



A YOUNG ESKIMO from Pt. Hope, Alaska, exercises on a motor-driven treadmill as scientists monitor the data to determine physical fitness. The test was part of a five-year study led by Dr. Frederick A. Milan of the University of Alaska.

Results showed 80 per cent of the Eskimo population were physically fit compared to only 20 per cent of the U.S. general population. The Eskimos were similar to Italian Olympic sprinters in "anaerobic power." (UA Photo).

Eskimos Said to Have 'Maximal Anaerobic' Power

FAIRBANKS—The winds of gale force today along the coast of Northern Alaska, sweeping

away much of the traditional Eskimo way of life. With this change has come new problems.

While a snowmobile expands a hunting zone, it also requires money for maintenance and fuel, and many Eskimos are now being forced to seek employment in order to earn it. Unfortunately, this shift from their traditional life of hunting and fishing has been accomplished by a breakdown of Eskimos' general health as well as their life style, scientists have determined.

A five-year scientific study to find out how the Eskimo people have adjusted to these changes was begun in 1968 by scientists from Canada, France, Denmark and the United States.

Dr. Frederick A. Milan of the University of Alaska led the team of 36 international scientists who worked in the Alaska villages of Wainwright, Point Hope, Barrow, Kaktovik, and Anaktuvuk Pass.

Milan is a professor of anthropology with a joint appointment at the university's Institute of Social, Economic and

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Anaerobic Power . . .

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Government Research and the Institute of Arctic Biology.

The study showed there were problems with ear infections, tooth decay, and tuberculosis; calcium, riboflavin, vitamin C, and fluoride deficiencies; and a decreased ability to digest sugars.

Milan is editing a book synthesizing the Alaskan results of the Eskimo adaptability study. It will be published in 1974. Publication of another volume containing the results of the four-nation Eskimo study as well as other International Biological Program studies is expected at a later date.

"We feel that our work might be of assistance to Alaska's Native people at this critical time in their development," said Milan. "We have already published 20 papers on the work in various scientific journals; anyone interested in the data can contact me at the Institute of Social, Economic and Government Research, University of Alaska, Fairbanks."

"The U.S. study was a part of a five-year research project sponsored by the International Biological Program," said Milan. "This program of international cooperation supported by the National Institute of Health involves many areas of scientific research. Our study of Eskimo adaptability was a part of the larger Human Adaptability program conducted by scientists from many nations, cooperating to share their results."

"In our study of Eskimo adaptability, the research techniques used were standardized with those used in Canada, and with those used by the French and Danish in Greenland," he said. "This standardization of techniques was of major importance because we were thus able to compare data across national boundaries."

The U.S. study took place mainly in Wainwright, a village of 300 persons located on Alaska's north coast on the Arctic Ocean. The principle object of the study was to find out how the behavior and biology of the isolated villagers had adapted to allow them to survive in the hostile northland.

There were five major research areas: general health, diseases and physical performance, growth, nutrition and ecology.

It was found that the Eskimos at Wainwright are basically healthy, but they do have certain chronic disorders, including ear infections and tuberculosis of the lungs.

In 1968 nearly half of the general population had a history of tuberculosis, although only 18 per cent of the children had been affected due to control measures instituted in recent years by the U.S. Public Health Service.

Dental health had declined over the last 20 or 30 years due to changing foods. Eight times more decayed or missing teeth were found in Wainwright than in the Canadian village of Igloolik where there has been little change in the traditional way of life.

Eskimos over 40 were found to have 12 per cent less bone mineral than whites of the same

age. Also, many have osteoporosis, a degenerative bone disorder. Thus, older Eskimos are more susceptible to bone fracture, but the low bone mineral seems to be tied to the traditional Eskimo diet rather than to modern changes.

The traditional Eskimo diet of walrus, caribou, seal, whale, fish and berries was one of the most specialized high-protein and fat, low-carbohydrate diets in the world. Since animal protein is high in phosphorous, and the Eskimo diet is low in calcium, the loss of bone minerals may be due to an imbalance in calcium-phosphorous intake.

While a modern diet with less protein might be useful in controlling loss of calcium, it brings other problems.

The amount of carbohydrates eaten as starch and sugar has increased in recent years, but the study showed that the villagers at Wainwright and Point Hope can have difficulty digesting too much milk, and their body chemistry cannot handle milk-sugar and other food sugars.

Thus the villagers were not adapted to many processed foods now available in local stores.

"The changes in diet seemed to have resulted in reduced amounts of riboflavin, a B vitamin found in larger amounts in milk and liver," said Milan. "There was also a lack of vitamin C, and a lack of fluoride was indicated by the amount of tooth decay, especially in younger Eskimos who consume large quantities of sugar in soft drinks and candy."

A relatively high level of cholesterol in the blood of Eskimos at Point Hope indicated that there is a potential danger of heart attacks and hardened arteries if more cholesterol, which is found in animal fat, is added to the diet," he said.

Although these various problems were discovered by the study, it was also found that today's Eskimos are two or three inches taller than their ancestors in the late 1800's.

And the Alaskan Eskimos are much more physically fit than comparable white populations in the United States, and they also maintain this fitness into old age. They have an unusually high capability for "maximal anaerobic power," the ability to work in short, explosive bursts.

"This capacity is probably of great survival value in the cold, hostile environment of the Arctic Coast," said Milan.

The movement of many younger Eskimos, especially young women, from the villages to Alaskan cities such as Fairbanks is increasing, often resulting in a lack of marriageable women in the villages.

There is evidence that assimilation into Alaskan cities is difficult for some villagers. Performance of Eskimo children on behavior tests, however, predicted their success in school and jobs would be similar to children from an isolated rural community in Illinois.

This indicates that the future adult resident of Northern Alaska will be able to adjust well to the cultural changes in their lives.