listed impairment. Any decision as to whether an individual's impairment is medically the equivalent of an impairment listed in the appendix to this subpart, shall be based on medically accepted clinical and laboratory diagnostic techniques, including a medical judgment furnished by one or more physicians designated by the Administration, relative to the question of medical equivalence.

§410.426 Determining total disability: Age, education, and work experience criteria.

(a) Pneumoconiosis which constitutes neither an impairment listed in the appendix to this subpart (see §410.424), nor the medical equivalent thereof, shall nevertheless be found totally disabling if because of the severity of such impairment, the miner is (or was) not only unable to do his previous coal mine work, but also cannot (or could not), considering his age, his education, and work experience, engage in any other kind of comparable and gainful work (see §410.412(a)(1)) available to him in the immediate area of his residence. A miner shall be determined to be under a disability only if his pneumoconiosis is (or was) the primary reason for his inability to engage in such comparable and gainful work. Medical impairments other than pneumoconiosis may not be considered.

The following criteria recognize that an impairment in the transfer of oxygen from the lung alveoli to cellular level can exist in an individual even though his chest roentgenogram (X-ray) or ventilatory function tests are normal.

(b) Subject to the limitations in paragraph (a) of this section, pneumoconiosis shall be found disabling if it is established that the miner has (or had) a respiratory impairment because of pneumoconiosis demonstrated on the basis of a ventilatory study in which the maximum voluntary ventilation (MVV) or maximum breathing capacity (MBC), and 1-second forced expiratory volume (FEV_1), are equal to or less than the values specified in the following table or by a medically equivalent test:

Height (inches)	MVV (MBC) equal to or less than L./Min.	FEV_1 equal to or less than l.
57 or less	52	1.4
58	53	1.4
59	54	1.4
60	55	1.5
61	56	1.5
62	57	1.5
63	58	1.5
64	59	1.6
65	60	1.6
66	61	1.6
67	62	1.7
68	63	1.7
69	64	1.8
70	65	1.8
71	66	1.8
72	67	1.9
73 or more	68	1.9

(c) Where the values specified in paragraph (b) of this section are not met, pneumoconiosis may nevertheless be found disabling if a physical performance test establishes a chronic respiratory or pulmonary impairment which is medically the equivalent of the values specified in the table in paragraph (b) of this section. Any decision with respect to such medical equivalence shall be based on medically accepted clinical and laboratory diagnostic techniques including a medical judgment furnished by one or more physicians designated by the Administration.

(d) Where a ventilatory study and/or a physical performance test is medically contraindicated, or cannot be obtained, or where evidence obtained as a result of such tests does not establish that the miner is totally disabled, pneumoconiosis may nevertheless be found totally disabling if other relevant evidence (see §410.414(c)) establishes that the miner has (or had) a chronic respiratory or pulmonary impairment, the severity of which prevents (or prevented) him not only from doing his previous coal mine work, but also, considering his age, his education, and work experience, prevents (or prevented) him from engaging in comparable and gainful work.

(e) When used in this section, the term *age* refers to chronological age and the extent to which it affects the miner's capacity to engage in comparable and gainful work.

(f) When used in this section, the term *education* is used in the following

sense: Education and training are factors in determining the employment capacity of a miner. Lack of formal schooling, however, is not necessarily proof that a miner is an uneducated person. The kinds of responsibilities with which he was charged when working may indicate ability to do more than unskilled work even though his formal education has been limited.

§ 410.428 X-ray, biopsy, and autopsy evidence of pneumoconiosis.

(a) A finding of the existence of pneumoconiosis as defined in § 410.110(o)(1) may be made under the provisions of § 410.414(a) if:

(1) A chest roentgenogram (X-ray) establishes the existence of pneumoconiosis classified as Category 1, 2, 3, A, B, or C according to:

(i) The ILO-U/C International Classification of Radiographs of Pneumoconioses, 1971; or

(ii) The International Classification of Radiographs of the Pneumoconioses of the International Labour Office, Extended Classification (1968); or

(iii) The Classification of the Pneumoconioses of the Union Internationale Contra Cancer/Cincinnati (1968).

A chest roentgenogram (X-ray) classified as Category Z under the ILO Classification (1958) or Short Form (1968) will be reclassified as Category 0 or Category 1 and only the latter accepted as evidence of pneumoconiosis. A chest roentgenogram (X-ray) classified under any of the foregoing classifications as Category 0, including subcategories o/–, o/o, or o/1 under the UICC/Cincinnati (1968) Classification, is not accepted as evidence of pneumoconiosis; or

(2) An autopsy shows the existence of pneumoconiosis, or

(3) A biopsy (other than a needle biopsy) shows the existence of pneumoconiosis. Such biopsy would not be expected to be performed for the sole purpose of diagnosing pneumoconiosis. Where a biopsy is performed for other purposes, however (e.g., in connection with a lung resection), the report thereof will be considered in determining the existence of pneumoconiosis.

(b) The roentgenogram shall be of suitable quality for proper classification of the pneumoconioses and conform to accepted medical standards. It should represent a posterior-anterior view of the chest, and such other views as the Administration may require, taken at a preferred distance of 6 feet (a minimum of 5 feet is required) between the focal point and the film on a 14 × 17 inch or 14 × 14 inch X-ray film. Additional films or views should be obtained, if necessary, to provide a suitable roentgenogram (X-ray) for proper classification purposes.

(c) A report of autopsy or biopsy shall include a detailed gross (macroscopic) and microscopic description of the lungs or visualized portion of a lung. If an operative procedure has been performed to obtain a portion of a lung, the evidence should include a copy of the operative note and the pathology report of the gross and microscopic examination of the surgical specimen. If any autopsy has been performed, the evidence should include a complete copy of the autopsy report.

§ 410.430 Ventilatory studies.

Spirometric tests to measure ventilatory function must be expressed in liters or liters per minute. The reported maximum voluntary ventilation (MVV) or maximum breathing capacity (MBC) and 1-second forced expiratory volume (FEV_1) should represent the largest of at least three attempts. The MVV or the MBC reported should represent the observed value and should not be calculated from FEV_1. The three appropriately labeled spirometric tracings, showing distance per second on the abscissa and the distance per liter on the ordinate, must be incorporated in the file. The paper speed to record the FEV_1 should be at least 20 millimeters (mm.) per second. The height of the individual must be recorded. Studies should not be performed during or soon after an acute respiratory illness. If wheezing is present on auscultation of the chest, studies must be performed following administration of nebulized broncho-dilator unless use of the later is contraindicated. A statement shall be made as to the individual's ability to understand the directions, and cooperate in performing the tests. If the tests cannot be completed the reason for such failure should be explained.