dyspnea, following exertion, to marked dyspnea upon the least exertion or even when at rest. The shortness of breath noted in advanced silicotics presents one peculiarity in that it is seldom accompanied by orthopnea, the individual being no more short of breath lying down than when in an upright position. This may not be so, however, when silicosis is complicated by cardiac disease or by true asthma.

Silicosis	Silicosis with infection
If present at all, noted as a rule only after sudden or extra exertion. Seldom so marked as to interfere with routine duties. However, in cases with extensive pulmonary fibrosis, it may limit the individual's activities	If complicating infection is not widespread, may be no more marked than in cases of simple silicosis but as infection and fibrosis increase, it becomes disabling.

Cough. Many silicotics complain of a troublesome cough. This cough differs from that resulting from simple irritation due to dust which clears up upon removal from exposure. When present, it is more pronounced in the morning or upon beginning work after a rest period.

Silicosis	Silicosis with infection
The typical silicotic cough is dry and nonproductive. It usually parallels shortness of breath in degree and may contribute to disability.	The cough usually becomes more troublesome and is productive. The sputum varies from thick, tenacious, mucous material to that of a foul, purulent or purohemorrhagic consistency. Microscopic examination or animal inoculation frequently reveals tubercle bacilli or, in some cases, organisms of the fusiform spirochetal group. In advanced cases, coughing attacks are often of such severity as to leave the individual exhausted.

Chest Pain. This symptom is complained of by a majority of silicotics. It varies from a feeling of tightness in the chest to the sharp pain typical of pleurisy. (Since chest pain is offered as a complaint in many conditions, it cannot be stressed as especially characteristic of silicosis.)

Silicosis	Silicosis with infection
A late symptom in cases of simple silicosis. Then seldom more than a sense of tightness or feeling of substernal pressure.	Pleuritic pain is suggestive of a complicating infection. It is increased by exercise and by coughing and may be distressing in advanced cases with extensive infection.

Hemoptysis. True hemoptysis seldom occurs. Frequently, however, the sputum may be blood-streaked following a severe coughing attack. Hemoptysis must always be considered suggestive of tuberculosis.

Silicosis	Silicosis with infection
Occasional blood-streaked sputum. May result from alveolar rupture following sudden exertion in advanced cases.	May be the first indication of tuberculous infection. May be consequent upon the development of pneumothorax. May occasionally be excessive if cavities are present.

General Complaints. Weakness, loss of weight, digestive disturbances, night sweats, insomnia, dizziness, and edema of the extremities are not characteristic of uncomplicated silicosis but are apt to be present if infection supervenes, especially when the infection becomes extensive.

OBJECTIVE SYMPTOMS: Changes in the general appearance are infrequent in simple silicosis unless far advanced. Such changes as are manifested are usually due to complicating conditions.

Silicosis	Silicosis with infection
Early cases appear unchanged; in fact, it is common to find these individuals showing a slight increase in weight, possibly because they are less active. As the disease progresses, respiratory embarrassment is noticeable and there is a general loss of muscle tone.	The appearance sooner or later becomes that of chronic phthisis. The bony landmarks of the thorax become prominent and there is an increase in the anterior-posterior diameter of the chest, possible hypertrophy of the accessory respiratory muscles of the chest, and in the final stages, retraction of the supra and infra clavicular spaces. Cyanosis and clubbing of the fingers are not prominent except in those cases of long standing, with cardiac disturbances.

Chest Expansion. Decrease in the expansion of the chest may be demonstrated in cases with extensive pulmonary fibrosis.

Silicosis	Silicosis with infection
In early cases it is usually not possible to demonstrate decreased expansion. In advanced cases, expansion may be lessened by 20 to 30 per cent but remains equal on both sides.	Decrease in expansion may not be noted in early silicosis with slight infection but as the condition progresses, a definite decrease is readily observed. When infection is more pronounced in one area of the lung, expansion may be more markedly decreased on the affected side, particularly if there is pleural involvement.

Prolonged Expiration. In most cases, decreased chest expansion is preceded and later accompanied by a definite change in respiratory rhythm. Close observation reveals that even at rest there is a distinct tendency to prolongation of the expiratory phase, which, as silicosis advances, becomes more marked. Following exercise, the silicotic may breathe less rapidly than the normal person under similar conditions as the lungs cannot be emptied rapidly enough to permit more rapid respiration; but although the respiratory rate is not so rapid as in the normal person, it will persist for a longer period.

Silicosis	Silicosis with infection
Early in the development of a simple silicosis prolonged expiration may be evident only after exertion. Later the degree of prolongation usually parallels the increase in pulmonary fibrosis.	In cases of early silicosis with slight infection, prolongation of the expiratory phase may be no more marked than in simple silicosis. As the condition progresses and fibrosis increases, it may simulate characteristic asthmatic respiratory rhythm.

Signs Revealed by Palpation of the Chest. Except in the late stages of silicosis with infection, little is revealed by palpation of the chest. However, where there is a measurable decrease in expansion, one may note by palpation that, upon forced inspiration, the anterior chest wall is lifted forward by the accessory muscles of respiration.