

CANCER—THE PATIENT  
AND THE FAMILY

SYMPOSIUM

HELD

IN THE EDWARD LUMLEY HALL

AT

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND

LINCOLN'S INN FIELDS

LONDON, WC2A 3PN

ON 14th MAY, 1974

*Edited by*

RONALD W. RAVEN, O.B.E., O.S.T.J., T.D., F.R.C.S.

Publisher: John Sherratt and Son Ltd., Altrincham

we do not know what really is right. This is again what I hope will be one of the answers from the pilot schemes.

DR. F. J. C. ROE

*Q.* We often read that certain substances, e.g. tobacco smoke, have been proved to cause cancer in rats. In such experiments do some animals fail to develop cancer, and is there a chance that really fit humans would not develop cancer despite exposure to such substances? Or would all eventually die of cancer?

*A.* This question is concerned with three aspects of carcinogenesis: the significance of exposure dose, variation between animals in susceptibility to carcinogens, and the extent to which man resembles other animal species in the way he responds to carcinogens. There is abundant evidence that the greater the exposure of an animal or a human to a cancer-producing substance, the greater is the chance that cancer will develop. This is a general rule and is nearly always true. Laboratory studies show that there may be wide differences in susceptibility to a carcinogen between animals which seem very similar in other ways. Undoubtedly, humans also differ fairly widely in susceptibility to cancer-producing agents. However, we do not yet have any means of distinguishing more susceptible from less susceptible individuals. Moreover, there are many different types of carcinogen and it is possible that susceptibility to one type is associated with resistance to another type. In animals, genetic factors influence susceptibility to carcinogens, but this is only easy to see by comparing animals of different inbred strains. Because they avoid inbreeding, humans are heterogeneous. One would not therefore expect susceptibility to run in families. There is every reason to expect man to behave, in general, like other animal species. One would therefore expect among a population exposed to a carcinogen some to succumb and some to escape. Differences in exposure dose, susceptibility and perhaps just plain luck would determine into which group any individual fell.