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Reviewed: 06/22/23

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Subject: Total Body Plethysmography

THIS MEDICAL COVERAGE GUIDELINE IS NOT AN AUTHORIZATION, CERTIFICATION, EXPLANATION OF BENEFITS, OR A GUARANTEE OF PAYMENT, NOR DOES IT SUBSTITUTE FOR OR CONSTITUTE MEDICAL ADVICE. ALL MEDICAL DECISIONS ARE SOLELY THE RESPONSIBILITY OF THE PATIENT AND PHYSICIAN. BENEFITS ARE DETERMINED BY THE GROUP CONTRACT, MEMBER BENEFIT BOOKLET, AND/OR INDIVIDUAL SUBSCRIBER CERTIFICATE IN EFFECT AT THE TIME SERVICES WERE RENDERED. THIS MEDICAL COVERAGE GUIDELINE APPLIES TO ALL LINES OF BUSINESS UNLESS OTHERWISE NOTED IN THE PROGRAM EXCEPTIONS SECTION.

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DESCRIPTION:

Total body plethysmography, also referred to as whole-body plethysmography, is a pulmonary function study for determining thoracic gas volume (VTG) and airways resistance (Raw).

During body plethysmography, the individual is enclosed in a chamber equipped to measure pressure, flow, or volume changes. The most common measurements made using body plethysmography are VTG and Raw. Airways conductance (Gaw) is also commonly calculated as the reciprocal of Raw. Specific airways conductance (i.e., conductance/unit of lung volume) is routinely reported as sGaw. Other tests that can be administered in body plethysmography include spirometry, bronchial challenge, diffusing capacity (DLCO), single-breath nitrogen (N₂), multiple-breath N₂ washout, pulmonary compliance, and occlusion pressure. These are not discussed as part of this guideline.

Body plethysmography can be performed in pulmonary function laboratories, cardiopulmonary laboratories, or clinics and physician's offices.

POSITION STATEMENT:

Total body plethysmography **meets the definition of medical necessity** when performed for determining thoracic gas volume (TGV or VTG), airway resistance (Raw), and Specific airways conductance (sGaw) for any of the following indications:

- Diagnosis of restrictive lung disease;
- Measurement of lung volumes to distinguish between restrictive and obstructive processes;
- Evaluation of obstructive lung diseases, such as bullous emphysema and cystic fibrosis, which may produce artifactually low results if measured by helium dilution or N₂ washout. With

simultaneously determined volumes, an index of trapped gas (i.e., FRCplethysmograph/ FRCHe dilution) can be established;

- Measurement of lung volumes when multiple repeated trials are required or when the member is unable to perform multi-breath tests;
- Evaluation of resistance to airflow;
- Determination of the response to bronchodilators, as reflected by changes in Raw, sGaw, and VTG;
- Determination of bronchial hyper-reactivity in response to methacholine, histamine, or isocapnic hyperventilation as reflected by changes in VTG, Raw, and sGaw;
- Following the course of disease and response to treatment.

Total body plethysmography, using any method, is considered **experimental or investigational** for all other indications. There is insufficient clinical evidence published in the peer-reviewed literature regarding the effect of total body plethysmography on health outcomes.

BILLING/CODING INFORMATION:

CPT Coding

94726	Plethysmography for determination of lung volumes and, when performed, airway resistance
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ICD-10 Diagnosis Codes That Support Medical Necessity

D86.0, D86.2, D86.9	Sarcoidosis (of lung)
E84.0	Cystic fibrosis with pulmonary manifestations
E84.11	Meconium ileus in cystic fibrosis
E84.19	Cystic fibrosis with gastrointestinal manifestations
E84.8	Cystic fibrosis with other manifestations
E84.9	Cystic fibrosis, unspecified
G12.21	Amyotrophic lateral sclerosis
J40	Bronchitis, not specified as acute or chronic
J41.8	Mixed simple and mucopurulent chronic bronchitis
J42	Unspecified chronic bronchitis
J43.0 – J43.9	Emphysema
J44.0 – J44.1	Chronic obstructive pulmonary disease
J44.9	Chronic obstructive pulmonary disease, unspecified
J45.20 – J45.998	Asthma
J47.0 – J47.9	Bronchiectasis
J60	Coal worker's pneumoconiosis
J61	Pneumoconiosis due to asbestos and other mineral fibers
J62.0, J62.8	Pneumoconiosis due to other dust containing silica
J63.0	Aluminosis (of lung)
J63.1	Bauxite fibrosis (of lung)

J63.2	Berylliosis
J63.3	Graphite fibrosis (of lung)
J63.4	Siderosis
J63.5	Stannosis
J63.6	Pneumoconiosis due to other specified inorganic dusts
J64	Unspecified pneumoconiosis
J65	Pneumoconiosis associated with tuberculosis
J66.0	Byssinosis
J66.1	Flax-dresser's disease
J66.2	Cannabinosis
J66.8	Airway disease due to other specific organic dusts
J67.0	Farmer's lung
J67.1	Bagassosis
J67.2	Bird fancier's lung
J67.3	Suberosis
J67.4	Malt worker's lung
J67.5	Mushroom worker's lung
J67.6	Maple bark-stripper's lung
J67.7	Air conditioner and humidifier lung (ventilation pneumonitis)
J67.8	Hypersensitivity pneumonitis due to other organic dusts
J67.9	Hypersensitivity pneumonitis due to unspecified organic dust
J68.0 – J68.9	Respiratory conditions due to inhalation of chemicals, gases, fumes and vapors
J70.1	Chronic and other pulmonary manifestations due to radiation
J84.10	Pulmonary fibrosis, unspecified
J84.111 – J84.117	Idiopathic pulmonary fibrosis
J84.2	Lymphoid interstitial pneumonia
J84.81 – J84.848, J84.89	Other specified interstitial pulmonary diseases
M34.0 – M34.9	Systemic sclerosis (scleroderma)
M35.5	Multifocal fibrosclerosis
R06.00 – R06.09	Dyspnea
Z01.811	Encounter for preprocedural respiratory examination

LOINC Codes

DOCUMENTATION TABLE	LOINC CODES	LOINC TIME FRAME MODIFIER CODE	LOINC TIME FRAME MODIFIER CODES NARRATIVE
Physician history and physical	28626-0	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim.

Attending physician visit note	18733-6	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim.
Clinical notes and chart section (i.e., nursing home records, home health agency records, and other health care professional	28650-0	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim.

REIMBURSEMENT INFORMATION:

Refer to section entitled [POSITION STATEMENT](#).

PROGRAM EXCEPTIONS:

Federal Employee Program (FEP): Follow FEP guidelines.

State Account Organization (SAO): Follow SAO guidelines.

Medicare Advantage Products:

The following National Coverage Determination (NCD) was reviewed on the last guideline reviewed date: Plethysmography (20.14) located at cms.gov. No National Coverage Determination (NCD) was found for total body or whole body plethysmography at the time of the last guideline reviewed date.

The following Local Coverage Determination (LCD) was reviewed on the last guideline reviewed date: Pulmonary Diagnostic Services (L33707) located at fcso.com.

DEFINITIONS:

No guideline specific definitions apply.

RELATED GUIDELINES:

None applicable.

OTHER:

None applicable.

REFERENCES:

1. American Association for Respiratory Care. Clinical practice guideline for body plethysmography. 2001 Revision and update.
2. Bar-Yishay E. Whole-body plethysmography. The human factor. Chest. 2009;135(6):1412-4.
3. Borg BM, Thompson BR. The measurement of lung volumes using body plethysmography: a comparison of methodologies. Respir Care. 2012;57(7):1076-83.

4. Broekhuizen BD, Sachs AP, Hoes AW, Verheij TJ, Moons KG. Diagnostic management of chronic obstructive pulmonary disease. *Neth J Med*. 2012 Jan;70(1):6-11.
5. Centers for Medicare and Medicaid Services (CMS). National Coverage Determination (NCD) for Plethysmography 20.14, 11/15/80.
6. Chandrasoma B, Balfe D, Naik T et al. Pulmonary function in patients with amyotrophic lateral sclerosis at disease onset. *Monaldi Archives for Chest Disease* 2012; 77 (314): 129-133.
7. Criece CP, Sorichter S, Smith HJ et al. Body plethysmography-Its principles and clinical use. *Respiratory Medicine* 2011; 105: 959-971.
8. First Coast Service Options (FCSO). Local Coverage Determination (LCD) for Pulmonary Diagnostic Services L33707, 11/13/18
9. Garfield JL, Marchetti N, Gaughan JP, Steiner RM, Criner GJ. Total lung capacity by plethysmography and high-resolution computed tomography in COPD. *Int J Chron Obstruct Pulmon Dis*. 2012;7:119-26.
10. Glaab T, Vogelmeier C, Hellmann A, Buhl R. Guideline-based survey of outpatient COPD management by pulmonary specialists in Germany. *Int J Chron Obstruct Pulmon Dis*. 2012;7:101-8.
11. Javad Mousavi SA, Zamani B, Shahabi Shahmiri S et al. Pulmonary function tests in patients with amyotrophic lateral sclerosis and the association between these tests and survival. *Iranian Journal of Neurology* 2014; 13(3): 131-137.
12. O'Donnell CR, Bankier AA, Stiebellehner L, Reilly JJ, Brown R, Loring SH. Comparison of plethysmographic and helium dilution lung volumes: which is best for COPD? *Chest*. 2010 ;137(5):1108-15.
13. Miller RG, Brooks BR, Swain-Eng RJ et al. Quality improvement in neurology: Amyotrophic lateral sclerosis quality measures. Report of the quality measurement and reporting subcommittee of the American Academy of Neurology, 2013; 2136-2140.
14. Miller RG, Jackson CE, Kasarski EJ et al. Practice parameter update: The care of the patient with amyotrophic lateral sclerosis: drug, nutritional, and respiratory therapies (an evidence-based review). Report of the quality standards subcommittee of the American Academy of Neurology, 2009; 1218-1226.
15. National Institutes of Health/U.S. National Library of Medicine: Pulmonary function tests, 2019.
16. Poorisrisak P, Vrang C, Henriksen JM, Klug B, Hanel B, Bisgaard H. Accuracy of whole-body plethysmography requires biological calibration. *Chest*. 2009;135(6):1476-80.
17. Ruppel GL. *Respir Care*. What is the clinical value of lung volumes? 2012 Jan;57(1):26-35; discussion 35-8. doi: 10.4187/respcare.01374. Schneider A, Gindner L, Tilemann L, Schermer T, Dinant GJ, Meyer FJ, Szecsenyi J. Diagnostic accuracy of spirometry in primary care. *BMC Pulm Med*. 2009; 9:31.
18. Wanger J, Clausen JL, Coates A, et al. Standardization of the measurement of lung volumes. *Eur Respir J*. 2005;26(3):511-22.

COMMITTEE APPROVAL:

This Medical Coverage Guideline (MCG) was approved by the Florida Blue Medical Policy and Coverage Committee on 06/22/23.

GUIDELINE UPDATE INFORMATION:

07/15/12	New Medical Coverage Guideline.
06/15/13	Annual review; position statement unchanged; Program Exceptions section updated.

06/15/14	Scheduled review; position statement unchanged; references updated.
10/01/15	Revision; updated ICD10 coding section.
11/01/15	Revision; ICD-9 Codes deleted.
08/15/16	Revision; added J41.8, J44.9 and J65. Updated references.
02/15/17	Revision; added G12.21, R06.00-R06.09 and Z01.811. Updated references.
06/15/19	Review; no change in position statement. Updated references.
01/01/21	Annual HCPCS code update. Deleted 94750.
07/15/21	Review; revised experimental or investigational statement.
07/15/23	Review; no change in position statement.