

PULMONARY FUNCTION TESTING

Chronic Pulmonary Disease:

With the decrease in the acute respiratory illnesses such as pneumonia and the ability to cure chronic infective respiratory diseases such as tuberculosis a whole class of chronic respiratory diseases have been revealed as a major cause of disability and death. The chronic respiratory diseases now share with cardiovascular disease the responsibility for causing the majority of the deaths due to disease in the United States and the incidence of chronic respiratory disease is increasing faster than that for cardiovascular disease. There are many reasons for this increase in the number of diagnosed cases of chronic pulmonary disease among which are changes in diagnostic emphasis, improved diagnostic tools, as well as an apparent real increase in the incidence of the disease. This increase in the number of cases diagnosed has led to a quadrupling of the mortality due to emphysema and chronic bronchitis in the past ten years; the mortality rate is now growing faster than for any other disease.

From the above review and the accompanying tables and charts it is apparent that chronic respiratory diseases are important causes of death and disability at this time. It is also apparent that this importance is likely to increase in the future.

The Detection of Chronic Pulmonary Disease:

Due to the tremendous reserve capacity of the respiratory system, encroachment by disease processes can often proceed to an advanced stage before the interference with function becomes apparent to the individual. At this stage of the disease there is often little or nothing that can be done to remedy the situation. To detect the early and often treatable stages of the disease relatively sophisticated techniques are required and these techniques can now be used in the field to screen large numbers of people in a short time.

Why Should Du Pont be concerned with Pulmonary Function?

1. Pulmonary function has been one of the last of the human body's functional systems to become available for useful examination. Routine physical examination and questioning of the employee can reveal the state of function of the kidneys, cardiovascular system, gastrointestinal tract, and nervous system with a fair measure of precision. The respiratory system can now be examined in a similar, precise manner and such examinations should become part of the regular physical examination of all employees over thirty-five years of age. The Du Pont Company has advocated the regular medical examination of all its employees for many years and it would merely be a logical extension of the regular employee medical examination to add periodic pulmonary function testing.

2. When a disease or aging process is common in the general population a certain percentage of persons will wonder whether the occupational environment is not playing a part in the causation, perpetuation or aggravation of the condition. With good data from health examinations from a large enough group of employees it becomes comparatively easy to see whether the incidence of any particular disease or degenerative process is greater within a particular occupational group than in the group as a whole or the population outside the plant. If the incidence is the same or less, it is highly unlikely that a particular individual's complaint is work connected. Adequate health examinations provide a quality control chart which can detect an unusual incidence of a disease in any particular plant or an area within the plant. Used properly this type of data is a powerful tool in detecting true environmental hazards or in refuting false claims of ill effects. Pulmonary function testing is part of gathering adequate data on the health of Du Pont employees. With the rising number of cases of chronic respiratory disease other companies are already experiencing a great increase in claims alleging an occupational cause for such diseases. To be effective in combating false claims a pulmonary function program must be started early so that the natural history of the condition in the plant and outside of the plant can be known and this information used as a point of reference in considering later claims.

3. Particular industrial operations may be or may be thought to be associated with an increased risk of pulmonary disease. In such cases a more detailed account of the pulmonary function of the workers engaged in these operations is required. Examples of such situations are the employees in the spinning areas of the textile plants and the workers engaged in handling asbestos. If the true incidence of a disease process is not known, the magnitude of the problem is not known and the steps that are justified in dealing with the situation can not be decided upon. Chronic pulmonary disease by definition takes a long time to develop and by the time an occupational cause is suspected hundreds or thousands of employees may have been exposed with obvious consequences to the number of claims that may be expected. With an adequate program of pulmonary function testing the time between the onset of the exposure and the first suspicion of the occupational causation of the disease can be greatly reduced and therefore the number of persons at risk can be greatly reduced.

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