

MEDICINE

Women Nicotine Sensitive

Age as well as sex seems to make a difference in the responses to effects of cigarette smoking, tests made with radioactive iodine in blood albumin show.

► WOMEN ARE "much more sensitive" to nicotine and other tobacco products than men. Cigarette smoking tests showing this are reported by Dr. Morris Friedell of the Hektoen Institute for Medical Research, Cook County Hospital, Chicago, to the *Journal of the American Medical Association* (July 4).

In his tests of 100 men and women, Dr. Friedell found that 79 were sensitive as shown by changes in blood circulation to ordinary cigarette smoke. This means, he points out, that one out of five who smoke show no response to a single cigarette, at least by his method of testing.

When the newly developed, highly efficient, filtered cigarettes were tried, 34 persons, or one out of three, showed no response to the smoke from the filtered cigarettes.

Women responded somewhat better than men to these special filter cigarettes.

"The principle of filtration of tobacco smoke is probably a good one and should be used by both men and women," he advises. "Women evidently need it more than men."

Age as well as sex seems to make a difference in response to effects of cigarette smoking. Many of those over 35 in the group did not show change. Dr. Friedell thinks this is either because they do not inhale, or because the blood vessels near the surface of the body are less sensitive in the older persons. Those over 40, he believes, can smoke without immediate changes in circulation near the body surface and in fingers and toes.

The tests were made with radioactive iodine in blood albumin. This is injected into a vein and five to 10 minutes later is well mixed with the blood in the general circulation. Changes in circulation then can be told from measuring with a scintillation counter the changes in radioactivity in the fingers.

The group tested consisted of 52 men aged 21 to 70, and 48 women aged 17 to 61. All had presumably normal circulation. During the test each smoked for four minutes at a rate that consumed two-thirds of one cigarette in that period. Cigarettes of standard size in popular brands selected at random as well as the special filter type cigarettes were used.

The greater sensitivity of women, Dr. Friedell believes, is due to their having a more unstable, elastic blood vessel system. It probably accounts for two factors:

"1. Women who enjoy the reaction of tobacco become deeply habituated, continue to smoke and find it hard to break the

habit; 2. Men who get less reaction from smoking probably will smoke more cigarettes."

Science News Letter, July 18, 1953

MEDICINE

Filter Tips Remove Little of the Nicotine

► FILTER TIPS on cigarettes remove very little of the total nicotine in the smoked portion of the cigarette, the American Medical Association reports.

The report is based on tests carried out in the association's chemical laboratory at the request of its advertising committee. These tests were done by Robert R. Stark of the laboratory staff under its director, Dr. Walter Wolman.

Of six filter tips tested, the most efficient seemed to be one made of asbestos laminated with paper. With this tip only eight percent of the nicotine in tobacco actually smoked is transferred to the mainstream smoke and thus reaches the smoker's mouth. The amount in a regular, all-tobacco cigarette is 21%.

However, the most efficient of the filter tips tested has now been modified. The filter is more loosely packed, apparently in an effort to improve the smoking qualities. As a result, the nicotine transferred to the smoker's mouth has risen to 13%.

The other filter tips tested were made of paper, fiber and cotton. Included in the tests were the three largest selling filter tip cigarettes on the market.

The report concludes by pointing out that calculations can be "contrived" to show low percentages of nicotine in mainstream smoke by using the same test figures but choosing a different base for the calculations.

By basing the calculation on the total weight of the cigarette, for example, the figure 0.25% (one-quarter of one percent) nicotine in the smoke of a regular brand of cigarette can be obtained.

Science News Letter, July 18, 1953

TECHNOLOGY

New Building Envelops Kansas City Rock Mound

► AN EIGHT-STORY building, bigger at its top than at its bottom, has been designed to sit on a big rock mound that so far has baffled building constructors.

The rock mound, situated near the downtown business area in Kansas City, Mo., is a natural formation. It is so extensive, how-

ever, that no attempt has been made to put a building on it.

The building, new general headquarters of Hallmark Cards, is designed to take full advantage of the natural rock formation. The building will go "over and around" the rock mound to minimize excavation.

The top floor will overlay the entire mound and will have 20 times more area than the ground floor. Architects also are taking advantage of the sloping terrain around the building site. The slope is such that an automobile ramp will be built directly from surrounding streets to all floors in the building. The building's roof will serve as a 400-car parking lot.

In addition, the structure will sport a functional zoo and a greenhouse. Animals and plants will be used by Hallmark's artists in the production of greeting cards.

Science News Letter, July 18, 1953

AERONAUTICS

Waste From Power Plant Makes Jet-Proof Runway

► A RUNWAY material that resists the terrific heat of jet engine exhausts has been developed by scientists of the Philadelphia Electric Co.

Tests of the substance, which largely is composed of waste products recovered from the utility's big furnaces, show that it withstands temperatures up to 2,400 degrees Fahrenheit. Present concrete runways made with Portland cement sometimes melt under the severe blast of the jet exhausts.


The material furthermore is not affected by spilled jet engine fuel. Ordinary aviation fuels usually do not harm concrete runways. But slow-evaporating jet fuels seep into the concrete and attack it.

Composed of fly ash, lime and coal slag, a sample of the material was tested for 15 seconds in the 2,000-degree exhaust of a kerosene-oxygen rocket engine. The sample melted only 1/64-inch below its surface. No other detrimental effects were noted. The speed of the exhaust gases reached several thousand feet a second.

The inexpensive material was tested by the Corps of Engineers and the Westinghouse Electric Corporation, reports *American Aviation* (June 22).

Science News Letter, July 18, 1953

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