions.

5.3 A minimum of 16 h of specialized training must be given on topics which directly relate to the treatment and supervision of the sex offender. The topics shall include, but are not limited to:

5.3.1 Behavior and motivation of sex offenders,

5.3.2 Trauma factors associated with victims or survivors of sexual assault,

5.3.3 Overview of the assessment and treatment modalities for sex offenders, and

5.3.4 Sex offender denial.

5.4 Instructors in course material related to PDD testing must meet the minimum ASTM standards of a primary instructor for a PDD basic course as required by Guide E2000. Additionally, that instructor shall possess professionally recognized expertise in sex offender testing.

5.4.1 All instructors of sex offender testing courses relating to treatment and supervision shall be qualified by appropriate credentials and experience in the areas of their instruction. They need not be PDD examiners.

**6. Sex Offender Testing Course Admission and Certification Requirements**

6.1 All PDD examiners attending the polygraph instruction portion of a sex offender testing course of instruction must be graduates of a basic polygraph examiner training course meeting the minimum requirements set forth in Guide E2000.

6.2 Non PDD examiners who are involved in the clinical treatment and supervision of sex offenders may attend the sex offender testing course but will not be eligible to be certified to practice as PDD examiners, as a result of attending this course.

6.3 Evidence of PDD training should be documented by the I provider of the instruction and furnished to the persons receiving this PPD training by diploma, letter or transcript setting forth the following minimum information:

6.3.1 Name, address, and location of the training,

6.3.2 Name of the instructor or instructor(s) providing the instruction along with a resume of the instructor(s),

6.3.3 Date(s) of training and name of the person receiving the training, and

6.3.4 Number of hours of training broken down by curriculum or subject matter and appropriate course outline(s).

**7. Keywords**

7.1 advanced PDD training; continuing education; forensic psychophysiology; maintenance or monitoring examinations; PDD examinations; polygraph examiner; sexual history disclosure examinations

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**Instrumentation**



***Standard Practice for***

**Calibration and Functionality Checks Used in Forensic Psychophysiological Detection of Deception (Polygraph) Examinations[[10]](#footnote-10)**

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**1. Scope**

1.1 This practice provides guidelines for calibration and instrumentation (both analog and computerized systems) actively used in the psychophysiological detection of deception *(verification of truth).* As a minimum, such instrumentation shall simultaneously record an individual's respiratory, exosomatic electrodermal, and cardiovascular activity.

1.2 Analog polygraphs shall be calibrated by the psychophysiological detection of deception (PDD) examiner, manufacturer, or factory-authorized individual.

1.3 Computerized instrumentation shall be calibrated by the manufacturer or factory-authorized individual.

1.4 The PDD examiner or factory-authorized individual shall perform functionality checks to ensure instrumentation is operating properly.

1.5 This practice does not prohibit additional components which may be offered as supplemental measurements of physiological change. Additional recording components (such as movement sensors) may be used in addition to, but not replace, the required minimum components and these additional components shall meet the manufacturer's specifications for calibration.

**2. Referenced Documents**

2.1 *ASTM Standards:[[11]](#footnote-11)*

E1954 Practice for Conduct of Research in Psychophysiological Detection of Deception (Polygraph)

E2000 Guide for Minimum Basic Education and Training of Individuals Involved in the Detection of Deception (PDD)

E2035 Terminology Relating to Forensic Psychophysiology

2.2 *Other Document:*

Manufacturer Manual(s) for System(s) in Use

**3. Terminology**

3.1 *Definitions of Terms* – See Terminology E2035.

3.2 Terminology may vary according to different manufacturers.

**4. Significance and Use**

4.1 This practice sets forth the minimum requirements for calibration and functionality checks when conducting PDD examinations and related activities. For additional information see Practice E1954 and Guide E2000.

**5. Minimum Requirements for Calibration and Functionality Checks of Polygraph Instrumentation**

5.1 A recorded chart shall be created demonstrating correct functioning of the instrument. This chart will be maintained for a minimum period of one year.

5.1.1 This chart shall contain the following information, as applicable: name of person performing calibration or functionality check, time and date, location, manufacturer, model, and instrument identification.

5.1.2 All notations, settings, and adjustments shall be clearly and permanently noted on the chart (either marked by hand or, in the case of computerized instrumentation, electronically recorded).

5.1.3 All calibration and functionality checks shall be conducted in accordance with the manufacturer's specifications.

**6. Calibration Check (Analog Instruments)**

6.1 Calibration checks shall be conducted in accordance with the manufacturer's specifications, but not less than once per month and any time the instrument is moved from one physical location to another.

6.2 At any time a malfunction is identified, the instrument shall not be used to conduct a PDD examination until that malfunction has been corrected as demonstrated by an additional calibration check.

6.3 A record in the form of a calibration chart shall be kept identifying the time and date, instrument identification, and who conducted the calibration check.

6.3.1 This record shall be maintained for a minimum of one year.

**7. Functionality Check (Computer Instruments)**

7.1 Functionality checks shall be conducted at least once every six months.

7.2 At any time a malfunction is identified, the instrument shall not be used to conduct a PDD examination until that malfunction has been corrected as demonstrated by a functionality check.

7.3 A record in the form of a functionality chart in printed of digital format shall be kept identifying the date, instrument identification, and by whom the functionality check was conducted.

7.3.1 This record shall be maintained for a minimum of one year.

**8. Keywords**

8.1 calibration; calibration chart; forensic psychophysiology and psychophysiological detection of deception (PDD); functionality chart; functionality check; instrument; polygraph

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***Standard Guide for***

**Instrumentation, Sensors and Operating Software Used in Forensic Psychophysiological Detection of Deception (Polygraph) Examinations[[12]](#footnote-12)**

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**1. Scope**

1.1 This guide covers the minimum requirements for instrumentation (both analog and computerized systems), sensors and operating software used in the forensic psychophysiological detection of deception *(PDD).* As a minimum, such instrumentation shall simultaneously record an individual's respiratory, electrodermal, and cardiovascular activity.

1.2 This guide does not prohibit additional components, which may be offered as supplemental measurements of physiological change. Additional recording components may be used in addition to but not to replace the required minimum components.

**2. Referenced Documents**

2.1 *ASTM Standards:[[13]](#footnote-13)*

E1954 Practice for Conduct of Research in Psychophysiological Detection of Deception (Polygraph)

E2000 Guide for Minimum Basic Education and Training of Individuals Involved in the Detection of Deception (PDD)

E2035 Terminology Relating to Forensic Psychophysiology

2.2 *Other Document:*

Manufacturer Manual(s) for System(s) in Use

**3. Terminology**

3.1 *Definitions of Terms* – See E2035.

3.2 Terminology may vary according to different manufacturers.

**4. Significance and Use**

4.1 This guide sets forth the minimum requirements for instrumentation and software when conducting PDD examinations. For additional information see Practice E1954 and Guide E2000.

**5. Minimum Requirements for Polygraph Instrumentation and Software**

5.1 A minimum of two channels of respiratory activity shall be simultaneously recorded, one thoracic and one abdominal.

5.1.1 A minimum of one channel of exosomatic electrodermal activity, via resistance or conductance, shall be recorded.

5.1.2 A minimum of one channel of cardiovascular activity shall be recorded.

5.1.3 Additional channels may be recorded but shall not be used in place of respiration, electrodermal and cardiovascular activity.

5.1.4 The instrumentation and software shall allow a way to mark the recorded information with the following minimum notations: identity of examinee, date and time, start of record-ing, pressure settings (when appropriate), gain settings, any instructions given examinee, stimulus onset, stimulus identification, end of stimulus, any answer given by examinee, standardized chart markings, end of recording and any changes made to the instrumentation or software during recording (such as pressure changes, centering adjustments and gain adjustments).

5.1.5 All mandatory channels shall be recorded within the same instrument.

5.1.6 All polygraphs shall include a separate data channel specifically designed to record covert body movements.

**6. Respiratory Activity**

6.1 Respiratory activity shall be recorded via pneumatic bellows or other transducers that give continuous measure of abdominal and thoracic girth.

**7. Electrodermal Activity**

7.1 Electrodermal activity shall be recorded via skin resistance or skin conductance.

7.2 Sensors used to record skin resistance or skin conductance should be wet Ag/AgCl electrodes, dry electrodes may be used.

**8. Cardiovascular Activity**

8.1 Cardiovascular activity shall be recorded via blood pressure cuff or its equivalent.

**9. Additional Channels**

9.1 Additional channels may be offered as supplemental measurements of physiological change.

9.2 These additional channels shall meet original manufacturer's specifications and the PDD examiner shall follow the manufacturer's guidelines for the recording device(s).

**10. Keywords**

10.1 respiratory activity; electrodermal activity; cardiovascular activity; forensic psychophysiology and psychophysiological detection of deception (PDD); stimulus onset; chart markings; instrument; polygraph

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**Psychophysiological Detection of Deception (PDD)**



***Standard Practices for***

**Interpretation of Psychophysiological Detection of Deception (Polygraph) Data[[14]](#footnote-14)**

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**1. Scope**

1.1 These practices establish procedures for the systematic interpretation and analysis of Psychophysiological Detection of Deception (PDD) data.

1.2 Any test data analysis procedure used shall be correctly matched to the PDD examination format. Examiners shall use evaluation methods for which they have been formally trained.

1.2.1 Acceptable test data analysis procedures are those published in refereed or technical journals, and for which published replications of the procedures have confirmed their efficacy.

**2. Terminology**

2.1 *Definitions of Terms Specific to This Standard:*

2.1.1 *3-position scale* – whole number values from -lto 1 assigned systematically to responses to relevant and comparison questions. These values are summed, and the PDD outcome is governed by specified decision rules for which these sums are used.

2.1.2 *7-position scale* – whole number values from -3 to 3 assigned systematically to responses to relevant and comparison questions. These values are summed, and the PDD outcome is governed by specified decision rules for which these sums are used.

2.1.3 *rank* – a number assigned to individual responses within a PDD recording hierarchically, according to relative response intensity.

2.1.4 *rank order scoring* – assignment of ranks according to relative magnitude of the responses. The PDD outcome is governed by specified decision rules using these ranks.

2.1.5 *respiration line length* – sum of the length of the respiration waveform over a fixed time period.

2.1.6 *response amplitude* – magnitude of a response from stimulus onset to maximum expression of the response within the response window.

2.1.7 *response duration –* period between a phasic response onset and return to baseline.

2.1.8 *response latency* – time between stimulus and response onsets.

2.1.9 *response window – the* period in which physiological responding normally occurs and recovers after stimulus onset. Response windows vary by channel.

2.1.10 *score* – a number systematically assigned to an established set of comparisons within a PDD recording.

2.1.11 *spot score* – sum of scores associated with an individual relevant question across all test recordings.

2.1.12 *stimulus onset* – commencement of stimulus presentation.

2.1.13 *tonic level* – resting or baseline activity level of the examinee.

2.1.14 *total numerical score* – sum of scores for an entire series of charts and questions.

**3. Summary of Practices**

3.1 *Global Evaluation:*

3.1.1 Evaluators utilizing global interpretation shall:

3.1.1.1 Be formally trained in global interpretation.

3.1.1.2 Confirm that the recordings are suitable for global evaluation. If they are not suitable, no evaluation shall be undertaken for the purpose of diagnosing truthfulness or deception. Nothing shall preclude an evaluator from reporting evidence of countermeasures when this evidence exists.

3.1.1.3 Use analysis methods generally recognized to be accurate.

3.1.2 When possible, numerical evaluation shall be preferred over global evaluation.

3.2 *Numerical Evaluation:*

3.2.1 Evaluators employing numerical evaluation shall first verify that the PDD recordings are suitable for evaluation. If they are not suitable, no evaluation shall be undertaken for the purpose of diagnosing truthfulness or deception.

3.2.1.1 Nothing shall preclude an evaluator from reporting evidence of countermeasures when this evidence exists.

3.2.2 There are four principal components to numerical evaluation. They are:

3.2.2.1 Identification of diagnostic tracing features.

3.2.2.2 Assignment of numerical values according to the relative intensity of the tracing features.

3.2.2.3 Computations based on the numerical values.

3.2.2.4 Decision rules that result from the computations.

3.2.3 While others may occur in individual cases, there are five empirically established diagnostic features in the respiration channel. They are:

3.2.3.1 Suppression of respiration amplitude.

3.2.3.2 Slowing of breathing rate (increase in cycle time, or bradypnea).

3.2.3.3 Change in the inhalation/exhalation time ratio.

3.2.3.4 Apnea.

3.2.3.5 Rise in the baseline of the respiration cycles. All of the diagnostic features in respiration, except the rise in baseline, are captured by a common metric, respiration line length.

3.2.4 There is one primary diagnostic feature in the electro-dermal channel that has been empirically confirmed. It is electrodermal response amplitude.

3.2.4.1 There are two secondary diagnostic features: *(1)* Response complexity. *(2)* Response duration.

3.2.5 While others may occur in individual cases, there is one primary diagnostic feature in the cardiograph channel that has been empirically verified. It is the rise in the cardiograph tracing baseline.

3.2.5.1 There is one secondary feature: response duration.

3.2.6 There are two diagnostic features in the photoplethys-mograph that have been empirically determined. They are decrease in pulse amplitude and duration of response.

3.2.7 Assignment of numbers to relative response intensities shall be in keeping with those of scoring systems that have been empirically verified and cross-validated in university-grade research.

3.2.8 Computation methods using the assigned numbers intensities shall be in keeping with those of scoring systems that have been empirically verified and cross-validated in university-grade research.

3.2.9 Decision rules shall be in keeping with those of scoring systems that have been empirically verified and cross-validated in university-grade research.

**4. Keywords**

4.1decision rules; global analysis; numerical analysis; polygraph; psychophysiological detection of deception

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***Standard Guide for***

**Clinical Psychophysiological Detection of Deception (PDD) Examinations for Sex Offenders[[15]](#footnote-15)**

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**1. Scope**

1.1 This guide establishes procedures for conducting a clinical polygraph examination (CPE), to include, but not limited to, post conviction sex offender testing (PCSOT). This PDD model is specifically intended to assist in the treatment and supervision of sex offenders on probation, parole, or a deferred prosecution alternative.

1.2 This guide also applies to the conduct of clinical polygraph examinations for therapeutic purposes when requested by a presiding legal authority.

1.3 This guide directs that such examiners for this application are specifically trained in issues associated with supervision and treatment of sex offenders.

**2. Referenced Documents**

2.1 *ASTM Standards:[[16]](#footnote-16)*

E2000 Guide for Minimum Basic Education and Training of individuals Involved in the Detection of Deception (PDD) E2035 Terminology Relating to Forensic Psychophysiology E2062 Guide for PDD Examination Standards of Practice E2064 Guide for Minimum Continuing Education of Individuals Involved in Psychophysiological Detection of Deception (PDD) E2163 Guide for Minimum Training Requirements for Examiners Conducting Psychophysiological Detection of Deception (PDD) Testing of Sex Offenders in Treatment, Probation or Other Similar Programs

**3. Terminology**

3.1 *Definitions* – Specific terms used in this standard are defined in Terminology E2035.

3.2 Specific terms within this guide found in Terminology E2035 are: *clinical PDD examinations, disclosure over sexual history examinations, maintenance examinations over treatment issues, maintenance examinations over supervision issues, monitoring examinations, specific denial examinations over instant offense,* and *successive hurdles approach.*

**4. Significance and Use**

4.1 Clinical PDD examinations refer to the employment ol polygraph instrumentation for the purpose of detecting deception or verifying truthfulness of statements of individuals under court supervision, or in treatment for the commission of a sex offense.

4.2 Clinical PDD examinations are specifically intended to assist in the detection, treatment, or supervision of sex offenders.

**5. Clinical PDD Examiner Qualifications**

5.1 Clinical PDD examiners shall meet the basic qualifications in accordance with ASTM standards in accordance with Guide E2000.

5.2 Clinical PDD examiners shall possess the necessary current certificate or license in accordance with their state statute or jurisdictional authority.

5.3 Examiners who conduct clinical PDD examinations shall successfully complete a minimum of, but not limited to, 40 h of specialized sex offender training in accordance with ASTM standards in accordance with Guide E2163.

**6. Continuing Education**

6.1 Clinical PDD examiners shall maintain continuing education in accordance with ASTM standards in accordance with Guide E2064.

**7. Frequency of Clinical PDD Examinations**

7.1 The examiner shall not conduct more than four separate clinical PDD examinations per year on the same examinee.

7.1.1 Additional testing to resolve the initial issue(s), even if J conducted on different days, is not considered a separate examination within the scope of the standard.

7.2 The examiner shall not conduct a clinical PDD examination of less than 90 min.

7.3 The following is the maximum number of examinations that shall be conducted by an examiner in any single calendar day:

7.3.1 The examiner shall not conduct more than three clinical PDD sexual history disclosure examinations in any single calendar day.

7.3.2 The examiner shall not conduct more than four clinical PDD maintenance, monitoring, or specific denial examinations in any single calendar day.

7.3.3 The examiner shall not conduct a combination of more than four clinical PDD examinations in any single calendar day.

7.3.4 The examiner shall not conduct more than a total of five PDD examinations of any design, purpose, or format in any single calendar day.

**8. Test Formats and Procedures**

8.1 Clinical PDD sex offender examination formats shall be in accordance with ASTM standards in accordance with Guide E2062.

8.1.1 Whenever the results of a clinical PDD maintenance examination indicate the need for further testing to obtain a diagnostic conclusion, the specific issue test format will be utilized.

8.2 The examiner's report shall reflect a conclusion or opinion based solely on the polygraph results and the physiological data collected. The report shall remain free of any opinions or recommendations by the examiner regarding court supervision, incarceration, and treatment. This report shall remain as free of psychological language as possible.

8.3 All clinical PDD examinations of sexual offenders shall be recorded in their entirety. Audio/visual recording is the preferred medium.

8.3.1 All PDD documents and test data (to include recordings) shall be maintained for a period of not less than one year.

**9. Keywords**

9.1 clinical; disclosure; maintenance; monitoring; PDD; post-conviction sex offender testing; sex offender examinations; sex offender testing; successive hurdles approach

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***Standard Guide for***

**Conduct of PDD Screening Examinations[[17]](#footnote-17)**

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**1. Scope**

1.1 This guide establishes essential and recommended elements in the procedures for the conduct of a psychophysiological detection of deception (PDD) screening examination.

**2.Referenced Documents**

2.1 *ASTM Standards:[[18]](#footnote-18)*

E2000 Guide for Minimum Basic Education and Training of Individuals Involved in the Detection of Deception (PDD)

E2031 Practice for Quality Control of Psychophysiological Detection of Deception (Polygraph) Examinations

E2063 Practice for Calibration and Functionality Checks Used in Forensic Psychophysiological Detection of Deception (Polygraph) Examinations

E2064 Guide for Minimum Continuing Education of Individuals Involved in Psychophysiological Detection of Deception (PDD)

**3. Location and Test Conditions**

3.1 Conditions under which testing occurs shall be free from distractions that would interfere with the ability of the examinee to appropriately focus on the issues being addressed. The examination site should be reasonably free from outside noise and distraction.

**4. Preparation**

4.1 All relevant paperwork pertaining to the examinee should be made available to the examiner in ample time for review prior to the examination.

4.2 Only instruments meeting ASTM standards, as a minimum, should be used during the conduct of PDD screening examinations.

4.3 No examination shall be conducted unless the instrument is functioning in accordance with Practice E2063.

4.4 An examiner shall, prior to the examination, dedicate sufficient time to identify the issues and unique circumstances in any area of anticipated testing.

**5. Pretest Practices**

5.1 The examiner shall adhere to the following practices:

5.1.1 Verify the correct identity of the examinee to the extent possible.

5.1.2 Obtain the consent of the examinee prior to testing.

5.1.3 The examiner shall ensure that the examinee is a fit subject for testing to the extend legally practicable.

5.1.3.1 At any time during the PDD examination that it becomes apparent to the examiner that the examinee is not suitable for testing, the examination will be terminated.

5.2 All screening examinations shall be conducted in compliance with governing local, state, and federal regulations and laws.

5.3 The examiner shall display objectivity.

5.4 Sufficient time shall be spent to discuss the issues to be tested and to allow the examinee to explain his or her position.

5.5 The examiner shall formulate all test questions in compliance with recognized professional practices.

5.6 The examiner shall allow sufficient time to introduce each test question to the examinee in a manner which complies with recognized professional practices.

5.6.1 Sufficient time shall be spent to ensure that the examinee recognizes and understands each question.

5.7 Sufficient time shall be spent to ensure that the examinee understands the PDD process and that cooperation is required.

5.8 Screening examinations shall be audio/visual recorded in their entirety unless precluded by provisions in 5.2.

**6. Intest Practices**

6.1 Examiners shall use testing formats and techniques in accordance with ASTM standards.

6.2 Examiners shall only use screening formats for which they have been trained in accordance with Guide E2000 and Guide E2064.

6.2.1 No more than five relevant questions should be addressed in any one series of a screening examination.

6.2.2 Screening tests, like other multiple-issue PDD techniques, are tests for utility, designed as a screening method and not a specific issue examination. To maximize accuracy and utility, a specific issue test should be conducted when significant responses appear using this screening tool. When such responses are present to any relevant question on the screening test, the response should be explored further with the examinee and tested using a single-issue comparison test format as outlined in ASTM standards. Opinions that an examinee has been deceptive should result only from the analysis of a specific issue test.

6.3 All physiological recordings shall be accounted for, and considered in the final opinion.

6.4 Examiners shall not deliberately change the manner in which the questions are presented within a test.

6.5 Question intervals shall allow for a reasonable recovery.

6.6 Stimulus onset to stimulus onset shall not be less than 20 seconds.

**7. Evaluation Practices**

7.1 The examiner shall use evaluation methods for which they have been formally trained and that are appropriate to that testing technique.

7.1.1 All scoring and decision rules used within an organization for PDD screening shall be rendered in writing.

7.2 The examiner shall maintain all records of test data analysis in accordance with Practice E2031.

7.3 The examiner shall not disclose the results of the examination until the test has been adequately and sufficiently analyzed.

7.4 Examiners shall collect a sufficient amount of physiological data suitable for evaluation in compliance with the format utilized.

7.4.1 All suitable physiological data will be evaluated when formulating an opinion.

**8. Posttest Practices**

8.1 Following collection of all physiological data, a discussion of the examination shall be conducted, as appropriate.

8.2 Consumers of PDD results shall be advised that any decision regarding the examinee's status should not be based solely on the results of physiological responses obtained during a PDD screening examination.

**9. Keywords**

9.1 forensic psychophysiology; PDD employment screening examination; PDD examination; polygraph

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***Standard Guide for***

**PDD Examination Standards of Practice[[19]](#footnote-19)**

This standard is issued under the fixed designation E2062; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (e) indicates an editorial change since the last revision or reapproval.

**1. Scope**

1.1 This guide establishes essential and recommended elements in the procedures for the conduct of a psychophysiological detection of deception (PDD) examination.

1.1.1 Other unique PDD applications are addressed separately.

**2. Referenced Documents**

2.1 *ASTM Standards:[[20]](#footnote-20)*

El954 Practice for Conduct of Research in Psychophysiological Detection of Deception (Polygraph)

E2000 Guide for Minimum Basic Education and Training of Individuals Involved in the Detection of Deception (PDD)

E2031 Practice for Quality Control of Psychophysiological Detection of Deception (Polygraph) Examinations E2065 Guide for Ethical Requirements for Psychophysiological Detection of Deception (PDD) Examiners

E2080 Guide for Clinical Psychophysiological Detection of Deception (PDD) Examinations for Sex Offenders

**3. Location and Test Conditions**

3.1 Conditions under which testing occurs shall be free from distractions that would interfere with the ability of the examinee to appropriately focus on the issues being addressed. The examination site should be reasonably free from outside noise and distraction. This is not intended to address examinations conducted for demonstration purposes.

**4. Preparation**

4.1 An examiner shall, prior to the examination, dedicate sufficient time to identify the issues and unique circumstances in any area of testing.

4.2 No examination shall be conducted unless the instrument is functioning in accordance with the manufacturer's specifications.

4.3 Where permitted by law, the conduct of the PDD examination should be recorded by audio or audio/visual means in its entirety.

4.3.1 The recording shall be continuous in nature and any stops or pauses must be fully explained on the recording.

4.3.2 All PDD recordings shall be retained and maintained for a minimum of one year.

4.3.3 All PDD examinations shall be conducted utilizing a separate data channel specifically designed to record covert body movements.

4.4 An examiner should not conduct more than five PDD examinations on a calendar day.

**5. Pretest Practices**

5.1 The examiner shall adhere to the following practices:

5.1.1 Verify the correct identity of the examinee to the degree practicable.

5.1.2 Obtain the consent of the examinee prior to testing.

5.1.3 The examiner shall ensure that the examinee is a fit subject for testing to the extent legally practicable.

5.1.3.1 Mental, physical, and medical conditions of the examinee should be reviewed.

5.1.3.2 At any time during the polygraph examination that it becomes apparent to the examiner that the examinee is not suitable for testing, the examination will be terminated.

5.1.3.3 To protect against the elevated possibility of erroneous polygraph results, examiners shall not conduct polygraph testing of any individual who has undergone intensive accusatory questioning until, in the examiner's judgment, sufficient time has elapsed between such questioning and the polygraph session. Examiners directed by superiors to conduct testing in violation of this standard shall inform their superiors of the strong possibility of either erroneous or inconclusive polygraph test results.

5.2 All examinations shall be conducted in compliance with governing local, state, and federal regulations and laws.

5.3 The examiner shall display objectivity.

5.4 Sufficient time shall be spent to discuss the issues to be tested and to allow the examinee to fully explain his or her position.

5.5 The examiner shall formulate all test questions in compliance with recognized professional practices.

5.6 The examiner shall allow sufficient time to introduce each test question to the examinee in a manner which complies with recognized professional practices.

5.6.1 Sufficient time shall be spent to ensure the examinee recognizes and understands each question.

5.7 Sufficient time shall be spent to ensure that the examinee understands the polygraph process and that cooperation is required.

**6. Intest Practices**

6.1 Examiners shall use techniques and formats in accordance with Practices E1954 and E2031 and Guides E2000, E2065, and E2080, as applicable.

6.2 A continuous recording shall be made and maintained of the data produced during the intest phase. All test data must be accounted for prior to rendering an opinion.

6.3 Questions shall be asked in such a manner that responses are not influenced by the manner in which the question is presented.

6.4 Question intervals shall allow for a reasonable recovery or meet the requirements of a scoring algorithm.

6.4.1 Stimulus onset to stimulus onset shall not be less than 20 s.

**7. Evaluation Practices**

7.1 The examiner shall use evaluation methods for which he or she has been formally trained and that are appropriate to that testing technique.

7.1.1 Acceptable evaluation methods are those which have known error and accuracy rates established by independent research.

7.2 The examiner shall maintain all records of test data analysis in accordance with Practices E1954 and E2031 and Guides E2000, E2065, and E2080, as applicable.

7.3 The examiner shall not disclose the results of the examination until the test has been adequately and sufficiently analyzed.

7.4 Examiners shall collect a sufficient amount of physiological data suitable for evaluation in compliance with the format utilized.

7.4.1 All suitable physiological data will be evaluated when formulating an opinion.

**8. Posttest Practices**

8.1 Following collection of all physiological data, a discussion of the examination shall be conducted, as appropriate.

**9. Use of Interpreters**

9.1 PDD examiners should assess the need for language translation, including both foreign languages and sign lan-, guages, on a case-by-case basis.

9.2 PDD examiners should use interpreters who are fluent in both written and spoken language for which they are interpreting. Interpreters should be fluent and conversant in idiomatic translation of the topical content of the PDD examination.

9.3 PDD examiners should not use interpreters who are relatives or friends of the examinee.

9.4 PDD examiners shall require that interpreters maintain professional boundaries with the examinee.

9.5 Before beginning the examination process, PDD examiners shall ensure that interpreters are familiar with the process of PDD examinations.

9.6 PDD examiners shall require interpreters to provide a written translation of each question prior to the test phase of the examination. It is also recommended that a mirror translation be completed in which the translated test questions are retranslated back to the language of the examiner. This translation shall be prepared prior to the test phase of the examination, and shall be maintained as part of the PDD examination record.

**10. Keywords**

10.1 forensic psychophysiology; interpreter; PDD; PDD examination; polygraph

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***Standard Guide for***

**PDD Paired Testing[[21]](#footnote-21)**

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**1. Scope**

1.1 This is a guide for the derivation of quantitative assessments of the credibility of proposed witness testimony through the application of established statistical principles to combinations of PDD examination results, and for the utilization of such assessments in the interests of justice (The Marin Protocol).

1.2 This guide describes circumstances in which proven statistical principles, applied to PDD results, can reliably quantify the trustworthiness or untrustworthiness of witness testimony, and

1.2.1 Delineates requirements necessary to effect the generation and practical use of such results, including:

1.2.1.1 Criteria regarding witnesses to be examined,

1.2.1.2 Criteria for determining facts upon which witnesses are to be examined,

1.2.1.3 Certification of examiners eligible to conduct examinations,

1.2.1.4 Combinations of results which support strong inferences, and

1.2.1.5 Appropriate uses to which strong inferences can be put.

1.3 Courts and others responsible for adjudicating questions of fact may choose whether and when to invoke paired PDD testing.

1.3.1 This guide expresses the rights and obligations of all participants in order to best serve the interests of justice when it is invoked.

1.3.2 Paired PDD testing must not be invoked in any case in any jurisdiction where to do so would violate the laws of that jurisdiction.

1.3.3 Adherence to these guidelines ensures that the conclusions reached will be valid.

1.4 This guide is directed to the proposed testimony of witnesses in criminal, civil, administrative and family court litigation, regarding factual claims, where

1.4.1 It is unlikely that the witnesses could be honestly mistaken, and

1.4.2 The facts in dispute are such that the case may hinge on whom the trier of fact believes; whenever,

1.4.3 Witnesses on opposite sides of a case offer contradictory testimony.

1.4.4 Two or more witnesses testifying for one side offer mutually corroborating testimony.

**2. Referenced Documents**

2.1 *ASTM Standards:[[22]](#footnote-22)*

E2G31 Practice for Quality Control of Psychophysiological Detection of Deception (Polygraph) Examinations

**3. Significance and Use**

3.1 The goal of this guide is to reduce the incidence and impact of perjured testimony in administrative proceedings and in the criminal, civil and family court systems.

3.2 It is a mathematically established statistical principle that the probability of two independent events both occurring is the algebraic product of the probabilities of either event occurring alone.[[23]](#footnote-23)

3.3 In litigation, the situation frequently arises:

3.3.1 That witnesses from opposite sides offer diametrically contradictory testimony regarding a fact or facts, such that one must almost certainly be lying, and

3.3.2 That witnesses from one side corroborate each other's testimony, such that either both must be telling the truth, or both must be lying.

3.4 Where both witnesses are examined regarding a fact:

3.4.1 By PDD examiners who have personally established that the level of accuracy they are able to achieve meets or exceeds requirements established by the courts of the jurisdiction.

3.4.2 The results when taken together support a strong common inference about the respective deceptiveness of the subjects.

3.4.3 If the minimum accuracy is set at 86 %, the probability that the inference will be wrong is less than 2.00 *%.* If the minimum accuracy is set at 90 %, the probability that the inference will be wrong is no higher than 1.00 %.

3.5 When more than two witnesses are examined by such examiners about a fact and all results support a common inference about the deceptiveness of the subjects regarding that fact, the probability that the inference will be wrong is even lower, in accordance with the statistical principle.

3.6 The validity of this guide rests on evidence that competent examiners are personally capable of achieving sufficient accuracy.

3.6.1 Determination of examiners' competence must be based not primarily on their training, years of experience, or the number of tests they have conducted, but on their person-ally demonstrated capability of the participating examiners.

3.7 The conditions and procedures outlined in this guide shall be known as the "Marin Protocol" for the originator.[[24]](#footnote-24)

**4. Procedures**

4.1 A litigant should be entitled, by offering to have his or her own witness(es) undergo polygraph examinations by certified examiner(s) regarding potentially dispositive facts, to request a ruling from the presiding judicial authority that the witness(es) from the opposing side who intend to offer contradictory testimony be examined by certified examiner(s) concerning those; facts.

4.1.1 A fact should be deemed "potentially dispositive" if a finding in regard to it, in either direction, could be decisive to the verdict. For example, where the fact at issue is whether an item of evidence had been fabricated, then even though a finding that it had not been fabricated might not be decisive, the fact at issue would nevertheless be "potentially dispositive" if a finding that the item was genuine could be decisive.

4.1.2 An otherwise potentially dispositive fact may be adjudged to be not potentially dispositive if supervening irrefragable evidence such as videotape or forensic materials is available regarding that fact.

4.2 A party's offer must specify the facts on which each witness is to be examined.

4.2.1 Where a litigant offers to have any witnesses examined about a fact, that offer must apply to all witnesses of the litigant intending to testify about that fact.

4.2.2 To satisfy the statistical probability requirements, and to ensure perjured testimony is not offered by secondary witnesses, all witnesses from the opposing side who intend to testify about that fact must either undergo PDD examination, or refuse on the record to do so. The presiding officer should treat a refusal to undergo PDD examination in regard to a fact by any witness other than the defendant in a criminal proceeding as equivalent to a finding of deception.

4.2.3 Defendants in criminal proceedings should1 have the right to offer to undergo PDD examination pursuant to this protocol in regard to dispositive facts for the purpose of excluding, impeaching or rebutting testimony by prosecution witnesses regarding those facts, without compromising their rights under the Fifth and Fourteenth Amendments or being obliged themselves to later testify regarding that fact.

4.2.4 Neither a finding of deceptiveness nor the refusal of a witness to be examined should be used in any proceeding for any purpose other than exclusion, impeachment or rebuttal of testimony.

4.2.5 The challenging attorneys are responsible to specify the fact or facts about which witnesses are to be examined.

4.2.6 The judge or presiding officer should exercise reasonable discretion to reject a request regarding a fact on the grounds that the fact is not potentially dispositive, or is not likely to be known to more than one witness, such as a person's state of mind.

4.2.7 The PDD examiners are responsible for the formula-tion of the actual wording of the questions.

4.3 *Deterrents to Abuse:*

4.3.1 Where examinations administered pursuant to this guide result in a determination of deceptiveness regarding one party's testimony, and a determination of non-deceptiveness in regard to the opposing witness, that party whose witness has been found deceptive shall ordinarily bear the costs of the PDD examinations and all other costs incurred in the application of the guide to those witnesses.

4.3.2 It is important to discourage the frivolous invocation of this guide, particularly in furtherance of false accusations of police misconduct such as coercion of confessions or planting of evidence. The court or presiding officer should advise the offering (accusing) party that if he or she is found deceptive and the accused law enforcement officer is found non-deceptive, the frivolous accuser may be subject to sanctions including referral of the incident for possible prosecution.

4.3.3 If a witness is deemed unsuitable or non cooperative for PDD testing by the polygraph examiner the Marin Protocol shall be null and void and without effect. The testing examiner shall specify the reason(s) for a decision of unsuitablility or non cooperation.

4.3.4 Except in extraordinary circumstances, witnesses examined pursuant to a request under this protocol should be examined by different examiners/Insofar as practical, the examinations should be conducted simultaneously.

4.3.5 To prevent conflicts of interest and minimize the occurrence or appearance of impropriety, when a party's witness has been found deceptive or a witness of the opponent has been found non-deceptive by examinations conducted pursuant to this guide, the party or the court may request that the relevant videotapes and all other work products be submitted for a quality assurance review in compliance with Practice E2031.

4.3.5.1 When quality assurance process is initiated, the videotapes and all other work products shall be submitted through a disinterested intermediary to an independent, quality control reviewer, certified at an accuracy of at least 86*%* for both deceptive and non-deceptive conclusive results.

4.3.5.2 When a reviewer believes that the materials warrant a result different from that of the original examiner, he shall state in writing the specific reasons for his objection, and his opinion as to the correct result. The videotape and the charts shall then be submitted to two additional reviewers. If both of those reviewers agree with the original examiner, the examiner's conclusion shall stand as the official result. If both agree with the first reviewer, the reviewer's conclusion shall be the official result. Otherwise, the result shall be officially recorded asinconclusive. The new official result shall be treated for all purposes as if it were the unchallenged result of an original examiner.

4.3.5.3 When a reviewer believes that serious deviations from the norms of good practice of the methodology employed by the original examiner preclude a sound conclusion, he shall state in writing the specific reasons for his opinion. The videotape and the charts shall then be submitted to two additional reviewers. If both of those reviewers agree with the original examiner, the examiner's conclusion shall stand as the official result. Otherwise, the witness shall be retested by a different examiner.

**5. Exclusionary Application**

5.1 Either party may offer to have one or more of his witnesses undergo examination regarding dispositive facts, thereby challenging the witnesses from the opposing side Intending to testify regarding those facts to do the same.

5.1.1 The offer should contain the stipulation that where either party's witness(es) test positive for deception in regard to any facts, and the opposing party's witness(es) test negative in regard to those facts, then the deceptive witness should not testify in regard to those facts at the discretion of the court.

5.2 The PDD results are not admitted into evidence before the finder of fact unless explicitly permitted by the court.

5.2.1 The examiners do not appear as experts before the finder of fact at trial.

5.3 Precedents and existing rules concerning the admissibility of polygraph results or the appearance of polygraph examiners as expert witnesses before the finder of fact, by stipulation of the parties or otherwise, are not affected and need not be modified.

5.4 Exclusion under this guide is an embodiment of the principle that courts should exclude untrustworthy, confusing and misleading evidence.

5.4.1 This exclusionary application of the guide is analogous to and shares the underlying rationale of established rules of evidence such as those regarding hearsay. It no more, intrudes upon the province of the jury than do such rules, and unlike them is supported by a strong mathematical foundation quantifying the untrustworthiness of the evidence to be excluded.

5.4.2 This guide does not address and is not affected by the issue of the scientific basis of PDD or by the issue of the admissibility of PDD examination results as scientific evidence.

5.5 Under the Exclusionary Application of the Marin Protocol, if either party's witness(es) test positive for deception in regard to a fact or refuse to be examined about it, and the other party's witness(es) test negative in regard to that fact and none test positive, the refusing or deceptive party's witness(es) should be excluded from testifying in regard to that fact at the discretion of the court.

5.5.1 If neither party requests testing of witnesses regarding a fact, the protocol does not apply regarding that fact, the protocol does not apply regarding that fact.

5.5.2 Unedited beginning-to-end videotapes of the examinations together with the charts and reports of the examiners and the reports of reviewers shall be made available to the judge or presiding official.

5.5.3 Witnesses should be subject to cross-examination as any other witnesses.

5.5.4 Under the Exclusionary Application, in no event shall either side be permitted to make any reference to the polygraph before the trier or fact, unless explicitly permitted to do so by the court.

5.6 Question-and-answer sequences concerning dispositive facts may be cited for the purpose of impeachment of a witness, so long as the citation does not reveal that the sequences occurred during a polygraph examination.

**6. Admissibility Application: Impeachment and Rebuttal**

6.1 Either party may offer to have one or more of his witnesses undergo examination regarding dispositive facts, thereby challenging the witnesses from the opposing side intending to testify regarding those facts to do the same.

6.1.1 The challenging party's offer shall stipulate that,

6.1.2 If a witness from either side tests non-deceptive regarding facts and a witness from the other side tests deceptive about those facts or refuses to undergo examination in respect to them, then

6.1.3 If the deceptive or refusing witness nevertheless offers testimony about those facts, then the polygraph results shall be admitted:

6.1.3.1 For purposes of impeachment and rebuttal:

*(1)* Supported by the testimony of the polygraph examiners, and

*(2)* Supported by testimony of such other witnesses as may be necessary to make clear to the finder of fact the rationale underlying inferences about the untrustworthiness of the testimony; including as necessary,

*(3)* The validity of Litigation Certificates, or

*(4)* The validity of the mathematical reasoning, or both.

6.2 Nothing about the polygraph may be introduced by either side in regard to testimony about facts where examinations have produced any other combination of results or about which neither party has requested testing.

6.2.1 Unedited beginning to end videotapes of the examinations together with the charts and reports of the examiners and the reports of reviewers shall be made available to the judge or presiding official.

6.3 If neither party requests testing of witnesses regarding a fact, or the examinations produce any other combination of results about a fact, then no testimony about the polygraph examinations shall be admissible regarding that fact.

**7. Applications**

7.1 Courts or presiding officials may initiate or utilize examinations conducted in accordance with this protocol:

7.1.1 In challenges to testimony supporting search and arrest warrants;

7.1.2 To assess the trustworthiness of witnesses offering alibi or other exculpatory testimony;

7.1.3 To assess the weight to be given to the word of informants whose trustworthiness is uncertain or those who may have conflicting interests;

7.1.4 To ascertain the good faith of litigants as a guide to the conduct of the case, including adjudication of motions and the negotiation of settlements; and

7.1.5 In requests for post-conviction relief, to assess the weight to be given to witness recantations and exculpatory confessions.

**8. Certification**

8.1 The statistical basis for the validity for this protocol depends upon the proven ability of each participating examiner to perform at a known level of accuracy. Consequently, only examiners who have personally demonstrated their level of accuracy shall be eligible to conduct examinations or conduct Quality Assurance reviews pursuant to it.

8.1.1 Examinations shall be conducted by persons holding a Contested Testimony Resolution Certificate, or its equivalent, from a competent certifying authority, based upon their having demonstrated their personal accuracy, and on their having met certain other criteria.

8.2 Examiners shall be eligible for certification upon completion of a supervised examination regimen conducted under the auspices of the courts or other entity of federal or state government, or an institution or organization designated as a Contested Testimony Resolution Certificate Issuance Authority or its equivalent by the American Polygraph Association, or the American Association of Police Polygraphists, or the American Bar Association.

8.2.1 The examiner:

8.2.1.1 Has not been convicted of a felony or misdemeanor involving moral turpitude;

8.2.1.2 Has attained the age of 21 years; and

8.2.1.3 Has demonstrated competence in an established procedure or procedures by conducting complete examinations of subjects including pretest interview, question formulation, question presentation and the interpretable charts and data collection.

8.2.2 The examiner's competence in the correct administration of the procedure is affirmed by a panel of examiners after-watching videotapes of the examiner conducting examinations.

8.2.3 The examiner shall analyze charts from an archive of at least 100 examinations where ground truth is known, obtaining:

8.2.3.1 Conclusive results for at least 80 % of the subjects, and

8.2.3.2 Correct results for 86 % of the conclusive results reported.

8.3 Certification of any examiner shall be limited to the procedure(s) used in obtaining the certificate.

8.4 A roster of certified examiners shall be made available to the courts.

8.4.1 Examiners may elect not to have their names placed on the roster. Examiners shall have a reasonable time after they are informed of their results in which to make such election.

**9. Responsibilities of the Court**

9.1 The courts of each jurisdiction should select examiners-from the roster of Contested Testimony Resolution Certificate holders.

9.2 The court should require examination results to be accompanied by an unedited beginning-to-end videotape of the examination.

9.2.1 The videotapes, together with the charts and reports of the examiners and the reports of reviewers should be made part of the record or appellate and other purposes.

**10. Keywords**

10.1 Contested Testimony Resolution certificate; evidence; false statements; forensic psychophysiology; litigation; Marin Protocol; perjured testimony; perjury; polygraph; testimony; trustworthy testimony; untrustworthy testimony

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**Quality Control**



***Standard Practice for***

**Quality Control of Psychophysiological Detection of Deception (Polygraph) Examinations[[25]](#footnote-25)**

This standard is issued under the fixed designation E2031; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (e) indicates an editorial change since the last revision or reapproval.

**1. Scope**

1.1 This practice establishes essential and recommended procedures for the conduct of quality control for a Psychophysiological Detection of Deception (PDD) examination.

**2. Referenced Documents**

2.1 *ASTM Standards:[[26]](#footnote-26)*

E2035 Terminology Relating to Forensic Psychophysiology

**3. Terminology**

3.1 *Definitions* – For additional terminology relating to PDD, refer to Terminology E2035.

3.2 *independent quality control review* – an evaluation of the PDD examination that is free of undue influence from the original examiner or other persons.

3.3 *objective quality control review* – an evaluation of PDD test data based upon established analysis procedures which meet ASTM standards.

3.4 *PDD Report* – a written account to the person or agency requesting the examination which summarizes the details of an individual PDD examination. The report should include, but is not limited to: the details of the incident or the circumstances for which the examination was conducted; identifying information of the examinee; the purpose of the examination; identifying information of the examiner; the results of the examination; the instrumentation utilized to collect the test data; and any explanatory remarks determined necessary by the examiner. For a specific issue examination, all relevant questions and the examinee's answers shall be included.

3.5 *quality control* – a systematic, independent, and objective review, evaluation, and critique of a PDD examination by a qualified examiner. This review is designed to ensure each examiner maintains professional standards.

**4. Summary of Practice**

4.1 All PDD examinations may be subjected to a quality control review. Prior to a PDD examination being considered by any court or judicial tribunal, in order to ensure each examination meets appropriate standards, each examination should undergo a quality control review.

4.2 Experienced examiners who are trained in the PDD format utilized by the original examiner are qualified to conduct a quality control review of an examination.

4.3 A quality control review shall be independent and objective and meet all applicable ASTM standards. The quality control process should involve, but is not limited to a review of: the test data analysis of all charts collected during the examination; all questions and answers utilized during the examination to produce the data which were evaluated; the PDD report; any available electronic recordings; and all allied paperwork completed by the PDD examiner in support of the examination.

4.4 The person conducting the quality control review shall attest, in writing, as to whether the test data supports the conclusion rendered by the original examiner.

4.5 All PDD documents and test data shall remain available for a quality control review for no less than a year or until the incident or circumstance requiring the examination to be conducted has been completely adjudicated.

**5. Keywords**

5.1 forensic psychophysiology; PDD; psychophysiological detection of deception; quality control; standards

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**Research**

 652

***Standard Practice for***

**Conduct of Research in Psychophysiological Detection of Deception (Polygraph)[[27]](#footnote-27)**

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**1. Scope**

1.1 This practice establishes essential and recommended elements in the design, conduct, and reporting of research on psychophysiological detection of deception (polygraph) (PDD). Analog and field research are addressed separately.

**2. Referenced Documents**

2.1 *ASTM Standards:[[28]](#footnote-28)*

E2035 Terminology Relating to Forensic Psychophysiology

**3. Terminology**

3.1 For full explanations of terminology relating to PDD, refer to Terminology E2035.

**4. Summary of Practice**

4.1 *Laboratory Research:*

4.1.1 Unless subjects must be individually trained or conditioned to achieve some criterion, subject manipulation procedures shall require minimal human interaction. Those portions requiring human interaction shall be standardized to the extent possible.

4.1.2 All procedures shall be described and reported in sufficient detail that others can replicate them. This shall include logistical factors that may introduce systematic error, such as when subject handling allows them to reveal their programming to one another, or arrival times cue testing examiners regarding programming. All research-related materials shall be retained by the researcher for at least five years from date of publication. Reasonable accommodation shall be made to other researchers for access to research documentation and data. Documentation of procedures shall include, but not be limited to, copies of subject instructions, test questions, testing technique, question sequence, description of circum-stances and facilities, raw data, and any tape recordings presented.

4.1.3 So far as possible, the only difference between programmed deceptive and programmed nondeceptive subjects should be their participation in the act to which deceptiqm occurs during the PDD testing.

4.1.4 Non-exploratory studies shall test a sufficient number of subjects to obtain a statistical power of 0.80 or higher using a 0.05 significance level. Studies that are exploratory in nature – that do not obtain this power level – shall be clearly identified as exploratory studies.

4.1.5 To the extent possible, when conducting validity and reliability studies, participants performing the testing and -evaluating the physiological data shall be unaware as to both the programming of the subjects and the base rates of deception. The degree of knowledge of the participants shall be detailed in the report.

4.1.6 All instrumentation shall be fully reported, including any modification of standard equipment. When using field instruments, researchers shall report the manufacturer, model types of recording channels, whether the channels are mechanically or electronically driven, and whether the instrumentation is computerized.

4.1.7 Statements of generalization shall be limited to that which the data, procedures, and statistical methodology can support.

4.1.8 A human subject research review shall be performed by a recognized independent entity for all studies involving the participation of subjects.

4.2 *Field Research:*

4.2.1 The process for selecting cases shall be thoroughly reported, including at least the source, method, exclusionary criteria, and subject population. With respect to subjects, the report shall clearly articulate the proportions of the sample that are suspects, witnesses, and' victims.

4.2.2 The qualifications of the polygraph testing and chart evaluating participants shall be identified in the report, including formal polygraph training, field experience, and any licensing or certification.

4.2.3 Researchers shall report the degree to which poly-graph chart evaluators were kept unaware with regard to extrapolygraphic information. Specifically, they shall report whether the polygraph chart evaluators were aware of base rates, case facts, the study hypothesis, subject verbal behavior, subject gestures, or other extrapolygraphic details. Moreover, researchers shall report whether examiners who participated in the research normally include any of these factors in their decisions during field testing.

4.2.4 All instrumentation shall be fully reported, including fay modification of standard equipment. When using field instruments, researchers shall report the manufacturer, model, types of recording channels, whether the channels are mechanically or electronically driven, and whether the instrumentation is computerized.

4.2.5 Statements of generalization shall be limited to those which the data, procedures, and statistical methodology can support. Departures from conventional field practice shall be documented in detail, with an explanation for the nonstandard procedures.

4.2.6 Polygraph chart evaluators shall be informed of the purpose and protocol of the study in advance, so that they are able to provide informed consent for their participation unless such knowledge would influence the performance of the chart evaluators. This requirement shall be satisfied orally and in writing. This standard shall not preclude the use of historical data. Researchers shall not change the purpose or procedures of the study without advising evaluators in advance, and allowing them to reconfirm their agreement to participate in the study. If evaluators withdraw from the study, this shall be reported anywhere the results of the study are published or presented.

**5. Validity**

5.1 *Evidentiary PDD Examinations* – An evidentiary PDD testing technique shall be considered sufficiently valid if the majority of three or more research articles meeting the minimum requirements set forth in this standard indicate that the average decision accuracy for deceptive and nondeceptive |cases is 90 % or greater.

5.1.1 Average accuracy shall be calculated using the following formula:

*AA* = *{{cG/dG) + (cI/dI)}/2 \**100 (1)

where:

*cG =* number of correct decisions with Guilty subjects,

*dG* = total number of conclusive decisions with Guilty subjects,

*cI* = number of correct decisions with Innocent subjects,

and

*dI =* total number of conclusive decisions with Innocent subjects.

5.1.2 The method must also produce conclusive decisions in at least 80 % of the cases. Decisions not considered conclusive are those labeled Incomplete, Inconclusive, Indefinite, No Opinion, Terminated, or others that are not opinions regarding the veracity of a subject's statements.

5.2 *Investigative PDD Examinations* – An investigative PDD testing method shall be considered sufficiently valid if the majority of three or more research articles meeting the minimum requirements set forth in this standard indicate that the average decision accuracy for deceptive and nondeceptive cases is 80 % or greater in the discrimination between deceptive and truthful cases.

5.2.1 Average accuracy shall be calculated using the following formula:

*AA = {(cG/cG) + (cI/dI)}/2 \**100 (2)

where:

*cG* = number of correct decisions with Guilty subjects,

*cG* = total number of conclusive decisions with Guilty subjects,

*cI =* number of correct decisions with Innocent subjects,

and

*dI* = total number of conclusive decisions with Innocent subjects.

5.2.2 The method must also produce conclusive decisions in at least 80 % of the cases. Decisions not considered conclusive are those labeled Incomplete, Inconclusive, Indefinite, No Opinion, Terminated, or others that are not opinions regarding the veracity of a subject's statements.

5.2.3 Investigative PDD examinations may use a "successive hurdles" approach to achieve the minimum validity set forth in this standard.

5.3 Other psychophysiological technology used for the purpose of verifying the veracity of statements made by individuals in the field, for either evidentiary or investigative applications, shall be required to comply with the same standards of validity and utility set forth above.

5.4 All polygraph accuracy studies published in peer-reviewed journals shall be considered adequate for estimating the validity and reliability of a polygraph testing and analysis technique.

5.5 Research failing to meet 5.4 shall be eligible for estimating the validity and reliability of a polygraph testing and analysis technique if the following conditions are satisfied:

5.5.1 The samples are representative of the population and purpose for which the technique is normally used.

5.5.2 In field research, the potential for case selection bias has been minimized or accounted for by the methodology.

5.5.3 The scoring method is cross-validated with a sample different from that used to develop the scoring method.

5.5.4 In field accuracy research, ground truth must be established by confessions or reliable forensic evidence. Trial outcomes, prosecutorial decisions, or eyewitness accounts are not sufficiently reliable criteria for this purpose.

5.5.5 The research effort results in a university-grade report.

5.6 There are acknowledged differences in schools of thought in polygraphy that have given rise to variations in techniques in the field. However, the underlying phenomena in polygraphy are sufficiently robust as to tolerate minor variations of procedures without jeopardizing decision accuracy. Therefore, a variant of a validated technique shall be considered sufficiently valid and shall not require separate research to support its validity unless:

5.6.1 The variant reduces the quality or quantity of data required in the validated technique for accurate decisionmaking.

5.6.2 The variant includes components already known to reduce decision accuracy (that is, unreliable scoring features, surprise questions, permitting examinee movements, etc.).

**6. Utility**

6.1 The proportion of results that are conclusive shal] be considered a measure of utility, and shall be calculated by dividing the number of results that are conclusive by the total number of observations. The utility value obtained by this method shall not be less than 0.80 for validated techniques. If a technique permits retesting when initial results are not conclusive, or when a "successive hurdles" approach is em-, ployed, the final result after all testing is completed shall be the prevailing decision, and that result shall be used in the computation of utility.

**7. Keywords**

7.1 field; forensic psychophysiology; laboratory; PDD; polygraph; psychophysiological detection of deception; rer search; standards; validation

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**Terminology**



**Standard Terminology Relating to Forensic Psychophysiology[[29]](#footnote-29)**

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**1. Scope**

1.1 This is a compilation of terms and corresponding definitions used in forensic psychophysiology. Legal or scientific terms that generally are understood or defined adequately in other readily available sources may not be included.

1.2 A definition is a single sentence with additional information included in notes. It is reviewed every five years, and the year of the last review or revision is appended.

1.3 Definitions identical to those published by another standards organization or ASTM committee are identified with the abbreviation of the name of the organization or the identifying document and ASTM committee; for example, ASME is the American Society of Mechanical Engineering.

1.4 Definitions of terms specific to a particular field are identified with an abbreviation.

**2. Significance and Use**

2.1 These terms have particular application to the scientific discipline of forensic psychophysiology. In addition, a hierarchy of sources of definitions are used in the development of this terminology. The hierarchy is as follows: Websters's New World Dictionary, Third College Edition; technical dictionaries; and the Compilation of ASTM Standard Definitions. The subcommittee developed a suitable definition after all of the sources in the hierarchy are found wanting.

**3. Terminology**

3.1 *Terms and Definitions:*

**Air Force modified general question test (AFMGQT),** n – test format with flexible question orderings and numbers of relevant questions.

Discussion – The AFMGQT can be used in single-issue, multiple facet, and multiple-issue PDD examinations. The AFMGQT uses relevant, comparison, sacrifice relevant and irrelevant questions.

**artifact,** *n* – a change in a PDD tracing that is not arributable to a review test question, stimulus, recovery, or homeostasis.

**cardiovascular tracing,** *n* – a display of physiological patterns of the subject's relative blood pressure and pulse rate.

Discussion – The cardiograph component records this activity.

**comparison question,** *n* – type of question, the physiological responses from which are compared to those generated by the relevant questions.

**counterintelligence-scope polygraph (CSP),** *n* – screening examination administered by the Federal Government on individuals with sensitive security clearances to detect and deter espionage, security breaches, sabotage, or other acts against the government.

Discussion – Sometimes referred to as a *loyalty* examination.

**Daubert v. Merrell Dow Pharmaceuticals, Inc.,** *n* – although not a PDD case, the Daubert case set aside the landmark Frye rule's "general acceptability" provisions in favor of the Federal Rules of Evidence.

Discussion – This paved the way for the admissibility of PDD evidence in most jurisdictions.[[30]](#footnote-30)

**deception indicated (DI),** *n* – a conventional term for a PDD outcome.

Discussion – A decision of DI means that the physiological data are stable and interpretable and that the evaluation criteria used by the examiner concluded that the examinee was not being completely truthful to the relevant issue. DI corresponds to the term *significant physiological responses (SPR).*

**deception test,** *n* – a family of PDD examinations where direct questions are posed to the examinee during physiological recording regarding the examinee's involvement in what is covered in the relevant question.

Discussion – Unlike recognition tests, both truthful and deceptive examinees are aware of which questions are relevant, and direct participation, not just recognition, is. tested. Deception tests include PDD comparison question tests and PDD relevant/irrelevant tests.

**differential salience,** *n* – an expression that characterizes the tendency for the magnitude of physiological responses to reveal the perceived psychological significance an individual attaches to specific stimuli which, under controlled conditions, permits a reliable inference of either recognition or deception by the comparison of response magnitudes to all stimuli within a defined grouping.

**disclosure examinations over sexual history,** *n* – a clinical polygraph examination intended to explore pre-conviction "lifetime" sexual behavioral histories and activities which include the disclosure of additional victims, sexual education sources, victimization, exposure and utilization of pornography, the onset of masturbation, paraphilias, sexual deviance, and therapeutic issues.

Discussion – It is a utility-designed multiple-issue polygraph test, subject to the successive hurdles decision approach.

**electrodermal tracing,** *n* – the display of physiological patterns of either skin resistance or skin conductance obtained through exosomatic recording with a galVanograph component.

**evidentiary PDD examination,** *n* – test procedures that are designed to meet minimum standards for admissibility in court or administrative hearings.

Discussion – Among the necessary components are: electronic recording of the session, use of a PDD technique for which the preponderance of the published peer-reviewed research shows an average accuracy of 90 % or better; individually validated scoring rules, and optimized decision rules. Use of a movement sensor is also recommended.

**false negative,** *n* – misclassification of a deceptive person as truthful.

**false positive,** *n* – misclassification of a truthful person as deceptive

**forensic psychophysiology,** *n* – the scientific discipline dealing with the relationship and applications of PDD tests within the legal system.

Discussion – It encompasses the academic discipline that provides the student, the practitioner, and the researcher with the theoretical and applied psychological, physiological, and psychophysiological fundamentals for a thorough understanding of PDD tests and the skills and qualifications for conducting PDD examinations. The modifier "forensic" delineates and delimits this discipline from the broader discipline of psychophysiology.

**format,** *n* – the established sequence or rules for ordering questions for presentation during testing.

**homeostasis,** *n* – a complex interactive regulatory system by which the body strives to maintain a state of internal equilibrium.

**inconclusive,** *n* – a PDD examination finding that indicates the testing phase was completed and the data did not contain sufficient or consistent diagnostic information on which to base a definitive decision concerning the truthfulness of the examinee.

**investigative PDD procedures,** *n* – routine PDD examinations that are used to explore wider issues than evidentiary PDD examinations and are not intended to meet exacting evidentiary standards.

Discussion – Investigative procedures may include applicant testing, PCSOT, and multiple-facet criminal testing.

**irrelevant question,** *n* – An irrelevant question is designed to be a non-emotion provoking question (also referred to as *norms* or *neutral questions).*

**modified general question test (MGQT),** *n –* test format ' patterned after the Reid test and modified by the U.S. military. It contains relevant, irrelevant, and comparison questions.

Discussion – The MGQT is widely used in the field and has a body of validity research.

**monitoring examination,** *n* – A clinical polygraph examination specifically intended to uncover whether the offender has committed any illegal sexual act(s) with a child or any other sexual act forbidden by law during a sex offender's period of supervision.

Discussion – The requested test timeframe can be since the imposi-- tion of the offender's paroleor probation, since his last test, or since any other period designated: by supervision officers. This is exclusively a single-issue polygraph test.

**multiple-facet polygraph test,** *n* – a test in which the relevant questions cover the same event, though the questions may cover different aspects of that event.

Discussion – Because the relevant questions all relate to the same, event, in field conditions the examinee would typically be entirely either truthful or deceptive to all questions, though this is not a condition of the multiple-facet polygraph test. One multiple-facet PDD format is the Reid test.

**multiple-issue polygraph test,** « – a test in which the relevant questions cover two or more areas that are partially or completely independent from one another.

Discussion – Forms of multiple-issue polygraph testing include PCSOT, applicant testing, and counterintelligence screening.

**no deception indicated (NDI),** *n* – a conventional term for a PDD outcome.

Discussion – A decision of NDI means that the physiological data are stable and interpretable and that the evaluation criteria used by the examiner concluded that the examinee was being completely truthful to the relevant issue. NDI corresponds to the term *no significant physiological responses (NSR).*

**noise,** *n* – in PDD, it is the random variation in the recorded data that has no diagnostic value, and when excessive, may take the identification of diagnostic patterns more difficult.

**no opinion (NO),** n – a PDD examination finding which indicates that no decision could be made because the testing protocol was incomplete, distorted, or interfered with in such a way as to prevent proper evaluation.

Discussion – This lack of completion Could be due to the failure of the examinee to cooperate, premature termination of the examination, or any other event which prevents the successful completion of testing or the proper collection of the physiological data.

**no significant responses (NSR),** *n* – results of a screening examination which denote that the screening phase of testing was completed, the examiner deemed the physiological data interpretable, and there were no consistent and significant responses to any of the relevant questions. **optimal decision rules,** *n* – those that restrict the types and proportion of error to those that can be tolerated by the consumers of the polygraph results.

Discussion – Because it is not possible to simultaneously reduce errors of one type (that is, false positives) without increasing errors of the other type, optimal decision rules are central to a judicious and rational process by which the payoff to the consumers of the polygraph decision is greatest and the cost associated with errors is minimized. Optimal decision rules for investigative and evidentiary pplygraphy may be different: from one another.

**peak of tension (POT),** *n* – a family of testing procedures, including known solution, searching (probing), and acquaintance tests.

Discussion – There is a body of validation research for the known solution POT.

**PDD examination,** *n* – a process that encompasses all activities that take place between a PDD examiner and an examinee during a specific series of interactions which includes the pretest interview, the collection of physiological data from the examinee while presenting a series of tests, the test data analysis phase and a conclusion made.

**PDD examiner,** *n* – someone who has successfully completed formal education and accredited training in conducting PDD examinations and, if appropriate, is certified or licensed by their agency or state to conduct such examinations.

**phasic response,** *n* – a response, typically of short duration, where the level of physiological arousal returns to its pre-arousal state.

**physiology,** *n* – the branch of biology dealing with the functions and vital processes of living organisms or their parts and organs.

**polygraph examiner,** *n* – a term used synonymously with PDD examiner.

Discussion – In the evolution of terminology within this discipline, the term *polygraph examiners* replaced the antiquated appellation " Lie Detector Operator" (see PDD examiner).

**polygraph instrument,** *n* – a diagnostic instrument used during a PDD examination, which is capable of simultaneously monitoring, recording, and measuring at a minimum, respiratory, electrodermal, and cardiovascular activity as a response to auditory or visual stimuli.

**polygraphy,** *n* **–** see **psychophysiological detection of deception (PDD).**

**post-conviction sex offender testing (PCSOT),** *n* – see *clinical polygraph examination.*

*disclosure examination, n* – a form of PCSOT which involves an in-depth look at the entire life cycle of an offender and his or her sexual behaviors up to the date of criminal conviction.

Discussion – Sometimes referred to as a *sexual history examination.*

**pretest interview,** *n* – the earliest portion of the PDD examination process during which the examinee and examiner discuss the test, test procedure, and the details of the test issues.

Discussion – The pretest interview also serves to prepare the examinee for the testing.

**psychology,** *n* – the science dealing with the mind and with the mental and emotional processes. **psychophysiological detection of deception (PDD),** *n* – the academic discipline that provides the student, the practitioner, and the researcher with the theoretical and applied psychological, physiological, and psychophysiological fundamentals for a thorough understanding of PDD tests and the skills and qualifications for conducting PDD examinations (see **polygraphy).**

**psychophysiological veracity (PV) examination,** *n* **–** see **psychophysiological detection of deception (PDD).**

**psychophysiology,** *n* – the study of interactions between mental and physiological processes.

**purposeful non-cooperation (PNC),** *n* – a decision of PNC indicates that the polygraph examiner detected the examinee engaging in apparently motivated and repeated behavior contrary to the examiner's instructions that interferes with the protocol or physiological recordings.

**quality control,** *n* – the process in which all relevant PDD documents and materials are reviewed by an independent and qualified person to assess whether the testing examiner selected and followed proper methodologies and procedures in the preparation, conduct, analysis, and reporting of a PDD examination.

**recognition test,** *n* – a family of procedures that are based exclusively on responses that are elicited by the examinee's identification of crime-related stimuli that have been imbedded among irrelevant but similar stimuli.

Discussion – Among the more common recognition tests are: the POT, concealed information test, reaction time tests, saccadic eye movement test, and evoked potentials P300 odd-ball paradigm tests. The acquaintance (or stimulus) test could also be considered a recognition test. Recognition tests require that the test developer know the crime-related information so that it can be determined whether the examinee also knows this information. This limitation restricts the usefulness of recognition tests to only those circumstances. In contrast to deception tests, recognition tests are not designed to test for involvement in a crime, but only whether the examinee is familiar with the crime details.

**relevant question,** *n* – a question that pertains directly to the matter under investigation or to the issue(s) for which the examinee is being tested.

**respiratory tracing,** *n* – a display of physiological patterns of the subject's breathing activity as recorded by the pneumograph component.

**response,** *n* – a physiological change that occurs following, and is attributable to, the presentation of an applied stimulus (for example, reviewed test question).

**screening examination,** *n* – a PDD examination in which the relevant issues are not related to a known event, and during which more than one issue can be addressed within the same test series.

Discussion – Examples include applicant and counterintelligence screening as well as some forms of PCSOT.

**series,** *n* – a collection of tests in which a common list of questions was used.

**significant responses (SR),** *n* – results of a screening examination which denote that the screening phase of testing was completed, the examiner deemed the physiological data interpretable, and there were consistent and significant responses to one or more relevant questions.

**single-issue polygraph test,** *n* – a PDD test in which the relevant questions cover the exact same issue.

Discussion – To be a single-issue polygraph test, the examinee must be able to answer the relevant questions either all truthfully, or all deceptively. An example would be the single-issue zone comparison test.

**spot score rule,** *n* – a decision rule in which the sum of scores for an individual relevant question is considered in the formation of the final decision in a polygraph case.

**successive hurdles,** *n* – -a process which entails a series of tests or procedures and during which only those persons with a positive result on a step proceed to the next step in the series.

Discussion – In polygraphy, successive hurdles most often applies to screening examinations which begin with a multiple-issue test followed by focused testing on the topic(s) the examinee reacted to on the multiple-issue test. The value of the successive hurdles approach is that it maximizes both accuracy and utility while limiting resource expenditures.

**successive hurdles approach,** *n* – used in multiple-issue testing, it is a process in which multiple broad areas are covered together in a single PDD test, followed by tests of only those who have positive results with successively focused PDD tests.

Discussion – The benefit of the successive hurdles process is the efficient use of testing resources to deliver accuracy that would normally only be obtainable with several independent single-issue tests.

**technique,** *n-* – an examination protocol which includes a pretest interview, format, testing requirements, test data analysis, and may include posttest procedures.

**test,** «r – the single running of a list of test questions during physiological recording of the examinee.

**test data analysis,** *n* – the systematic evaluation of the physiological recordings, and for most techniques, entails the assignment of numbers according to patterns of responses to arrive at a decision regarding the examinee's truthfulness or concealed knowledge.

**tonic response,** *n* – shifting of tonic level, typically in response to changing conditions, as opposed to a sudden stimulus.

Discussion – Tonic responses take several seconds or minutes to occur, unlike phasic responses which tend to be much more rapid. Among the more common PDD methods, the only tests where tonic responses are used as diagnostic information are in the POT tests, where a change in the trend of tonic activity can signal that the examinee is aware that the critical item in the series has passed.

**true negative,** *n* – correct classification of a truthful person as truthful.

**true positive,** *n* – correct classification of a deceptive person as, deceptive.

**4. Keywords**

4.1 definitions; forensic psychophysiology; terminology

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Current edition approved May 1, 2011. Published June 2011. Originally approved in 2002. Last previous edition approved in 2005 as E2065 - 05. DOl: 10.1520/E2065-11. [↑](#footnote-ref-1)
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Current edition approved Feb. 1, 2005. Published March 2005. Originally approved in 1998. Last previous edition approved in 2002 as E2000-02. DOI: 10.1520/E2000-05. [↑](#footnote-ref-3)
4. 1 This guide is under the jurisdiction of ASTM Committee E52 on Forensic Psychophysiology and is the direct responsibility of Subcommittee E52.04 on Examiner Education and Training.

Current edition approved Dec. 1, 2006. Published February 2007. Originally approved in 2000. Last previous edition approved in 2000 as E2064-00. DOI: 10.1520/E2064-00R06. [↑](#footnote-ref-4)
5. 2 *Annual Book of ASTM Standards,* Vol 14.02.

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Current edition approved May 1, 2007. Published June 2007. Originally approved in 2001. Last previous edition approved in 2001 as E2162-01. DOI: 10.1520/E2162-07. [↑](#footnote-ref-6)
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Current edition approved Dec. 1, 2006. Published January 2007. Originally approved in 2001. Last previous edition approved in 2001 as E2163-01El. DOI: 10.1520/E2163-06. [↑](#footnote-ref-8)
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Current edition approved March 1, 2011. Published March 2011. Originally approved in 2000. Last previous edition approved in 2005 as E2063-05. DOI: 10.1520/E2063-05R11. [↑](#footnote-ref-10)
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Current edition approved Dec. 1, 2009. Published January 2010. Originally approved in 2005. Last previous edition approved in 2005 as E2439 - 05. DOI: 10.1520/E2439-09. [↑](#footnote-ref-12)
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Current edition approved March 1, 2009. Published March 2009. Originally approved in 2002. Last previous edition approved in 2002 as E2229-02. DOI: 10.1520/E2229-09. [↑](#footnote-ref-14)
15. This guide is under the jurisdiction of ASTM Committee E52 on Forensic Psychophysiology and is the direct responsibility of Subcommittee E52.05 on Psychophysiological Detection of Deception (PDD).

Current edition approved Oct. 15, 2006. Published January 2007. Originally approved in 2000. Last previous edition approved in 2005 as E2O80-05. DOI: 10.1520/E2080-06. [↑](#footnote-ref-15)
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Current edition approved Oct. 1, 2011. Published November 2011. Originally approved in 2004. Last previous edition approved in 2004 as E2386-04 (2011). DOI: 10.1520/E2386-04R11. [↑](#footnote-ref-17)
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Current edition approved April 1, 2011. Published May 2011. Originally approved in 2000. Last previous edition approved in 2010 as E2062- 10a. DOI: 10.1520/E2062-11. [↑](#footnote-ref-19)
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Current edition approved Oct. 1, 2011. Published November 2011. Originally approved in 2004. Last previous edition approved in 2004 as E2324-04 (2011). DOI: 10.1520/E2324-04R11. [↑](#footnote-ref-21)
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23. Press, S.J., *Bayesian Statistics: Principles, Models, and Applications,* John Wiley & Sons: New York, 1989. [↑](#footnote-ref-23)
24. Marin, J., "He said / She said: Polygraph evidence in court" *Polygraph,* Vol 29, No. 4, 2000, pp. 299-304. [↑](#footnote-ref-24)
25. This practice is under the jurisdiction of ASTM Committee E52 on Forensic Psychophysiology and is the direct responsibility of Subcommittee E52.03 on Quality Control.

Current edition approved Sept. 1, 2010. Published October 2010. Originally approved in 1999. Last previous edition approved in 2004 as E2031 -99(2004). DOI: 10.1520/E2031-99R10. [↑](#footnote-ref-25)
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Current edition approved March 1, 2011. Published March 2011. Originally approved in 1998. Last previous edition approved in 2005 as E1954-05. DOI: 10.1520/E1954-05R11. [↑](#footnote-ref-27)
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Current edition approved March 1, 2012. Published March 2012. Originally approved in 1999. Last previous edition approved in 2011 as E2035- 11. DOl: 10.1520/E2035-12. [↑](#footnote-ref-29)
30. For more information, see Daubert v. Merrell Dow Pharmaceuticals, Inc. (1992), 509 U.S. 579, 125 1. Ed 2d 469; United States v. Frye 54 App D.C. 46, 293 F 1013. [↑](#footnote-ref-30)