



**The International Society
For Clinical Densitometry**

Certified Bone DensitometryTechnologist CBDT®

Candidate Handbook and Application

**Computer-based exams at PSI locations worldwide Paper and Pencil
exams at designated ISCD pre-selected sites**



Certified Bone Densitometry Technologist Certification Program

The Certified Bone Densitometry Technologist credentialing program is governed by the ISCD Certification Council

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Certification Council Mission

The ISCD Certification Council serves to establish skeletal health assessment skills in bone densitometry by promoting best practice standards, competent evaluation, and continued professional development in bone densitometry. The certification process recognizes attainment of the highest standard of achievement and professional excellence in the field of bone densitometry for clinicians and technologists.

Introduction

Congratulations on your decision to earn an International Society for Clinical Densitometry (ISCD) CBDT® Credential. We commend your commitment to your career and the bone density profession.

This guide includes information about:

- Eligibility qualification
- Guidelines for applying for and scheduling the examination
- What to expect at the test center
- What to expect after completing the examination

About the ISCD

The International Society for Clinical Densitometry is a multidisciplinary, nonprofit organization that provides a central resource for a number of scientific disciplines with an interest in the assessment of skeletal health. The Society was founded in June 1993 as the result of a meeting of a group who recognized the need to bring disciplines together for this single purpose. The Society was the first of its kind worldwide.

To further enhance the care and diagnosis of metabolic bone disease, the Society formed a Certification Council to develop and administer a certification program.

The CBDT® Credential

The Certified Bone Densitometry Technologist (CBDT®), accredited by the National Commission for Certifying Agencies (NCCA), is a professional certification developed to recognize technologists who have demonstrated entry-level knowledge and skill to perform competent central bone density scans for various settings and professional disciplines such as clinic/imaging centers, hospitals, physician offices, and research centers throughout the world. The (CBDT®) credential is a prestigious indicator to consumers, health care professionals, employers, and the public at large that the technologist has proficiency in the bone densitometry field.

CBDT® has been developed in response to state regulatory agencies and third-party payors requiring certification programs to be accredited before they will accept them as meeting their requirements. The CBDT® is an accredited program having met NCCA standards. Successful candidates can use the designation CBDT® after their names. Successful completion of the CBDT® examination, qualifies candidates to receive professional designation, which is valid for five years.

ISCD Exam Development Process:

ISCD certification exams are valid and reliable instruments that measure the competency of minimally qualified potential certificants against a codified and relevant body of ISCD competencies (also referred to as knowledge, skills and abilities). The subject matter represented by these competencies is further segmented across specific roles and disciplines throughout the DXA profession as a whole by the experience necessary for successful job performance, as exemplified by the respective ISCD certification.

About ISCD Exam Development Committees

ISCD Exam Development Sub-Committees are composed of experienced, credential-specific subject matter experts, representing ISCD leaders, medical professionals, and relevant industry members. Exam development committees are responsible for the specific oversight and performance of their respective credential's certification examination. Exam development committees' responsibilities include recurring review of content relevancy, both item-level and examination-level performance data and expertise with respect to establishing the cut score for their respective certification examinations.

Job Analysis

The job analysis process ensures quality control of the relevancy, currency and validity of the competencies assessed by each certification examination. ISCD plans for and conducts comprehensive job analyses according to the rate and amount of changes taking place within a given certification examination, which is every 3 to 5 years. Consistent with best practices, the task of job analysis assesses the criticality of current practices, skills, tasks, and responsibilities, with respect to the importance and frequency of job performance. The results of the job analysis influence to what extent the competencies are revised for each certification examination.

Examination Blueprints and Specifications

The job analysis serves as the foundation for the examination blueprint. First, the individual competencies are grouped into domains that represent specific and similar areas of content. Next, the percentage weighing of each content domain is determined, in part, through the individual competency statement criticality scores, considered collectively, within each domain. This weighting of domains relative to one another allows the ISCD to determine how much, or to what extent, each domain is assessed (both by the number and difficulty of test items), relative to the other domains. For example, domains with competencies with higher criticality scores (that is more important and/or more frequently performed) typically represent a larger percentage of test items than those domains with lower criticality scores for their respective competencies.

The examination specifications are typically established or revised at the same time as the development of the examination blueprint. The specifications usually include the total number of test items (both scored and non-scored), test item type(s), such as multiple-choice, total test duration, and scoring methodology. Passing Grade established by Cut Score Study conducted by ISCD and PSI the test delivery vendor initiated every three to five years to identify and review the CBDT®. Scores reported are scaled scores. Candidates receive scores as pass/fail with an analysis provided for those who fail the exam.

Individual scores are recalculated and diagnostics for failing candidates are generated. The scores and diagnostics are forwarded to the certification program manager and candidates are notified of the results.

Value of Certification

The ISCD establishes professional standards of excellence, which are earned through a combination of education, experience, and performance on certification exams. Following initial certification, credentials must be maintained through rigorous continuing education, ensuring the highest level of competency in patient care. Facilities that employ credentialed ISCD professionals can expect the highest level of competency. The ability to adhere to quality and standards is demonstrated through attaining certification. Certified professionals are leaders in DXA community, displaying a commitment to the industry, their colleagues, and their patients.

About Certification

Certification is a means for showing that a certified professional possess the knowledge and skills necessary for optimal performance of his or her job. Through credentialing, employers, peers, and the public are reassured the certified individual is both competent and well-informed in the daily and accurate administration of his or her professional duties. Certain employers require that individuals performing or interpreting DXA scans be certified to ensure high professional standards and quality patient care. Whatever the reason, credentialing makes the technologist a more attractive candidate for gainful employment and career advancement.

Nondiscrimination Policy

ISCD adheres to principles of fairness and due process and endorses the principles of equal opportunity. In administering the certification programs, ISCD does not discriminate or deny opportunity to anyone on the basis of race, color, creed, age, gender, national origin, religion, disability, marital status, parental status, ancestry, sexual orientation, military discharge status, source of income, or any other status protected by applicable law. All candidates for certification will be judged solely on the published eligibility criteria determined by the ISCD Certification Council. The ISCD examinations are offered to candidates in environments that meet the standards established by the Americans with Disabilities Act (ADA).

Certified Bone Densitometry Technologist (CBDT®)

Certified Bone Densitometry Technologist (CBDT®) is accredited by the National Commission for Certifying Agencies (NCCA) professional designation awarded to technologists who meet specified knowledge requirements measured through a standardized testing process for the interpretation of bone densitometry. Successful candidates can use the CBDT® designation after their names. This is a five-year certification. The CBDT® Exam is offered at computer-based PSI locations worldwide and paper and pencil at designated ISCD pre-selected sites. The exam is comprised of 150 questions. Participants have three and a half hours to complete the exam.

CBDT® Eligibility Requirements

Certification is open to healthcare professionals who perform human bone densitometry scans.

Candidates must meet one of the following eligibility requirements:

- Current CBDT®, CDT®, or ARRT(BD) in good standing, and are involved in human DXA scanning
 - The CDT® credential was awarded by the International Society for Clinical Densitometry (ISCD). This was earned by passing the ISCD CDT® Examination. In order to be considered in "good standing" the technologist must maintain their certification through the ISCD by providing documentation of the completion of the required continuing education credits.
 - A person is certified by American Registry of Radiologic Technologists (ARRT) after meeting educational preparation standards, complying with ethics standards, and passing a certification exam. Only technologists who are currently registered— have renewed within the past year — may designate themselves as ARRT Registered Technologists and use the initials "R.T." after their names. BD is a post-primary certification in Bone Densitometry. Candidates for post-primary certification must be registered by ARRT in the appropriate supporting discipline to be eligible.

OR

- Hold an Allied Health Degree, have performed at least 100 central DXA patient scans at two skeletal sites (hip, spine or forearm), and have a minimum of three months experience performing bone density scans. This will need to be attested to by a supervisor.

OR

- Document a minimum of 12 credit hours within 12 months of applying to sit for the exam, in bone density, osteoporosis, metabolic bone disease, have performed at least 100 central DXA patient scans at two skeletal sites (hip, spine or forearm), and have a minimum of three months experience performing bone density scans. This will need to be attested to by a supervisor.

Taking the Certification examination is voluntary. ISCD strictly adheres to the eligibility requirements for certification. It is the responsibility of the candidate to comply with all procedures and deadlines to establish eligibility for the examination. For questions about eligibility, please contact the ISCD at 860-259-1000 or certification@iscd.org.

Eligibility Rationale

Applicants are required to pass the written CBDT examination to demonstrate that their experience and education have resulted in a sufficient understanding of the knowledge, skills, and abilities required to provide safe and competent evidence-based densitometry services as determined by the job analysis study and represented on the examination content outline. Because there is no comparable means for assessing competence outside of the ISCD examinations, the ISCD does not grandfather candidates and requires everyone earning an ISCD credential to have successfully fulfilled all published criteria, including passing of the examination.

Each eligibility requirement has been established to ensure that individuals certified by ISCD have an acceptable level of knowledge and skill needed to demonstrate bone densitometry competency and a commitment to client and patient safety in varied settings.

Each eligibility requirement has been selected to support the purpose of the credential:

Professional Certification: Candidates have demonstrated required knowledge and skill, met bone densitometry standards by successfully completing the assessment process and are maintaining the credential through continued competence.

Education: A candidate with an Allied Health Degree is prepared to work in health care teams to make the health care system function by providing a range of diagnostic, technical, therapeutic and direct patient care and support services.

Continuing Education: The continuing education requirement ensures that applicants have education that is specific to Musculoskeletal Health. The requirement provides assurance that the applicant's knowledge is up-to-date and documented with certificate(s) of attendance detailing twelve credit hours sufficient to represent a basic understanding of bone densitometry.

Experience: Minimal supervised practice requirements have been established for certification eligibility to address the depth and breadth of knowledge application and skill required to achieve competent bone densitometry practice. The required experience confirms that applicants have hands-on, practical field experience directly related to bone densitometry scans. This experience supports and validates the application of skills learned in the training environment.

Examination: Applicants are required to pass the written CBDT examination to demonstrate that their experience and education have resulted in a sufficient understanding of the knowledge, skills, and abilities required to provide safe and competent evidence-based densitometry services as determined by the job analysis study and represented on the examination content outline. Because there is no comparable means for assessing competence outside of the ISCD examinations, the ISCD does not grandfather candidates and requires everyone earning an ISCD credential to have successfully fulfilled all published criteria, including passing of the examination.

Ethics: ISCD certificants and candidates have the obligation to: maintain high standards of integrity and professional conduct; accept responsibility for their actions; continually seek to enhance their professional capabilities; practice with fairness and honesty; and encourage others to act in a professional manner, consistent with the certification standards and responsibilities set forth in the Code of Ethics. All candidates and certificants are required to agree and adhere to an enforceable Code of Ethics as a condition of certification.

Applying For The Exam ----- Submitting a Paper Application

- Application must be submitted, and all fees paid to be eligible for the CBDT® exam. Incomplete applications will be returned unprocessed. The examination fee must accompany the CBDT® application.
- Ensure the name on the application matches the name on the identification (ID) to be used for admission to the test center.
- Choose whether you will test at a PSI testing center, or one of our scheduled paper & pencil test locations.

- Sign and date the attestation, candidate application statement, candidate confidentiality agreement, and code of ethics.
- Made copies for your records
- Mail or fax your completed application to ISCD

Applying For The Exam -----Online Application

- Please visit <https://my.iscd.org/Certify/Certification/CBDT>
- Application must be submitted, and all fees paid to be eligible for the CBDT® exam.
- Ensure the name on the application matches the name on the identification (ID) to be used for admission to the test center.
- Choose whether you will test at a PSI testing center, or one of our scheduled paper & pencil test locations.
- Sign, date and upload the candidate attestation.
- Read and acknowledge the candidate application statement, candidate confidentiality agreement, and code of ethics.

CBDT® Examination Fees

Professional or Full Member	\$275 USD
Community Member or Non-Member	\$425 USD

Eligibility Verification

Only completed certification applications will be accepted. Incomplete applications will be returned to the applicant who may address the deficiencies and resubmit the application for review, adhering to established application deadlines. Verification of each eligibility requirement will be conducted by certification staff as follows:

Allied Health Degree: Applicants will provide the graduation date, university and location, and conferred degree on the application. Applicants must attest to this information via a signature. Certification staff verify the completion of this information on the application.

Professional Certification: Primary source verification by certification staff shall ensure certificants have demonstrated and met the standards by successfully completing the assessment process and are retaining the credential through continued competence.

DXA Experience: Applicants must have their direct supervisor attest to the hands-on experience of 100 central DXA patient scans at 2 skeletal sites. This attestation must be completed and submitted on the initial certification application. Certification staff verify the completion of this information on the application.

Experience (3 months minimum): Applicants must have their direct supervisor attest to the hands-on experience in the operation of a DXA machine, patient interaction and patient safety. This attestation must be completed and submitted on the initial certification application.

Continuing Education: Applicants must provide certificate(s) of attendance detailing twelve credit hours in the areas of Musculoskeletal Health with the initial application. Certification staff verify the inclusion and relevancy of the certificate(s) of attendance.

* Note that ISCD reserves the right to verify any information provided on the application and/or as part of the application process.

Independent Testing Agency

PSI has been contracted by ISCD to help administer ISCD's certification in the United States and internationally. PSI delivers millions of high-stakes tests every year across the globe for clients in the licensure, certification, academic admissions, regulatory, and government testing service markets. PSI centers utilize a patent-winning design, which was created specifically for high-stakes testing and offers a carefully controlled, consistent testing environment.

Scheduling The PSI Test Center Examination

After the application is approved, and you choose to take the computer-based test at a PSI location, PSI will send the candidate an Authorization to Test (ATT) letter by email from no-reply@psiexams for those candidates with a valid email address. Candidates with an approved application will receive the ATT letter within five (5) business days. The ATT letter contains an authorization number, the eligibility period for testing, and instructions for scheduling their appointment.

The testing appointment should be scheduled soon after receiving the ATT letter. Scheduling an appointment early in the eligibility period increases the likelihood that the candidate can sit for the exam at his or her optimal date and time. Space at the PSI testing centers is limited, and the availability of a testing "seat" is not guaranteed. Therefore, candidates who schedule their exams in the latter part of the eligibility period run the risk of not sitting for the exam and having to pay a transfer fee to the next eligibility period.

For fast and easy scheduling, PSI recommends that candidates register for their exams using the internet. Candidates register online by accessing PSI's registration website at <https://client.psiexams.com/>. Internet registration is available 24 hours a day.

If you chose to schedule your exam by telephone, please call +1(833) 333-4755 choose option "2", this toll-free number is answered from 7am to 9pm (Central Time) Monday through Thursday, 7am to 7pm on Friday and 8:30am to 5pm on Saturday.

******* CANCELLING AN EXAMINATION APPOINTMENT** – If you need to cancel or reschedule your examination appointment, you **MUST** do so at least 2 days before the scheduled examination by 4pm. You **MUST** contact PSI to cancel or reschedule. This can be done via their website or by phone. ****A voice mail message is not an acceptable form of cancellation.**

******* MISSED APPOINTMENT OR LATE CANCELLATION** – Your registration will be invalid, and you will not be able to take the exam as scheduled, if you:

- Do not cancel your appointment 2 days before the scheduled examination date
- Do not appear for your exam appointment
- Arrive after the examination start time

SPECIAL EXAMINATION ARRANGEMENTS

All examination centers are equipped to provide access in accordance with the Americans with Disabilities Act (ADA) of 1990, and every reasonable accommodation will be made in meeting a candidate's needs. Applicants with disabilities or those who would otherwise have difficulty taking the examination must get pre-approved by the sponsor. Accommodations are ways of adapting an exam experience to meet the needs of people who have disabilities that may impair their exam performance. Accommodations can't change the number of questions or the content an exam covers. And they don't guarantee improved performance, a passing score, or any specific outcome. The ISCD complies with the ADA. We will provide appropriate accommodations if you demonstrate both that:

- You have an ADA-qualifying disability.
- Your disability results in substantial functional limitations that affect your daily life activities as compared to most people.

In most cases, you'll need to submit supporting documentation and a personal statement describing your disability. Approved accommodations might include additional time to complete the exam, a separate testing room, or access to snacks if you have diabetes. You won't need to request accommodations for comfort items, such as an inhaler, crutches, or eye drops. Accommodations must be appropriate to the task and setting. Special arrangements will be made for these candidates provided that an appropriate request for accommodation is submitted to ISCD with the ISCD application form.

EXAMINATION SITE CLOSING FOR EMERGENCY

If severe weather or another emergency forces the closure of an examination site on a scheduled examination date, your examination will be rescheduled. PSI personnel will attempt to contact you in this situation. However, you may check the status of your examination schedule by calling +1(833) 333-4755, choose option "2". Every effort will be made to reschedule your examination at a convenient time as soon as possible.

REPORTING TO THE EXAMINATION SITE

On the day of the examination, you should arrive 30 minutes before your appointment time. This extra time is for sign-in, identification, and familiarizing you with the examination process. If you arrive late, you may not be admitted to the examination site.

REQUIRED IDENTIFICATION

Candidates need to provide one (1) valid, unexpired Government-issued photo ID that contains a signature.

- State issued driver's license
- State issued identification card
- Government Issued Passport
- Government Issued Military Identification Card
- Government Issued Alien Registration Card

SECURITY PROCEDURES

You will be provided a soft locker to store your wallet and/or keys with you in the testing room. You will not have access to these items until after the examination is completed. The following items are not permitted in the examination room:

- All personal electronic devices, except those that are a medical necessity
- Children, guests, cellular telephones, recording devices, cameras, pagers, purses, notebooks, notebook computers, unauthorized reference or reading material, music players, calculators, or briefcases
- Personal items including watches, backpacks, pens, pencils or other writing devices, food, drinks, and good luck items
- Hats, baseball caps, or visors (with the exception of religious apparel), coats, shawls, hooded clothing, heavy jackets or overcoats.

The following security procedures will apply during the examination:

- NO conversing or any other form of communication among candidates is permitted once you enter the examination area
- No smoking, eating, or drinking will be allowed at the examination site
- You may not exit the building during the examination
- NO documents or notes of any kind may be removed from the test center

Paper & Pencil Examinations

The ISCD will have paper & pencil examination offered at certain pre-determined locations in the United States each year. Once you have been approved by the ISCD, you will receive an email confirmation from the ISCD certification team. Your eligibility is only valid for the location you have pre-selected.

******* CANCELLING AN EXAMINATION APPOINTMENT** – You may cancel or reschedule an examination appointment in writing 2 days before the scheduled exam. For cancellation and transfer fees, please contact the ISCD Certification Department.

******* MISSED APPOINTMENT OR LATE CANCELLATION** – Your registration will be invalid, and you will not be able to take the exam as scheduled, if you:

- Do not cancel your appointment 2 days before the scheduled examination date
- Do not appear for your exam appointment
- Arrive after the examination start time

EXAMINATION SITE CLOSING OR CANCELLATION

ISCD reserves the right to cancel the exam, change dates and/or exam location. If a paper & pencil exam is cancelled, all fees will be refunded unless the exam candidate elects to transfer to another paper & pencil location, or a PSI test center. Candidates will be notified of any changes as soon as possible.

REPORTING TO THE EXAMINATION SITE

On the day of the examination, you should arrive 30 minutes before your appointment time. This extra time is for sign-in, identification, and familiarizing you with the examination process. If you arrive late, you may not be admitted to the examination site.

REQUIRED IDENTIFICATION

Candidates need to provide one (1) valid, unexpired Government-issued photo ID that contains a signature.

- State issued driver's license
- State issued identification card
- Government Issued Passport
- Government Issued Military Identification Card
- Government Issued Alien Registration Card

SECURITY PROCEDURES

You will not have access to the items below until after the examination is completed. The following items are not permitted in the examination area:

- All personal electronic devices, except those that are a medical necessity
- Children, guests, cellular telephones, recording devices, cameras, pagers, purses, notebooks, notebook computers, unauthorized reference or reading material, music players, calculators, or briefcases
- Personal items including watches, backpacks, pens, pencils or other writing devices, food, drinks, and good luck items
- Hats, baseball caps, or visors (with the exception of religious apparel), coats, shawls, hooded clothing, heavy jackets or overcoats.

The following security procedures will apply during the examination:

- NO conversing or any other form of communication among candidates is permitted once you enter the examination area
- No smoking, eating, or drinking will be allowed at the examination site
- You may not exit the building during the examination
- NO documents or notes of any kind may be removed from the test area

After The Examination

Notification of Examination Results

After completing the examination, candidates will receive their score report in 4 to 6 weeks. The score report will not include performance on pretest questions, and these questions will not be used to determine passing or failing. Newly certified professionals will appear on the ISCD's website certification registry.

ISCD and PSI are responsible for the validity and integrity of the scores reported. Occasionally, computer malfunctions or candidate misconduct may cause a score report to be suspect. ISCD and PSI reserve the right to void or withhold examination results if, upon investigation, violation of ISCD's policy is discovered.

Candidates have two options to raise questions about the examination:

- Each candidate will receive a survey at the end of the exam at which time the candidate may express comments and concerns about the exam.
- Candidates may also forward their comments in writing to ISCD within 10 business days of their exam
- During the computer-based examination, comments may be made for any question by clicking on the "comments" button to the left of the "time" button.

Standard Setting Methods

The passing standard for the International Society of Clinical Densitometry (ISCD) Certified Bone Densitometry Technologist (CBDT) was set using a modified Angoff method. The underlying philosophy of the Angoff method is that the passing point should be related to item difficulty, specifically the difficulty experienced by minimally competent professionals¹. Therefore, this technique required judges to render an expected performance rating for each examination item. Ratings were intended to express the expected probability that minimally competent professionals would correctly respond to each item on the test form. Study Methods were as follows:

- ***Judge Recruitment and Selection***
- ***Rating Procedure Training and Defining the Competence Criterion***
- ***Rating Process***
- ***Standard Setting Outcome***

Interpreting Your Score Report

The content area percentages on score reports are not used to determine pass-fail decision outcomes. They are only provided to offer general guidance regarding candidate performance in each content area. The examination is designed to provide a reliable and valid determination of a candidate's overall performance and is not designed to provide complete information regarding a candidate's performance in each content area. It is important to remember that content areas that make up a larger portion of the examination will have a greater effect on a candidate's overall score. The precision and consistency of scores diminishes with fewer items, and therefore, content area percentages should be interpreted with caution, especially those that correspond to content areas that make up a smaller portion of the examination.

Use of the Certification Mark

After receiving official notification of CBDT certification, the credential may be used only as long as certification remains valid and in good standing. Individuals may not use the CBDT until they have received specific written notification that they have successfully completed all requirements, including passing the examination and documenting the specified experience.

Certificants must comply with all recertification requirements to maintain use of the credential.

Certification is a non-transferable, revocable, limited, non-exclusive license to use the certification designation "CBDT", subject to compliance with the policies and procedures, as may be revised from time to time.

Except as permitted by this policy, any use or display of ISCD certification marks and/or logos without the prior written permission of the ISCD is prohibited. Any candidate or certificant who manufactures, modifies, reproduces, distributes or uses a fraudulent or otherwise unauthorized ISCD certificate, ISCD designation or other credential may be subject to disciplinary action, including denial or revocation of eligibility or certification. Any individual who engages in such behavior also may be subject to legal action.

Education and training providers may not use the ISCD name, logos, or certification marks to state or imply any approval or endorsement by ISCD or any affiliation with ISCD.

¹ Angoff, W.H. (1971). Scales, norms and equivalent scores. Educational Measurements. Washington, DC: American Council on Education.

Proper Use of the Credential

After meeting all eligibility requirements and passing the examination, individuals may use their credential in all correspondence and professional relations and on promotional materials, such as stationery, websites, business cards, etc. The mark or logo may be used only on business cards, stationery, letterhead, and similar documents on which the name of the individual certified is prominently displayed.

Individuals who have met the certification standards established by the ISCD Certification Council are authorized to use the following certification mark in communications and marketing materials:

- The credential may be used as “CBDT”.
- The credential is typically used after the certificants name following any academic degrees and licensure (e.g. John Smith, MBA, CBDT).
- The mark must be clearly associated with the individual(s) certified by the ISCD.

Correct Use:

John Doe is a CBDT® certificant

The certification mark(s) may be used only as long as certification is valid. Should the certification be suspended or withdrawn for any reason, the individual must immediately cease the use of the certification designation and acronym on stationery, websites, business cards, and any and all promotional materials.

Ownership of the Mark and Logo

The certification marks and logo are the property of the ISCD. Permission to use the certification mark or logo is granted to credentialed persons at the discretion of the ISCD Certification Council, for permissible uses only.

The CBDT marks and logo may not be revised or altered in any way. They must be displayed in the same form as produced by ISCD and cannot be reproduced unless such reproduction is identical to the mark provided by ISCD.

The mark or logo may not be used in any manner which could bring ISCD into disrepute or in any way is considered misleading or unauthorized. This includes any use of the mark or logo that the public might construe as an endorsement, approval or sponsorship by ISCD of a certificant's business or any product thereof.

Re-taking the Examination and Process

Candidates who fail an examination may re-test after a 30-day waiting period following the date the previous exam was taken. Reexamination requires the submission and completion of a re-examination application with the appropriate fee. Candidates must continue to meet the published eligibility criteria. Candidates are not authorized to schedule with PSI until a new Authorization to Test letter has been issued.

If a candidate is unsuccessful three times in sitting for the examination, they must complete and submit 12 continuing education hours in the field of bone density, Osteoporosis, or Metabolic Bone Disease.

The rationale for this reexamination policy is to ensure:

- there are a sufficient number of test forms available on an annual basis, so a different test form is administered to a retest candidate;
- examination security and item integrity; and to refresh the candidate's existing knowledge and skills, pertaining to procedures in the bone densitometry field.

CBDT® Content Outline

The Body of Knowledge Study identified 6 major topic areas:

- I. Bone Concepts
- II. Radiation Safety and Science
- III. Technology and Equipment
- IV. Scan Acquisition
- V. Scan Analysis

1. Bone Concepts

- A. Key Terms
 1. Osteoporosis and Low Bone Mass
 2. Bone Mineral Density (BMD)
 3. T-scores and Z-scores
 4. Fracture Risk Assessment (FRAX®)
- B. Bone Science
 1. Anatomy and physiology
 2. Bone types (e.g., trabecular, cortical)
 3. Remodeling cycle (e.g., formation, resorption)
 4. Fractures (e.g., atypical)
- C. Osteoporosis
 1. Primary osteoporosis (e.g., Type 1, Type 2)
 2. Secondary osteoporosis
 3. Risk factors
 4. Prevention
 5. Treatments (e.g., antiresorptive, anabolic)
 6. Bone Mass Measurement Act (i.e., reimbursement and coverage)

2. Radiation Safety and Science

- A. X-Ray Science
 - 1. Ionizing radiation factors (e.g., time, mA, kVp)
 - 2. Dual energy X-Ray Absorptiometry (DXA)
- B. Basic Methods of Protection and Radiation Safety
 - 1. ALARA
 - 2. Who to protect (e.g., patient, technologist, pregnant women)
 - 3. Protection methods (e.g., time, distance, shielding)
 - 4. Radiation dose (e.g., units, comparison)

3. Technology and Equipment

- A. BMD Measurement
 - 1. Testing devices (e.g., advantages/disadvantages of DXA, QCT, and QUS)
 - 2. Types of scanners (e.g., dual energy/fan beam, CT, ultrasound)
- B. DXA Standard Practices
 - 1. Calibration
 - 2. Quality assurance (QA) (e.g., accuracy, precision)
 - 3. Quality control (QC) (e.g., spine phantom, shifts, drifts)
 - 4. Precision assessment (e.g., calculating LSC)
 - 5. Cross-calibration
 - 6. Data management (e.g., backup, archive)

4. DXA Scan Acquisition

- A. Scan Selection
 - 1. Central vs. Peripheral
 - 2. Scan site substitution
 - 3. Patient health information
 - 4. Scan mode selection (e.g., body habitus)
- B. Positioning
 - 1. Spine
 - 2. Femur/hip
 - 3. Forearm/distal radius
- C. Artifacts
 - 1. Anatomical
 - 2. Internal and external
 - 3. Motion
 - 4. Contrast agents
- D. Serial Scanning
 - 1. Reproducibility
 - 2. Previous scan settings, parameters, and positioning
 - 3. Least Significant Change (LSC)
- E. Other Measurements
 - 1. Total Body/composition scan
 - 2. Vertebral Fracture Assessment (VFA)
 - 3. Atypical Femur Fracture (AFF) scans
 - 4. Trabecular bone scores (TBS)

5. Scan Analysis

A. Analysis Procedures

1. Specific sites (e.g., spine, hip, forearm)
2. Baseline vs. serial
3. Regions of interest (ROI)
4. Bone mapping/edge detection
5. Errors and automatic adjustments
6. Scan validity (e.g., erroneous BMD elevations, excluding vertebrae)

B. Guidelines and Reporting

1. ISCD Official Positions
2. WHO Diagnostic Criteria
3. NHANESIII Database
4. National Osteoporosis Foundation (NOF)

Specifications

The CBDT® examination has a total of 150 multiple choice questions (closed book). Candidates will have **three and a half** hours to complete the examination.

Number of Questions by Content Area and Percentage of Exam

Content Outline	Total	%
I. Bone Concepts	31	25
II. Radiation Safety and Science	14	1
III. Technology and Equipment	17	14
IV. Scan Acquisition	39	31
V. Scan Analysis	24	19
	125	100%

- Each correctly answered question is one point.
- Points are not deducted for incorrect answers.
- Answer all questions, even if you are not sure of the answer.
- All questions on the examination are based on the (CBDT®) content Outline and documented to a text included in the CBDT® Body of Knowledge.
- CEs are not awarded for taking the exam.

Questions about the Examination

Candidates have two options to raise questions about the examination:

- Each candidate will receive a survey at the end of the exam at which time the candidate may express comments and concerns about the examination.
- Candidates may also forward their comments in writing to ISCD within 10 business days of the examination.
- During the computer-based examination, comments may be made for any question by clicking on the Comments button to the left of the Time button. This opens a dialogue box where comments may be entered. Comments will be reviewed, but individual responses will not be provided.

All questions about the examination are reviewed by Certification Committee prior to test results being published. You will not receive an individual response from the committee following their review.

Reconsideration of Adverse Eligibility & Recertification Decisions & Exam Administration

A request for reconsideration allows an individual to appeal an adverse non-disciplinary decision made as part of the examination eligibility, examination administration or recertification process. A candidate whose eligibility for initial certification or recertification has been denied, or candidates who have experienced a breach of policy during exam administration, may request reconsideration of the decision.

The request for reconsideration must be submitted in writing to the Certification Council within 30 days of the adverse decision. The request should clearly articulate the stated appeal, reasons the candidate thinks he/she is eligible for certification/recertification based on the published requirements (including relevant supporting materials), and the appellant's day-time telephone number.

Reconsideration requests based solely on receiving a failing exam score or regarding the examination content outline (e.g., specific questions and the domain weights/specifications/blueprint that result from the Job Task Analysis) are not accepted. Due to the secure nature of the examination, neither ISCD nor PSI will disclose examination questions or a candidate's response to individual questions.

Review Process

Within thirty (30) calendar days after receiving an adverse decision in writing from ISCD regarding an appellant's registration, exam-related complaint, continuing education credits, or other appealable subject matter, the appellant wishing to appeal the decision must file an initial written appeal by sending to the Associate Executive Director of ISCD within thirty (30) calendar days after notification of the decision, a statement setting forth the basis for the appeal, and any supporting documentation. If the appeal does not contain all information required for consideration of the appeal it will be returned to the appellant, who will be given twenty-one (21) days to resubmit it. Failure to furnish the required information within twenty-one (21) days will result in the dismissal of the appeal. Once the appeal has been properly submitted, the Associate Executive Director will refer the matter to the Chair of the Certification Council Appeals Committee, who will consider the appeal.

The Associate Executive Director will notify the appellant of the decision of the Certification Council Appeals Committee within fifteen (15) days after the decision. Notification of the decision will be sent by certified mail, return receipt requested or by a courier delivery service that will reliably document receipt of the materials.

An appellant whose appeal to the Certification Council Appeals Committee has been denied in whole or part may appeal the decision to the entire Certification Council. To do so, the appellant may send a further written appeal and the basis for such an appeal to the Associate Executive Director within thirty (30) days after receiving notification of the decision. If the appeal does not contain all information required for consideration of the appeal it will be returned to the appellant, who will be given twenty-one (21) days to resubmit it. Failure to furnish the required information within twenty-one (21) days will result in the dismissal of the final appeal. Once the appeal has been properly submitted, the Associate Executive Director will refer the matter to the Chair of the Certification Council for a hearing at the next regularly scheduled meeting of the Council.

The Associate Executive Director will notify the appellant of the decision of the Certification Council as soon as practicable after the decision by the Council. The notification will be sent by certified mail, return receipt requested, or by a courier delivery service that will reliably document receipt of the materials.

The decision of the Certification Council is final.

Recertification Purpose

ISCD supports the ongoing professional development of its certificants. The mandatory recertification process provides certificants with the opportunity to demonstrate the retention, reinforcement and expansion of their knowledge and skills pertaining to new advances and information in the bone densitometry field.

Recertification also provides encouragement to, and acknowledgement for, participation in ongoing professional development activities and continued learning. To support this purpose, the recertification requirements require continuing education and professional activities that enhance ongoing professional development, recognize learning opportunities, and provide a process for both attaining and recording professional development achievements.

To ensure the proficiency of ISCD certified individuals, the Certification Council requires that each certificant participate periodically in continuing education to refresh existing knowledge and skills, and to acquire knowledge and skills pertaining to procedures in the bone densitometry.

The 5-year time period established for recertification is based on both the scope of issues that face bone densitometry professionals and the Council's belief that new practices, research, and information are introduced in the field with enough frequency that professional development activities should be conducted routinely so that certificants remain current with best practices and emerging knowledge.

The purpose of the recertification program is to promote the continued competence and professional growth of the CBDT Certificant. The Certification Council requires recertification every five years to ensure that the CBDT certified clinician is exposed to clinical advancements and standards of care within the area of bone health. The recertification requirements emphasize active participation in continuing education and practice activities to strengthen competency, knowledge and ability.

Recertification Rationale

Recertification is designed to assure a level of continued competence through the ongoing enhancement of knowledge and skills in the field bone densitometry. The Certification Council considered several factors when evaluating the five-year timeframe for the certification period, including, the rate of change in the industry and the timeframe with which new products, research, and education are introduced. By consensus, the Certification Council agreed that five years is an appropriate timeframe for the shelf life of the knowledge and skill required to perform the job role. Certificants must meet the following continuing education requirements every five years in order to maintain their certification.

- 35 continuing medical education credits obtained during the current certification cycle.
- Credits will be earned and recorded as CME Category 1 credits or ASRT Category A CE.
 - ASRT Category A CE credits are issued by a neutral third party and are truly independent and educationally valid. ASRT is the leading credit provider for technologists and provide technologists a wide variety of options to satisfy ongoing education.
 - AMA PRA Category 1 credits are issued by a neutral third party and are truly independent and educationally valid. AMA credits are the most recognized and provide a greater pool of educational activities that will qualify for re-certification.
- Continuing education credits must be earned in the areas of Musculoskeletal Health related conferences, seminars or workshops and must come from more than one source or activity.

Definition of Continuing Competence - The ISCD Certification Council defines continuing competence similarly to the definition provided by the National Commission for Certifying Agencies (NCCA), the accrediting body of the Institute for Credentialing Excellence (ICE). Continuing competence is demonstrating specified levels of knowledge, skills, or ability not only at the time of initial certification, but throughout an individual's professional career. Certification establishes a baseline of competence at the time of initial certification; however, it is not enough to promote continuing competence over time. Recertification of the certificant helps to ensure the certified individual is actively involved in activities that enhance the required knowledge, skills, and abilities to perform competently in the job role. Continuing competence is based on lifelong learning throughout an individual's career.

Audit and Verification Process - In order to maintain the credibility and integrity of the certification process, the Certification Council verifies the information provided on renewal applications and to ensure the renewal requirements are met. Requests for verification may be made prior to recertification or at a future time. Incomplete applications may result in delays or loss of certification. All renewal applications are reviewed for accuracy and completion. Professional licenses are checked for good standing and expiration dates. Random audits are conducted to confirm information provided.

Recertification Guidelines

Certificants must participate in ongoing professional development to maintain their CBDT®. Upon earning the CBDT® credential, certification remains valid for the following five calendar years (one recertification cycle).

- Certificants will recertify every five years with 35 continuing medical education credits; the first recertification cycle will start the year immediately following successfully passing the CBDT® examination. Example – Certified September 1, 2009, certification cycle 9/1/2009 – 9/1/2014
- Credits will be earned and recorded as CME Category 1 Credits or ASRT Category A CE.
- Credits must be earned throughout the five-year recertification cycle.
- Credits may not be carried over from one recertification cycle to another.
- Continuing medical education credits must be earned from Musculoskeletal Health related conferences, seminars or workshops and come from more than one source or activity.

CBDT® Recertify by Maintenance of Certification or sit for the CBDT Exam

- It is the responsibility of each certificant to maintain records documenting Contact Hour activity. Recertification is required every five years.
- Upon completion of your application and verification of continuing education credits, if you are a current Professional or Full member, you simply need to maintain your ISCD Professional or Full membership and will be automatically enrolled in the MOC program. If not a current Professional or Full member, you will be enrolled in MOC for the first year and need to renew this annually.
- You will be granted access to online education through ISCD to meet your continuing education requirements. You are encouraged to complete at least 7 credits each year.
- ISCD will track credits earned and provide an annual update on how many credits you have earned toward recertification.

- Once recertified, you must maintain your MOC or ISCD Professional for Full membership annually and continuing education credits.
- Once you obtain your 35 CME credits you will automatically be recertified as long as your ISCD Professional or Full membership or MOC is maintained throughout your certification period and you earn the credits prior to your expiration date.
- If either MOC or ISCD Professional or Full Membership is not maintained or the required 35 credits are not earned, you will have to register to sit for the certification exam to maintain your certification or to become certified again.

Category	Activity– continuing educational credits may include any of the following.
1.	Conference, Seminar, Workshop - earned and recorded as AMA PRA Category 1 Credit(s)™ (CME), or equivalent designations or ASRT Category A CE from other accrediting bodies or countries outside of the US, in the field of Musculoskeletal Health.
2.	General professional development: i.e. (Manufacture Training) - earned and recorded as AMA PRA Category 1 Credit(s)™ (CME), ASRT Category A CE or equivalent designations from other accrediting bodies or countries outside of the US, in the field of Musculoskeletal Health.
3.	Writing an original textbook as a single author pertaining to Musculoskeletal Health (24 Credits). Writing a chapter of a textbook as a single author pertaining to Musculoskeletal(4 Credits). Writing a scholarly article or journal publication pertaining to Musculoskeletal Health. (10 credits if only author / 5 credits if multiple authors)

Record Retention

CME & CE Record Retention

- Documentation for all activities submitted for Contact Hour credit must be retained by the certificant for a period of five years following submission.
- ISCD reserves the right to audit a certificant's records; any contact hours that cannot be documented during the audit process may be disqualified.
- During any five-year recertification cycle, it is the responsibility of a certificant to maintain a current address and contact information with the ISCD office. Changes to a certificant's professional information will be updated regularly in the ISCD Certification Registry on the ISCD site. The ISCD retains hard-copy applications, pass/fail letters, recertification records for two- times the length of the certification cycle. Electronic records of certification dates and recertification are kept indefinitely in the ISCD database. Under no circumstances will individual data or test scores be shared with any entity outside of the ISCD and its testing agency, unless permission is obtained from the candidate or certificate holder or unless otherwise required by law.
- Candidate test scores are not released by telephone or electronically, but only in written form as an official ISCD document. The ISCD may develop and publish statistical data regarding the exams provided that the identities of the candidates are not divulged. The ISCD will dispose of secure and confidential materials after the retention period. This is done using a highly secure shredding service which takes place on-site at the ISCD office.

Certificant Record Retention

Candidate and Certificant information is confidential and will not be released or given to anyone other than to legally-required agencies. The Exam Security Policy provides information on confidentiality.

The ISCD maintains all applications, test results and other pertinent information for the certification program. The application, exam format, results and any other pertinent information are considered confidential and privileged information and will not be revealed to anyone without the applicant’s written permission unless required by law. The ISCD is committed to respecting our certificant’s privacy and recognized the need for appropriate protection and management of personally identifiable information. The following is a summary of our current policies and procedures related to information gathering and dissemination practices.

- Record Retention Schedule
- Completed applications Two-times the length of the certification cycle
- Recertification applications Two-times the length of the certification cycle
- Candidate application records..... Two-times the length of the certification cycle
- Database of exam scores Permanently
- Volunteer confidentiality and conflict of interest agreements Permanently

Certification Testing Service Materials

Job analyses materials	Permanently
Exam Content Outline	Permanently
Records of Item Writing Activities.....	Permanently
Exam Development Report	Permanently
Cut Score (Pin) Studies.....	Permanently
Annual Technical Reports	5 years
Test books and masters (Paper exams only)	2 months after scoring Database of exam scores..... Permanently
Item Bank.....	Permanently
Retired examination items	Permanently
Exam Forms	Permanently
Examinee answer sheets.....	5 years
Group scoring reports.....	5 years
Hand score records (Paper exams only).....	5 years
Exam administration records	1 year
Question comment forms	1 year
Retired and Active exam answer keys	5 years
Volunteer confidentiality and conflict of interest agreements	Permanently

Release of Information

Other than a listing of certified individuals on our website’s certification registry, the ISCD does not release information about an application or its status to any person other than the applicant, and only after confirming the identity of said applicant. Further, the ISCD does not release individual examination results to applicants in any manner other than by letter sent via USPS and addressed to the candidate. ISCD certification staff and its testing agency are the only individuals allowed access to the certification files. ISCD certification staff will only verify that an individual is certified and will not reveal whether an individual has even applied for the exam. No personal information about the applicant or certificant will be revealed unless written permission has been obtained from the certificant or applicant.

Disciplinary Action for Exam Cheating

Cheating is defined as to act unfair in order to gain an advantage. This includes an individual obtaining or acquiring a passing score through dishonest, fraudulent, or deceptive means. Cheating while taking an exam for ISCD certification includes:

1. Failure to adhere to the test center guidelines.
 2. Copying of another individual's exam.
 3. Acquiring answers through another source while taking the exam by way of outsourced communications including: Cell phones, websites, and other sources not relating to the exam itself.
- The Policy of ISCD is to deal effectively and immediately with any candidate who practices or attempts to cheat on the exam for certification because it is destructive to the integrity of the CBDT and CBDT certification programs.
 - The Certification Council will make decisions toward all individuals violating ISCD policies. The consequences of the proven and documented cheating will include:
 1. Revocation of Certification (CBDT)
 2. Inability to take the exam for an agreed upon time (between 3 to 5 years)

Filing A Complaint

ISCD is committed to allowing individuals the opportunity to submit complaints at any time. The Certification Council will review and consider all complaints to determine if action is needed. All follow up communication with the individual who filed the complaint will be done by written communication only, such as email. Complaints that concern conduct that is harmful to the public or inappropriate to the discipline such as incompetence, unethical behavior, violation, or physical/mental illness impairment affecting one's performance should follow the following procedures:

- All complaints must be submitted by letter (Email or Fax) to the Certification Administrator with details stating the complaint.
- ISCD will acknowledge the receipt of the complaint in writing within 30 days of the receipt of the complaint. ISCD will notify the person who is the subject of the complaint, will provide a copy of this policy to him/her, and give him/her an opportunity to respond to the allegations.
- The ISCD Certification Council will review the complaint and supporting documentation. At the discretion of the Certification Council, they may conduct a conference call with Council members, staff, and the complainant or simply review and determine the necessary steps acceptable to members of the Council based on the severity of the complaint. Possible sanctions may include, but not limited to, termination of certification, suspension, or written reprimand.
- The determination of the Certification Council, along with any applicable sanction, will be sent to the complainant within 60 business days of the conclusion of the investigation.
- Should the complainant disagree with an adverse decision from the Certification Council, he or she may appeal to the ISCD Board of Directors.

- All complaints will be treated as sensitive information. The Certification Council will use nonbiased guidelines and implement fairness in determining the resolution of the said complaint. The Certification Council has the right to contact the employers and other individuals during the investigation stage to gather necessary information. Disciplinary action will not be published. However, if the determining entities determine the violation is proven and the individual's certification is terminated, the individual's name will no longer appear on the certification registry during the period of the suspension.

Appeals

ISCD is committed to allowing candidates the opportunity to appeal decisions during the professional credentialing process. ISCD staff and the ISCD Certification Council are responsible for handling all appeals and requests in a confidential, timely and fair manner. Every effort is made to ensure that the ISCD examination procedures are reasonable and that fair and equitable treatment is accorded to all applicants. To ensure fairness and a right of redress in the evaluation and processing of applications, examination procedures, and certification activities, the ISCD Certification Council has established a formal appeals procedure which you must follow for appeal of ISCD's policies, requirements, or decisions. All decisions and actions shall be transmitted in writing and shall contain a brief notice of the right of appeal. Complete appeal procedure information is available upon request from certification@iscd.org. If you wish to appeal any action or decision, your appeal must follow these guidelines:

1. Appeals shall (a) be in writing, using the dedicated appeals form provided on the ISCD website; (b) be signed by you; (c) state the decision or action being appealed; (e) give the reasons why the decision or action is being challenged; and (f) specify what decision or action you seek.
2. No appeal will be considered unless received by the Certification Appeals Committee within sixty (60) days after the decision being appealed.
3. Upon receipt of an appeal, the Appeals Committee may reconsider the decision or action being appealed, and with consent from the committee members, reverse or modify the decision or action. You will be notified of the reversal or modification of the decision or action.
4. The Committee shall consider the appeal and issue a decision in writing within sixty (60) days after the decision has been reached.
5. You have the right to appeal an adverse Committee decision to the Board of Directors under the same procedures herein specified.
6. Unless appealed, the Committee's decision shall be final. The decision of the Board of Directors shall be final.
7. No person who participated in the initial decision being appealed shall have a vote on the decision under appeal.
8. Decisions by the ISCD regarding initial determination of eligibility to take an examination, continued certification, disruptive examination conditions and verification of an examination score may be appealed. All such appeals must be received by the ISCD within 30 days of the date that the ISCD sent the notice denying eligibility to take the examination or (2) the date the ISCD sent notice denying continued certification (3) the date on which a disruptive examination condition or examination occurred, or (4) that the candidate received official notice of the examination score. The written appeal must identify the precise factual basis, applicable rules or examination conditions that are the basis for the appeal.