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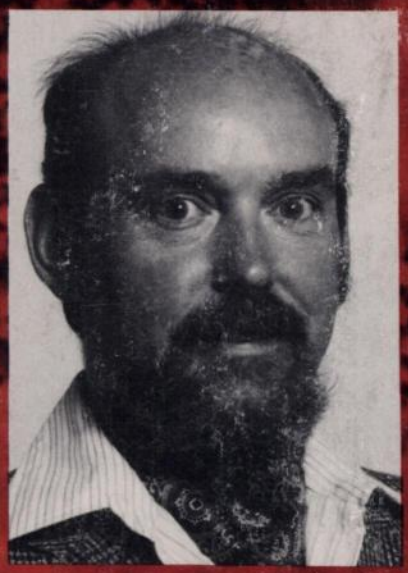
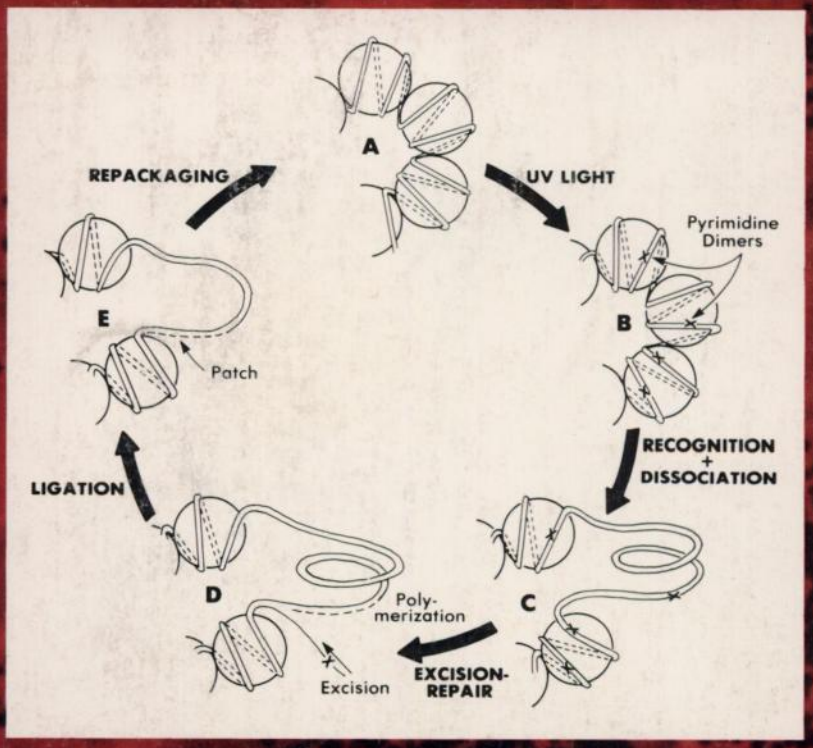
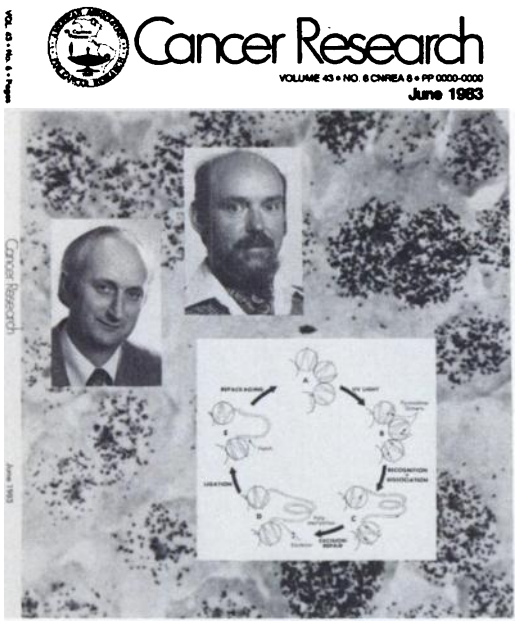




COVER LEGEND



Xeroderma pigmentosum (XP) was described and named by Moriz Kaposi in 1863 (*Classics in Clinical Dermatology*, p. 72. W. B. Shelley and J. T. Crissey (eds.), Springfield, Ill.: Charles C. Thomas, Publisher, 1953). It is a rare hereditary disease caused by an autosomal recessive gene, in which the skin is extremely sensitive to ultraviolet (UV) radiation and soon develops multiple skin cancers. Cancers of internal organs are also occasionally reported.

James E. Cleaver (*upper right*), Professor of Radiology at the University of California Medical Center in San Francisco, discovered in 1968 that DNA repair of fibroblasts from skin of XP patients was defective (Nature, *216:* 652, 1968). The graph pictures the excision repair cycle at the level of nucleosomal structure; transient loosening of the DNA-histone structure causes the regions to be temporarily nuclease sensitive and facilitates repair (Nature, *270:* 451, 1977). The process is reduced in XP-derived skin fibroblasts.

Dirk Bootsma (*lower left*), Professor in the Department of Cell Biology and Genetics of the Erasmus University, Rotterdam, The Netherlands, demonstrated the genetic heterogeneity of XP. (Nature, *238:* 80, 1972). There are now seven excision-defective groups, A through G, and one variant group associated with defective replication of UV damage of DNA.

XP patients exhibit sun sensitivity, abnormal pigmentation, and impending UV-induced cancers together with microcephaly, mental retardation, and central nervous system disorders.

The background of the cover is of DNA repair (unscheduled synthesis) in human cells exposed to UV and labeled with tritiated thymidine.

We are indebted to Dr. James E. Cleaver for the information and illustrations. The graph of the repair cycle is from Cleaver J. E., DNA repair processes and their impairment in some human diseases. *In:* D. Scott, B. A. Bridges, and F. H. Sobels (eds.), Progress in Genetic Toxicology (Developments in Toxicology and Environmental Science, Vol. 2, pp. 29–42, Amsterdam, New York: Elsevier, 1977.

M. B. S.