

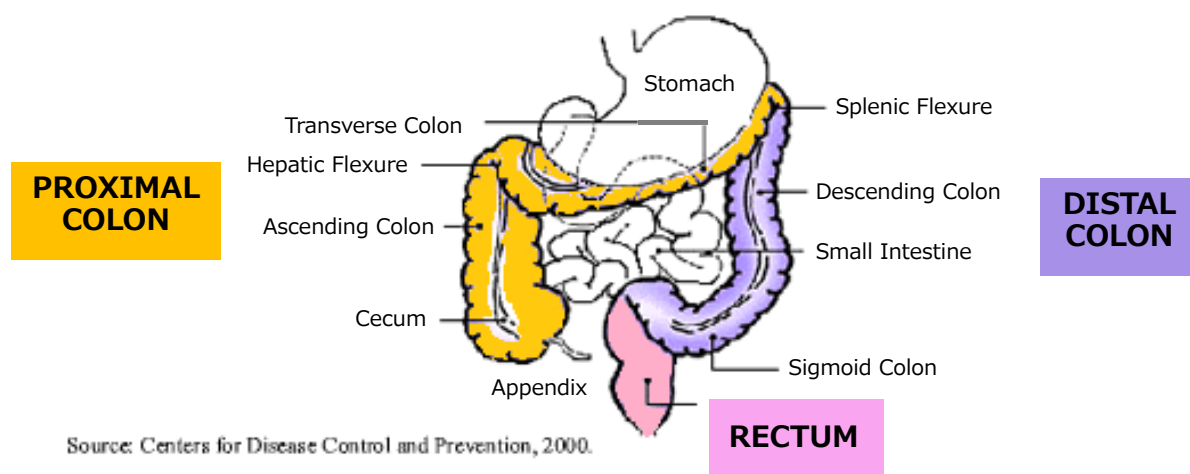
## Radiation risk of incident colorectal cancer by anatomical site among atomic bomb survivors: 1958-2009

This study examined, in 105,444 atomic bomb survivors, radiation effects on colorectal cancer rates, adjusted for lifestyle factors (smoking, alcohol intake, and meat consumption) and body mass index (BMI), by proximal colon, distal colon, and rectum (see image below).

For the 1958-2009 period, increased risks of the above cancers among atomic bomb survivors were observed. There were 2,960 primary\* cancers diagnosed, including 984 proximal colon, 871 distal colon, and 1,046 rectal cancers. While lifestyle factors and body mass index (BMI) were associated with specific cancer rates, they showed little effect on radiation risks. For total colon, proximal, and distal colon cancers, but not for rectal cancer, risk increased as radiation dose increased.

In conclusion, radiation is associated with increased risk of proximal and distal colon cancers. There continues to be no indication of radiation effects on rectal cancer rates in this population.

\*Primary cancer: A medical term used to describe the original, or first, tumor in a particular organ or site in the body, in this case, originating from the colon. Conversely, the process whereby cancer cells from a primary tumor spread to other parts of the body and form new tumors is called metastasis.



RERF's objective with this brief outline is to succinctly explain our research for the lay public. Much of the technical content of the original paper has been omitted. For further details about the study, please refer to the full paper published by the journal.