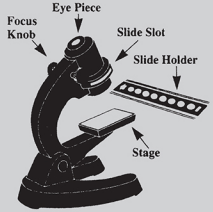
INSERT HERE

MICRO-SLIDE-VIEWER™



Face the Micro-Slide-Viewer so that as much light as possible falls on the white Stage.

Insert the numbered end of the Slide Holder into the Slide Slot of your Viewer, moving it from your right to left.

View with your eye close to the Eye Piece.

With Slide No. 1 in place, focus by turning the Focus Knob.

NATIONAL TEACHING AIDS, INC.
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1-800-289-9299

7 FIBROSIS AND EMPHYSEMA LUNG TISSUE x.s. - (65x)

Two serious lung tissue conditions are indicated in this Microslide:

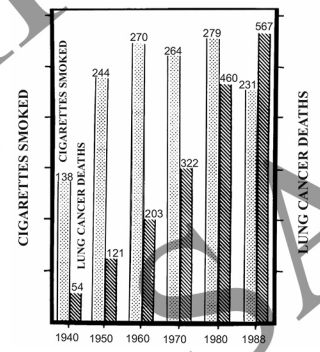
FIBROSIS- increase of tough, dense, fibrous connective tissue resulting in loss of elasticity and thickened air sac walls.

EMPHYSEMA- enlargement of air sacs and rupture walls. There is also a reduction in the capillary network. Visualize the respiratory difficulties faced by a person with these conditions. How would loss of elasticity affect breathing? How would gas exchange be affected by thickened air sac walls, or by ruptured air sacs, or by reduction of capillaries? Fibrosis and emphysema produce scarred, shrunken, useless lungs. The person wheezes, coughs, and gasps for breath until he dies.

8 CANCER - LUNG TISSUE - x.s. - (5x)

This is a section from the lung of a person who died of lung cancer. Notice that the lung tissue at (C) is completely filled in by cancer cells. Not an air space is left. Invasion by cancer cells has begun in the rest of the lung as well. Most cases of lung cancer are already so advanced when discovered that they are incurable. About 139,000 Americans died of it in 1988. The graph compares the annual lung cancer death rate with the average number of cigarettes smoked per 100,000 persons in the United States. *What conclusion would you draw from this graph? How do you explain the fact that cigarette consumption has begun to decline but the death rate continues to climb?*

The decision to smoke or not to smoke is one which you must make for yourself. This set should help you make the right decision.



Graph Data: Economic Research Service, USDA; American Cancer Society; U.S. Census Data

Microslides: 2,3,4,7 by Dr. Oscar Auerbach, Senior Medical Investigator, Veterans Administration Hospital, East Orange, New Jersey.

SET 73

SMOKING AND HEALTH

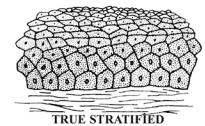
In 1964, the Surgeon General of the United States issued a report entitled **SMOKING AND HEALTH**. This report showed a close and statistical parallel between the increase in cigarette smoking and lung cancer. The report concluded that cigarette smoking accounts for a tenfold increase in the risk of developing lung cancer and a sixfold increase in the risk of developing bronchitis and emphysema.

In 1989, the Surgeon General issued a new report entitled **REDUCING THE HEALTH CONSEQUENCES OF SMOKING: 25 YEARS OF PROGRESS.** This set cannot possibly present all of the data and information in the two reports. It can only hope to acquaint you with some changes that may occur in the lungs and respiratory linings of persons who smoke.

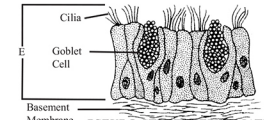
The magnification given, for example, Microslide 1-(175x) means that the microscope was set at that power when the photograph was taken.

1 NORMAL BRONCHIAL EPITHELIUM x.s. - Stained (175x)

This microslide shows the very special kind of epithelium (E) which normally lines the air passages of the respiratory tract. It is know as *pseudo-stratified ciliated columnar epithelium*. Let us analyze this name. *Pseudo-stratified* refers to the cell arrangement. True stratified epithelium has many layers of cells. Respiratory epithelium is not in real layers since its cells reach down to the basement layer (B). Hence it is pseudo (counterfeit) stratified. While all the cells reach the basement membrane, they do not all extend to the surface (see diagrams). *Ciliated* indicates that the tops of the tall cells are covered with cilia. *Columnar* refers to the column-like shape of those cells that you see reaching the surface in the Microslide. The clear-looking tall cells are **GOBLET CELLS;** one-celled mucus producing glands. This epithelial lining plays an active part in removing unwanted particles from the air passages. The sticky mucus from the goblet cells traps germs, dust, and other solids. The beating cilia push the mucus and its unwanted matter upward towards the mouth and nose, for elimination.



TRUE STRATIFIED SQUAMOUS EPITHELIUM



PSEUDO-STRATIFIED CILIATED COLUMNAR EPITHELIUM

By PHILIP GOLDSTEIN