MEDIMAPS
We understand bone health

Trabecular Bone Score

Reimbursement & coding guide

2026

Overview

Since January 2022, Trabecular bone score (TBS) has four new dedicated CPT® codes for reimbursement.

TBS calculates a texture analysis of bone microarchitecture providing information on the quality of bone health. This allows for better predictions of risk for major osteoporotic fracture independent of bone mineral density (BMD) and associated clinical risk factors. TBS procedures are commonly performed in hospital outpatient departments, imaging centers, or physician offices.

This guide is intended to aid providers in appropriate procedure code selection for Trabecular bone score (TBS) procedures. The document reflects applicable and commonly billed procedure codes as well as the unadjusted national Medicare average rates assigned to the Current Procedural Terminology (CPT) code Category 1.

Instructions for use

Detailed descriptions of the codes and their reporting requirements or guidance are provided in the “coding” section.

Outpatient Prospective Payment System (OPPS) and Physician Fee Schedule (PFS) can be found under the “reimbursement” section.

The information in this document is current as of December 1st, 2025. Coding, coverage and payment changes that may occur subsequently are not anticipated.

This document is not all-inclusive, and does not replace advice from your coding and compliance departments and/or CPT 1 coding manuals.

Medimaps Group provides this information for your convenience. However, this guide **does not instruct you on which codes to use for a particular service, supply, procedure or treatment**. It is the provider’s responsibility to determine and submit the appropriate codes for any service, supply, procedure or treatment rendered.

Actual codes used are at the sole discretion of the treating physician and/or facility. For specific coding and coverage guidelines, get in touch with your local payer. Please note that Medimaps Group cannot guarantee medical benefit coverage or reimbursement based on the codes listed in this guide.

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Coverage

Medicare

Original Medicare
The CPT codes listed in this document do not imply coverage of the procedure. All codes are subject to Medicare rules and regulations, medical necessity and reasonability criteria and applicable National and Local Coverage Determinations (NCDs and LCDs), as defined by CMS and/or its contractors. Please consult the most up-to-date information available.

Medicare advantage
Medicare Advantage plans must follow coverage policies established by CMS and local Medicare Administrative Contractors (MACs)[1]. Medicare Advantage plan administrators may have their own policies and extra criteria, including prior authorization.

Medicaid

While Medicaid program evaluate procedure eligibility in accordance with federal guidelines and regulations, individual states maintain a degree of flexibility in determining specific eligibility criteria and coverage within the framework of federal mandates. Consequently, coverage may differ from one state to another.
Please refer to the most current information available in your state.

1. https://www.medicare.gov/medicare-advantage-plans-cover-all-medicare-services#:~:text=Medicare%20Advantage%20Plans%20provide%20all,necessary%20services%20Original%20Medicare%20covers. Accessed on September 1st, 2023

Commercial payers

Commercial health insurance providers, not related to Medicare, generally decide on procedure coverage using relevant medical policies. There might be a need for prior authorization. Not all policies that are published are applicable to every patient insured by a specific payer.
There may be plan-specific coverage limitations.

Best practices for documentation

TBS procedures must be explicitly ordered by the referring/treating physician. When performed alongside BMD, both procedures must be explicitly ordered. Orders must be documented.

The medical record must support the medical necessity of all procedures being performed.

Best practice considerations
- Identify a staff member to coordinate all prior authorizations.
- Utilize specific payer websites/portals to ensure the most current coverage and submission prerequisites.
- Verify that the clinical information submitted is precise and reflects the requirements within the medical policy.
- Relevant medical history, physical examination, and results of pertinent diagnostic tests or procedures may be required.
- Consider including a brief and clear medical necessity letter summarizing how the patient fulfills the payer's coverage criteria.
- Submit information and maintain a track record of the authorization review until a coverage decision is reached.

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Common criteria for coverage

As TBS procedures are performed alongside standard BMD exams, they should adhere to the following coverage criteria. Medicare Part B covers BMD tests once every 24 months, or more often if medically necessary, if patients meet one or more of the five conditions listed below:

"A woman who has been determined by the physician or qualified nonphysician practitioner treating her to be estrogen-deficient and at clinical risk for osteoporosis, based on her medical history and other findings.

An individual with vertebral abnormalities as demonstrated by an X-ray to be indicative of osteoporosis, osteopenia, or vertebral fracture.

An individual receiving (or expecting to receive) glucocorticoid (steroid) therapy equivalent to an average of 5.0 mg of prednisone, or greater, per day, for more than 3 months.

An individual with primary hyperparathyroidism.

An individual being monitored to assess the response to or efficacy of an FDA approved osteoporosis drug therapy"[2]

2. CMS 100-2, chapter 15, Section 80.5.6, https://www.medicare.gov/medicare-advantage-plans-cover-all-medicare-services#:~:text=Medicare%20Advantage%20Plans%20provide%20all,necessary%20services%20Original%20Medicare%20covers. Accessed on September 1st, 2023

Coding

CPT® codes category 1

Coding and description for Trabecular Bone Score. There are 4 unique dedicated codes for TBS.

CPT Codes	Description
77089	Trabecular bone score (TBS), structural condition of the bone microarchitecture; using dual X-ray absorptiometry (DXA) or other imaging data on gray-scale variogram, calculation, with interpretation and report on fracture-risk
77090	Trabecular bone score (TBS), structural condition of the bone microarchitecture; technical preparation and transmission of data for analysis to be performed elsewhere
77091	Trabecular bone score (TBS), structural condition of the bone microarchitecture; technical calculation only
77092	Trabecular bone score (TBS), structural condition of the bone microarchitecture; interpretation and report on fracture-risk only by other qualified health care professional

- **77089** describes the complete TBS service when the TBS software is installed on the imaging equipment, including physician review and interpretation of the TBS report.
- **77090** is used to report when data is extracted from the imaging equipment and sent elsewhere for TBS analysis.
- **77091** is used when only the TBS calculation is performed, **77092** captures the physician interpretation and report of TBS.
- **77090** and **77091** are technical component only.

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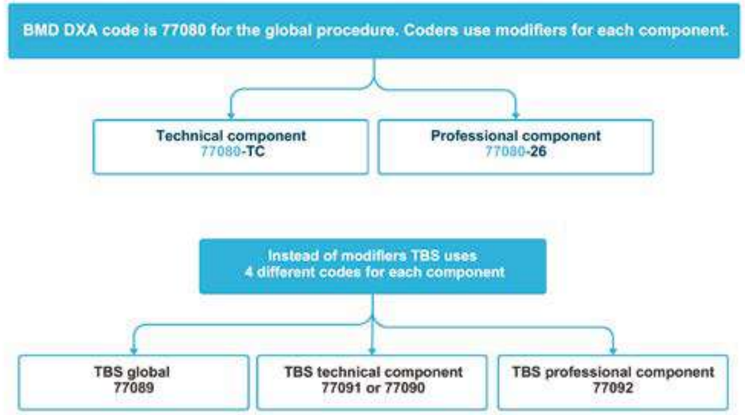
Coding TBS differs from coding BMD DXA

TBS does not use modifiers like in BMD DXA coding. TBS has 4 unique and distinct codes, each component is assigned a specific code, as illustrated below.



Reimbursement

This section provides 2026 Medicare unadjusted national average fees for the Outpatient Prospective Payment System (OPPS) and Physician Fee Schedule (PFS).

Outpatient Prospective Payment System (OPPS)

CPT Codes	Description	Component	APC[3]	Relative weight	Payment rate
77089	Trabecular bone score (TBS), structural condition of the bone microarchitecture; using dual X-ray absorptiometry (DXA) or other imaging data on gray-scale variogram, calculation, with interpretation and report on fracture-risk	**Global**	N/A	N/A	N/A
77090	Trabecular bone score (TBS), structural condition of the bone microarchitecture; technical preparation and transmission of data for analysis to be performed elsewhere	**Technical only**	5521	0.9726	$88.91[4]
77091	Trabecular bone score (TBS), structural condition of the bone microarchitecture; technical calculation only	**Technical only**	5521	0.9726	$88.91[4]
77092	Trabecular bone score (TBS), structural condition of the bone microarchitecture; interpretation and report on fracture-risk only by other qualified health care professional	**Professional only**	N/A	N/A	N/A

Note: Actual Medicare payment rates are adjusted based on geographical factors, Medicare does not pay for physician services on the OPPS.
3. APC : The national average 2026 Medicare rates and status indicators for the hospital outpatient setting are from the 2026 Hospital Outpatient Prospective Payment System (OPPS) Final Rule Addendum B, accessible at CMS-1834-FC. Addendums are updated on a quarterly basis.
4. OPPS Status Indicator "S": Procedure or service not subject to multiple procedure discounting.

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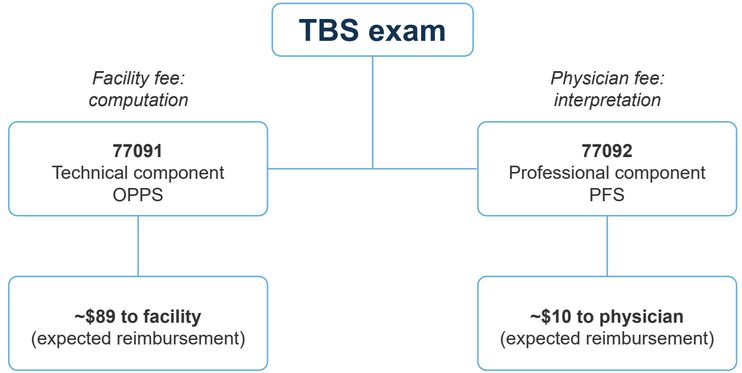
Physician Fee Schedule (PFS)

CPT Codes	Description	Component	Total RVUs[5]	QP payment rate[6]	Non-QP payment rate[6]
77089	Trabecular bone score (TBS), structural condition of the bone microarchitecture; using dual X-ray absorptiometry (DXA) or other imaging data on gray-scale variogram, calculation, with interpretation and report on fracture-risk	**Global**	1.19	$39.95	$39.75
77090	Trabecular bone score (TBS), structural condition of the bone microarchitecture; technical preparation and transmission of data for analysis to be performed elsewhere	**Technical only**	0.09	$3.02	$3.01
77091	Trabecular bone score (TBS), structural condition of the bone microarchitecture; technical calculation only	**Technical only**	0.80	$26.85	$26.72
77092	Trabecular bone score (TBS), structural condition of the bone microarchitecture; interpretation and report on fracture-risk only by other qualified health care professional	**Professional only**	0.30	$10.07	$10.02

Note: Actual Medicare payment rates are adjusted based on geographical factors
5. RVU: The 2026 physician relative value units (RVUs) are from the 2026 Physician Fee Schedule (PFS) Final Rule, Addendum B available from the CMS website at https://www.cms.gov/medicare/payment/fee-schedules/physician/federal-regulation-notices/cms-1832-f.
6. Starting in 2026, CMS defines two separate conversion factors for Qualified APM Participants (QP) and non-participants (non-QP), leading to different payment rates.

Example of hospital outpatient department

Technical and professional payments
Billing can differ between hospital settings and payer requirements. Below is an example of a TBS procedure performed in a hospital outpatient department and billed to Medicare using split billing for technical and professional components (e.g. Place of Service 22 or 19)*. As shown, the facility and physician fees can be separated by using two different codes instead of relying on modifiers.



Example of hospital outpatient department using split billing

**https://www.cms.gov/medicare/coding-billing/place-of-service-codes/code-sets*

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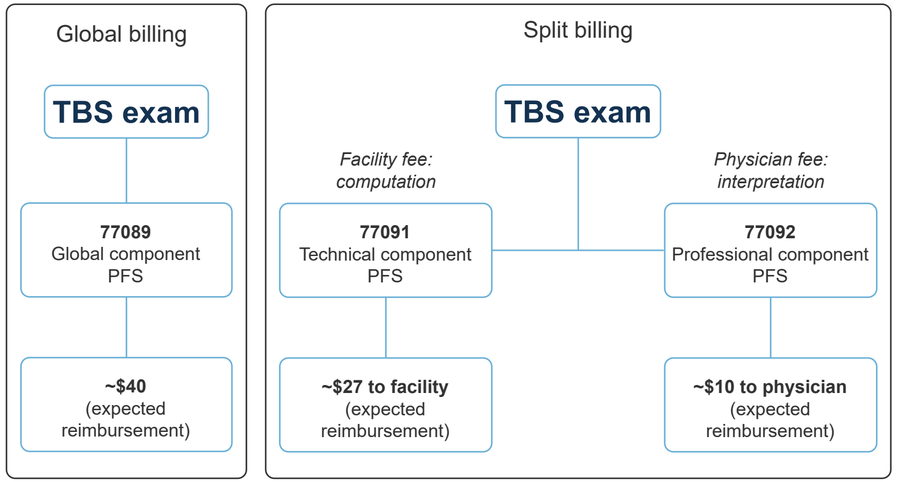
Example of imaging center/office

Global, technical and professional payments
Below are examples of a TBS procedure performed in an imaging center or an office location (e.g. Place of Service 11)*. Depending on its organization, both global and split billing are possible, but require using different codes instead of relying on modifiers.



Example of imaging center/office billing scenarios

*https://www.cms.gov/medicare/coding-billing/place-of-service-codes/code-sets

Frequently asked questions

1. Do TBS codes replace BMD DXA Codes?
No. TBS Codes do not replace BMD DXA codes. They are independent codes and can be billed in addition to BMD. The combination of the two procedures increases total reimbursement.

2. How should PC/TC modifiers be used with TBS codes?
While DXA BMD codes use modifiers -26 and -TC to separate professional and technical components, TBS uses 4 different codes for each component. Do not append -26 or -TC modifiers to TBS codes. This can result in payment denial.

3. Our outpatient facility uses split billing, which codes should we use?
Use code 77091 to bill for the technical component, and 77092 for the professional charge. 77090 is only used in rare instances (refer to question number 4 below). Codes 77089 or 77092 cannot be used to bill for services under the Outpatient Prospective Payment System (OPPS) as they contain a professional component and are not assigned to any APC. They are only paid under the Physician Fee Schedule (PFS).

4. What is the difference between codes 77091 and 77090?
Both codes describe technical components of TBS:

- **77091** - Accounts for the TBS calculation and is the standard code used when the DXA device is equipped with TBS.
- **77090** - Only used when image data is extracted from the modality and sent elsewhere for a TBS computation. This is a rare occasion.

For more information regarding TBS reimbursement, please contact us at reimbursement@medimapsgroup.com. Do not send any patient information or other Protected Health Information (PHI). Medimaps will not process requests containing PHI.

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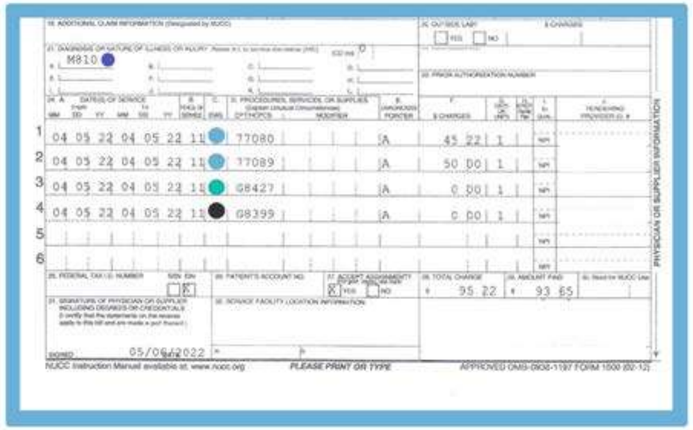
Resources

Real case coding example from a radiology center using global billing



- **M810**: Age-related osteoporosis without current pathological fracture - as a primary diagnosis code

- **77080**: DXA, bone density study, 1 or more sites; axial skeleton
- **77089**: DXA scan with calculation, interpretation and report on fracture risk
- **G8427**: Clinician documentation
- **G8399**: Patient w/DXA results

Educational webinar

On-demand video providing helpful advice from clinical and technical experts on:

- The use of TBS for the assessment and management of primary and secondary osteoporosis in clinical practice.
- TBS reimbursement in real-world practice and how to select the appropriate procedure code selection for TBS procedures.

Scan to watch
the webinar on
TBS reimbursement

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We understand bone health

Founded by medical practitioners and clinical researchers, Medimaps combines Swiss innovation with a global presence to lead in bone health management. We provide healthcare professionals worldwide with advanced AI-driven software that enables comprehensive bone microarchitecture assessment.

Our passion for musculoskeletal health is underpinned by scientific knowledge, collaborations with world-class academics, clinicians, industry partners, and direct patient engagement. The science behind our cutting-edge imaging applications and clinical evidence forms the core of our company's DNA.

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