

Seasonal Variation in Efficiency of New Orleans Sunshine and
Skyshine in Preventing and Curing Rickets in Rats.*

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Rats, fed the Steenbock and Black rickets-producing diet, were divided into groups at the time of weaning and exposed to sunshine and skyshine for varying lengths of time between 10:00 A. M. and 1:00 P. M. Diagnosis was based on line tests, roentgenograms, and blood phosphorus determinations. The duration of the experiments was usually 5 weeks, being prolonged when the controls did not show florid rickets within this time.

During June, 1929, an average daily exposure to sunshine of 3 minutes prevented rickets, during July 9.5 minutes and during October 5 minutes. The average daily exposure to sunshine is frequently less than the actual time out of doors because of cloudy weather. Since no indications of rickets were present shorter exposures would certainly have been sufficient. From November 16 to December 20, 1929, an average daily exposure of 10 minutes afforded protection but 5 minutes did not. From December 5 to January 17 rats given an average daily exposure of 14 minutes developed mild rickets, as did those exposed for from 2 to 5 minutes from January 17 to March 31. An average daily exposure of 6 minutes from March 29 to May 1, however, was protective.

During June, 1929, an average exposure to skyshine for 8 minutes daily was insufficient. During July, 24 minutes was borderline, and 48 minutes afforded complete protection. During October, November and December exposures of 22 to 24 minutes were protective, as was an average daily exposure of 67 minutes from January 3 to February 14. From February 10 to March 24 incomplete protection was afforded by 28 minutes' exposure, while 47 minutes during April was just borderline.

Such observations will be made for several years. Rats are also being exposed under some of the ultraviolet transmitting screens. In these observations and in those on chicks the total amount of energy and its spectral distribution was determined nearly every time the animals were exposed.

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