Editor-in-Chief

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Biography

- Dr. Fatih M Uckun $_{\text{M.D., Ph.D}}$ is a Professor of Pediatrics at the University of Southern California Keck School of Medicine and the Head of Translational Research in Leukemia and Lymphoma at the Children's Center for Cancer and Blood Diseases of the Children's Hospital Los Angeles.

- He is an elected Member of the Honor Society American Society for Clinical Investigation (ASCI) ("Young Turks") and an active member of several professional organizations.

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- He earned his doctoral degrees at University of Heidelberg and completed his residency training in pediatrics, fellowship training in hematology/oncology/stem cell transplantation, as well as postdoctoral research training in immunology at the University of Minnesota. He served at the University of Minnesota as a Professor of Pediatrics/Therapeutic Radiology/Pharmacology and Director of the Biotherapy Institute.

- Dr. Uckun served as Director of Research at Parker Hughes Institute in Minnesota before joining University of Southern California. Currently, he is a Full Professor in the Department of Pediatrics.

Research Interests

- Translational Research aimed at identifying new molecular targets in treatment of cancer and inflammatory disorders
- Targeted Nanoparticles; Biopharmaceuticals
- Molecular Epidemiology of Cancer
- Chemoprevention of Cancer; Epigenetic regulation of cancer growth
- Innate Immunity
- Signal transduction pathways

Publications

- Uckun FM (2013) *Monoclonal Antibody (mAb)-Based Biotherapy Options for B-lineage Non-Hodgkin's Lymphoma (NHL)*. Transl Med 3:e118
- JD'Cruz O, Uckun FM (2013) *Role of Kinase Inhibitors in Treatment of Lymphoid Malignancies*. Transl Med 3:e117.
- Uckun FM (2012) *Stat3-Syk Molecular Complex as A Target for Anti- Cancer Nanomedicines*. J Nanomed Nanotechol 3:e110.
- Yiv S, Uckun FM (2012) *Lipid Spheres as Attractive Nanoscale Drug Delivery Platforms for Cancer Therapy*. J Nanomedic Nanotechnol 2:128.

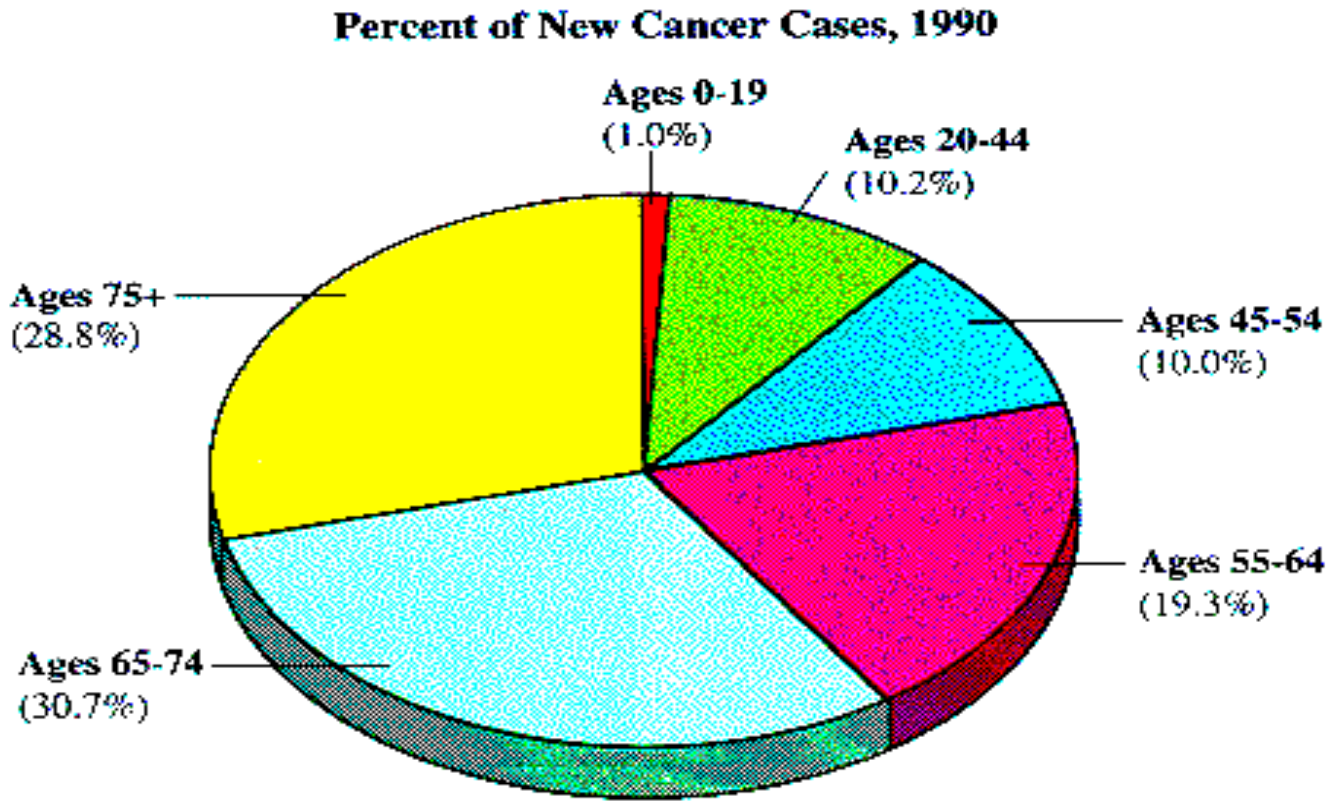
Nanoparticles

- Nanoparticles are particles between 1 and 100 nanometers in size. In nanotechnology, a particle is defined as a small object that behaves as a whole unit with respect to its transport and properties. Particles are further classified according to diameter.
- Ultrafine particles are the same as nanoparticles and between 1 and 100 nanometers in size. Coarse particles cover a range between 2,500 and 10,000 nanometers. Fine particles are sized between 100 and 2,500 nanometers.
- Nanoparticle characterization is necessary to establish understanding and control of nanoparticle synthesis and applications.

Epidemiology of Cancer

Cancer Incidence by Age

The contrast in cancer incidence by age is striking. Americans aged 65 and older face 10 times the risk of developing cancer compared with those under 65. The near-doubling in the annual number of new cancer cases for all ages -- from an estimated 625,000 cases in 1970 to 1,170,000 cases in 1993 – is largely due to the increasing population size and especially the disproportionate increase in the older population.



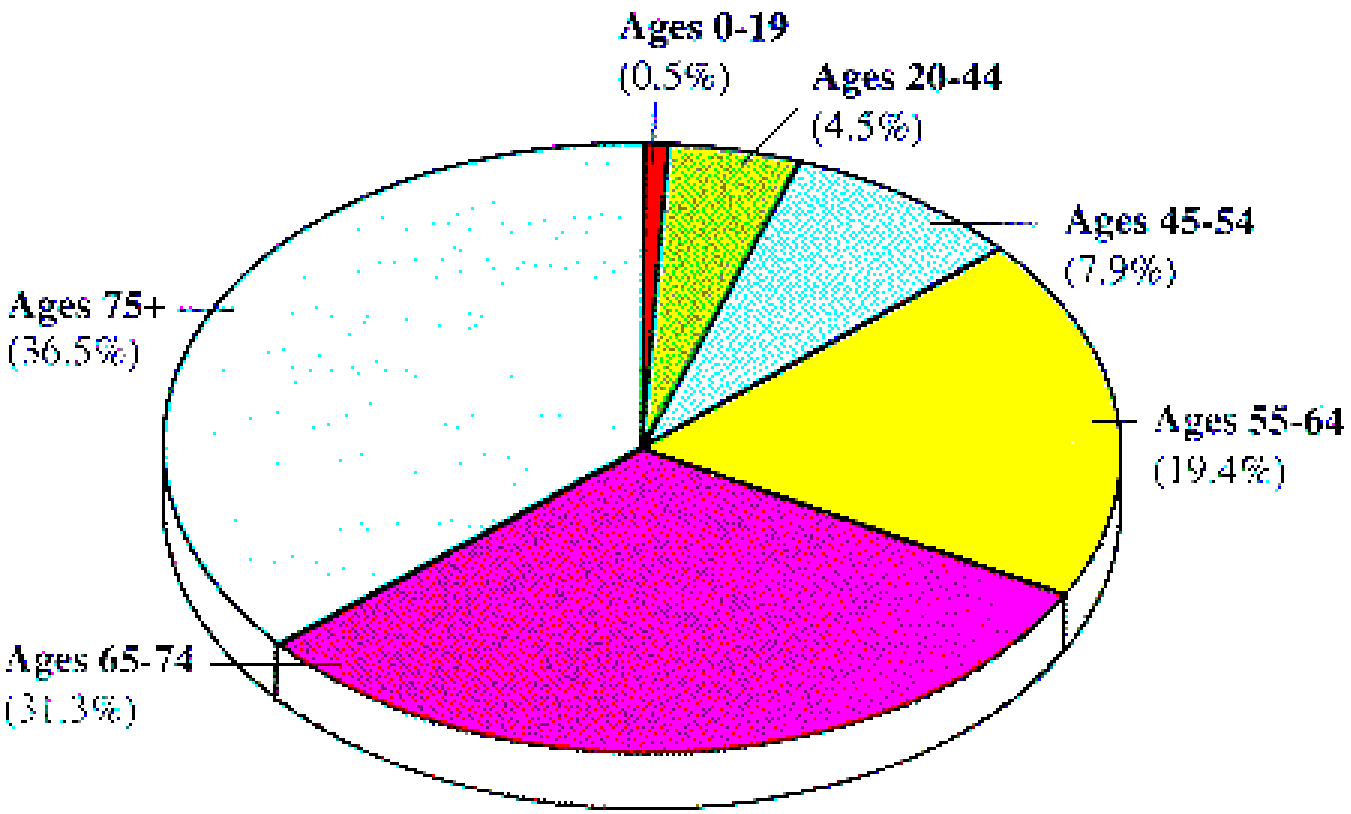
From JNCI, 1994

AgeStart.pcx

Cancer Mortality by Age

Americans age 65 and older account for about 67% of all cancer deaths nationwide. Mortality rates for all cancer sites combined (1986-90) were 75.4 per 100,000 persons under 65 and 1058.3 per 100,000 persons 65 and older. From 1973 to 1990, mortality rates decreased 0.2% per year for those under 65 and increased 0.9% per year for those 65 and older. The increase in the older group has been largely due to an increase in lung cancer deaths, although recent lung cancer mortality rates have leveled off among men.

Percent of All Cancer Deaths, 1990



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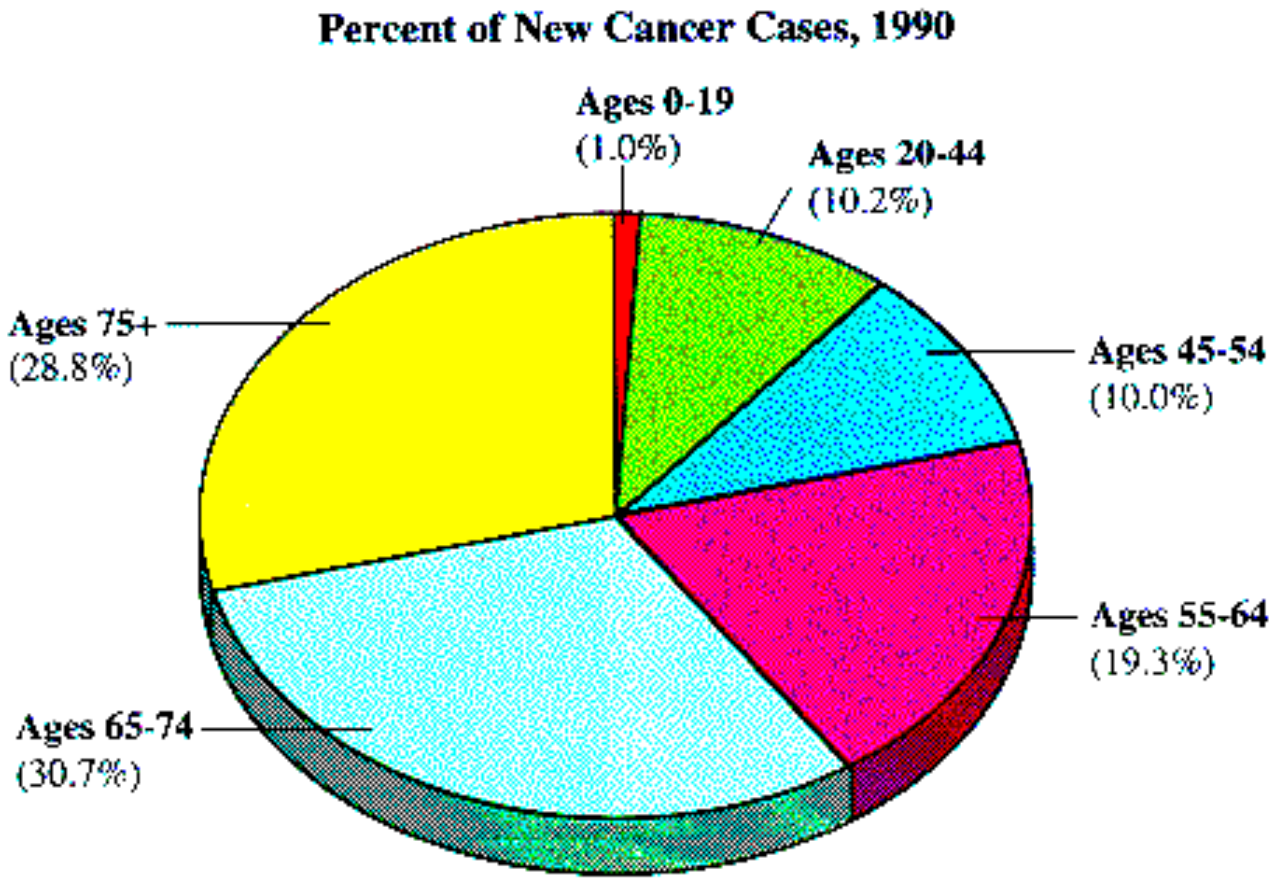

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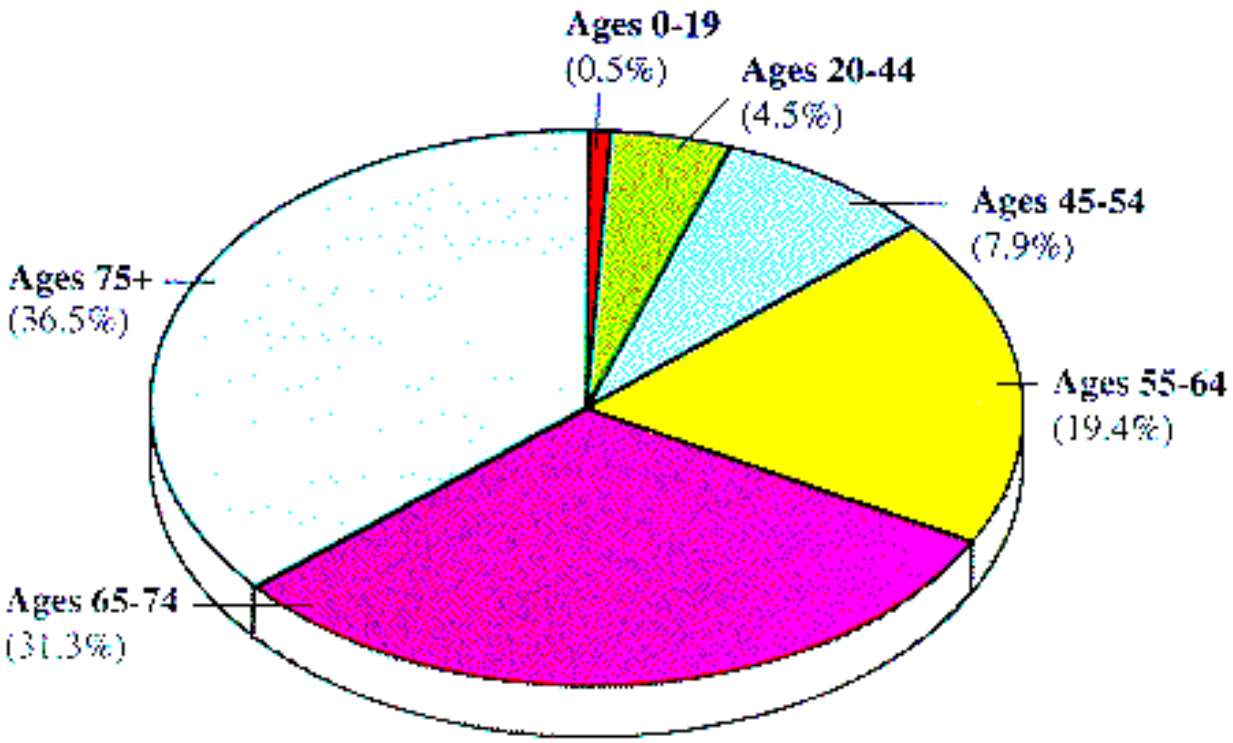

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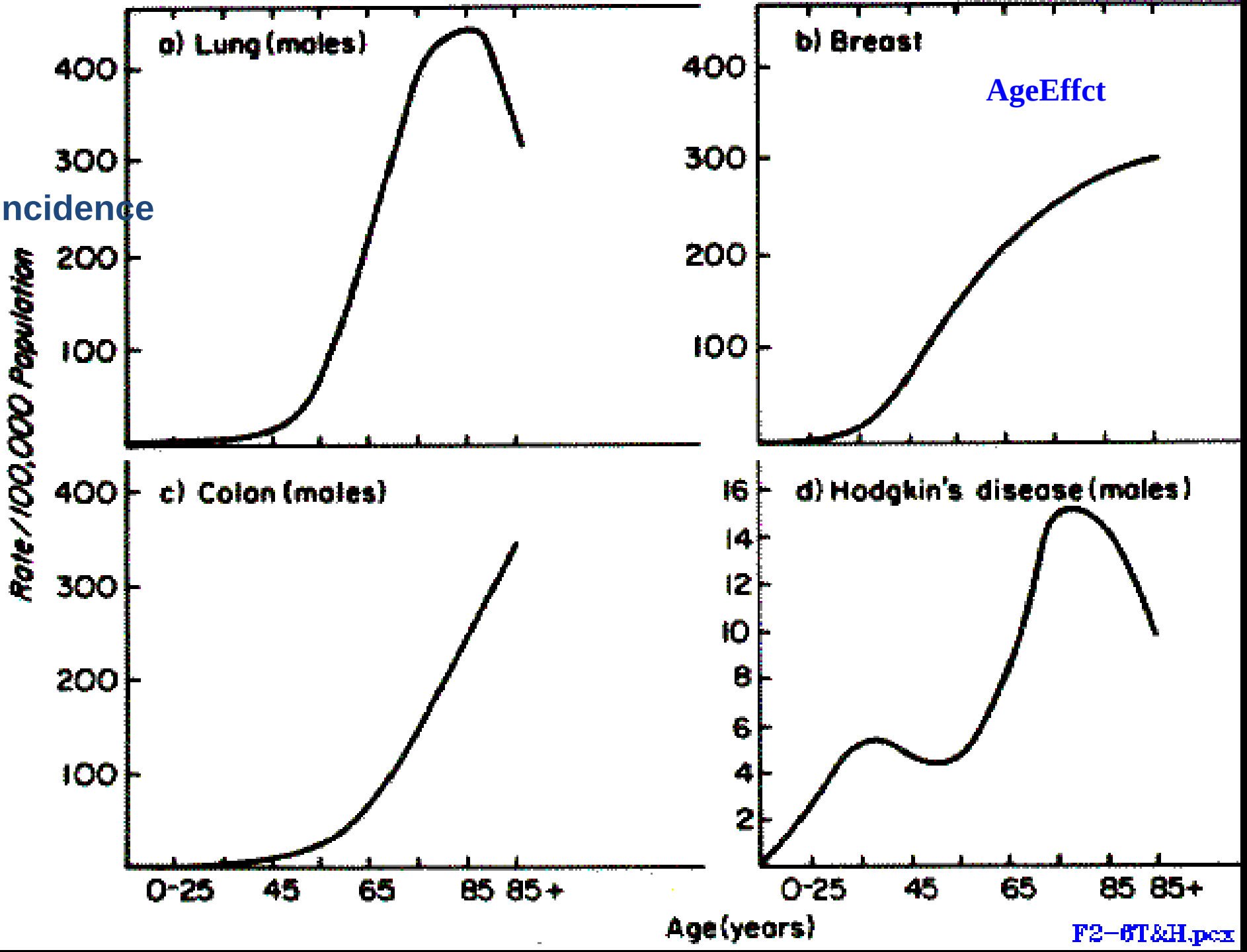

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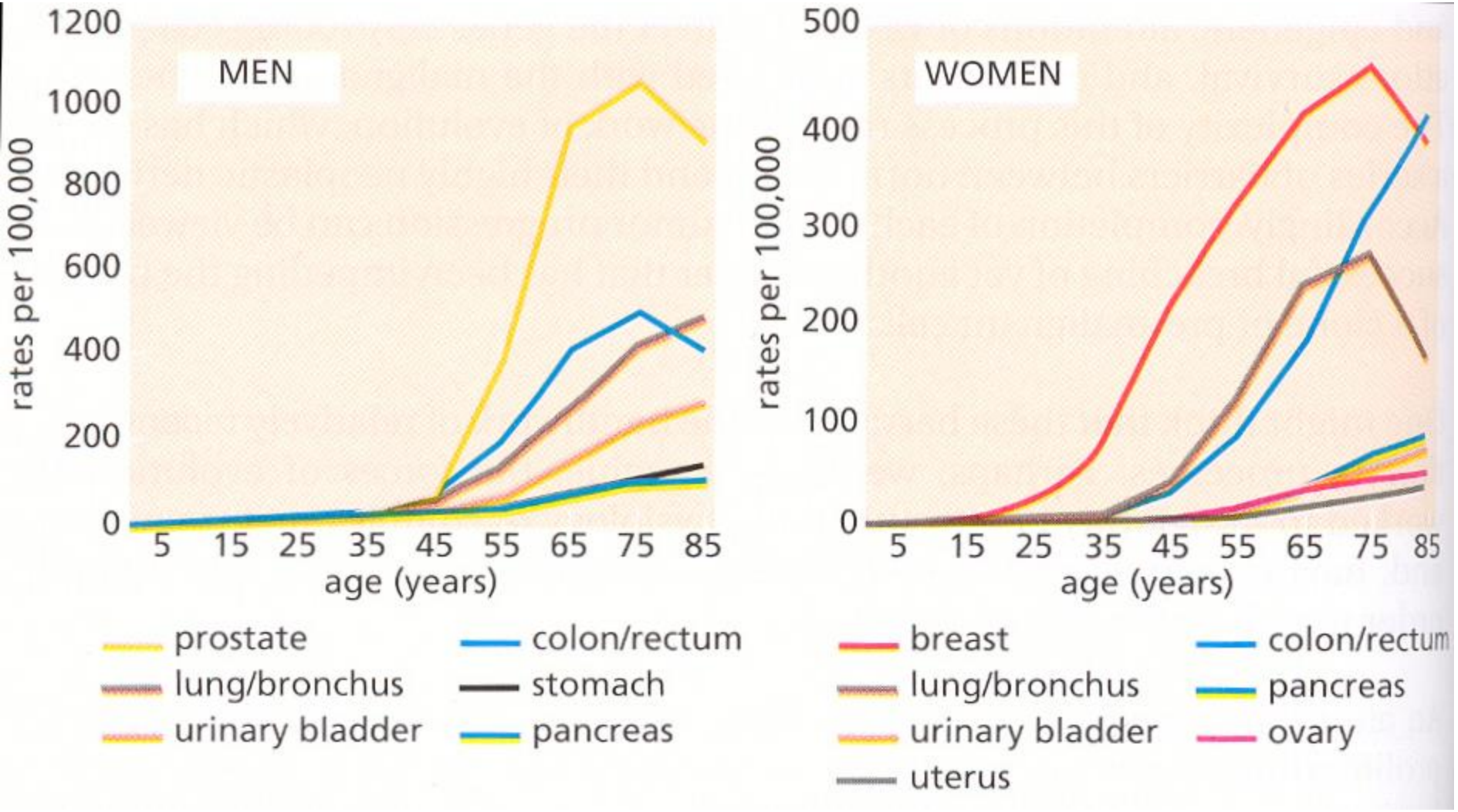
Incidence of Various Kinds of Cancers in Men and Women as a Function of Age



See Figure 11.1, Cancer incidence at various ages for men and women. p. 400. Weinberg.

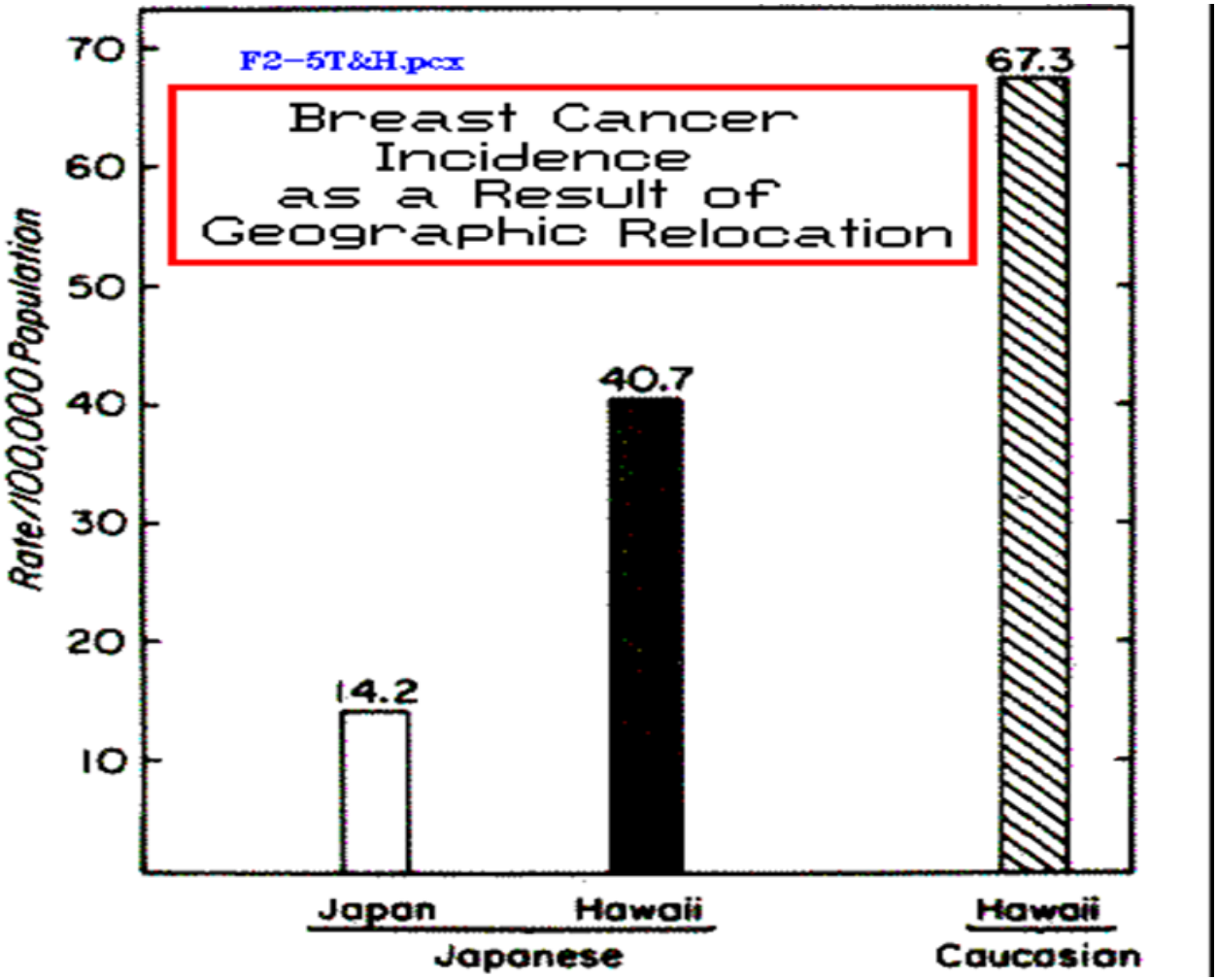
Note maximum incidence per 100,000 population at about age 70, then drop off after that age. Serious incidence begins around age 35 except for breast cancer which can have an earlier onset depending on genetics and hormonal status.

Why do "super-old" seem to show cancer resistance?

The Next Two Slides are Turning Point Quiz Question Slides

- You may not use any notes or electronic devices other than your NXT transmitter. No computers. No phones. No talking or consulting.
- Make sure that your desk is clear.
- These are graded quizzes that make up 40% of the overall course grade.
- They are designed for both you and me to determine whether you are paying attention and following what is going on.
- ***You can send a "Response to Leader" while a TP Slide is open. Give it a try. You can communicate with me.***

Specific Cancer Incidence and Migratory Patterns: Cancers and Environmental Effects



Cancer Incidence Following Migration

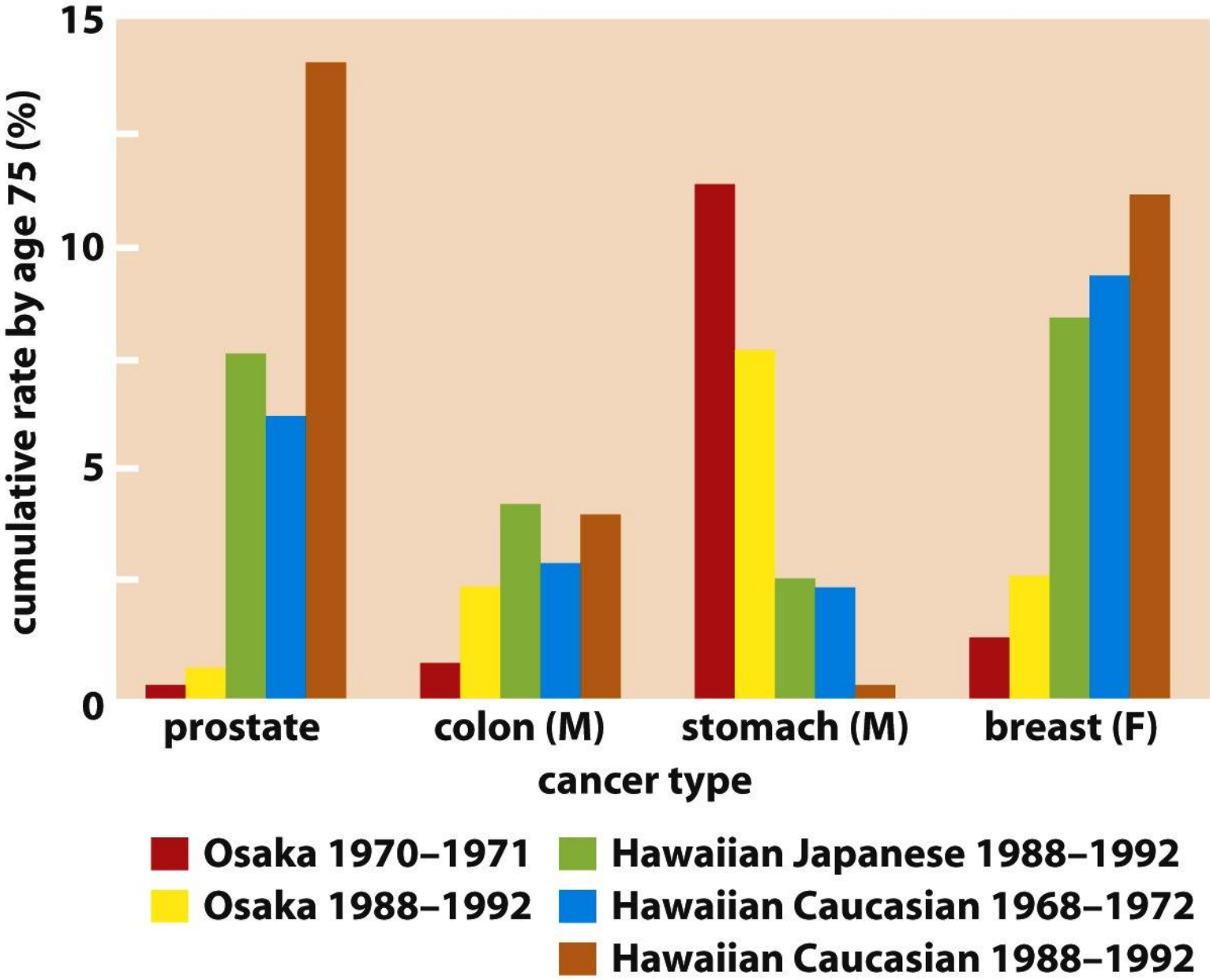
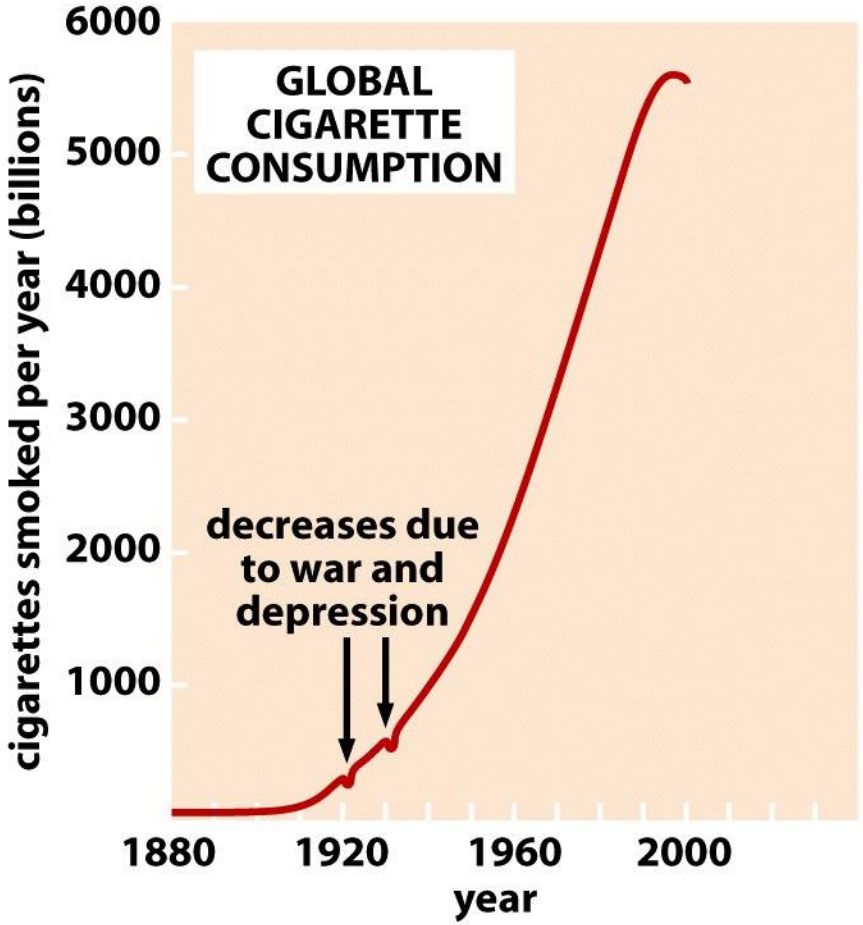


Figure 2.20 *The Biology of Cancer* (© Garland Science 2007)

Cigarette Consumption and Lung Cancer: 1880 to 2000



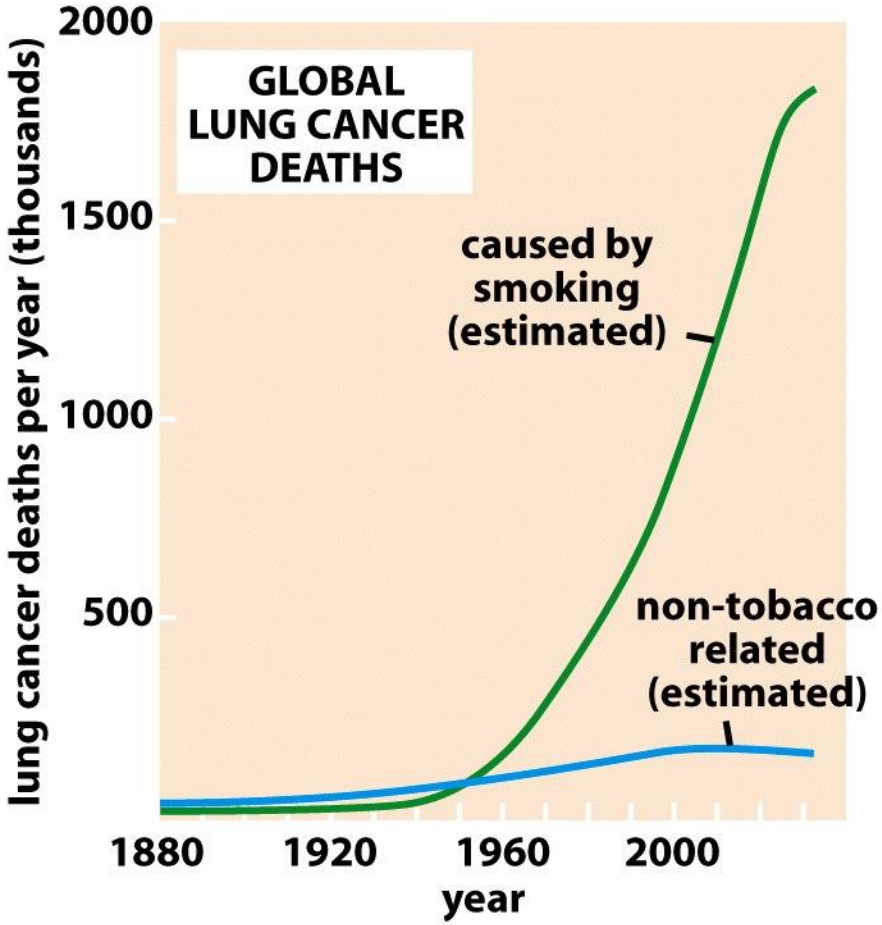
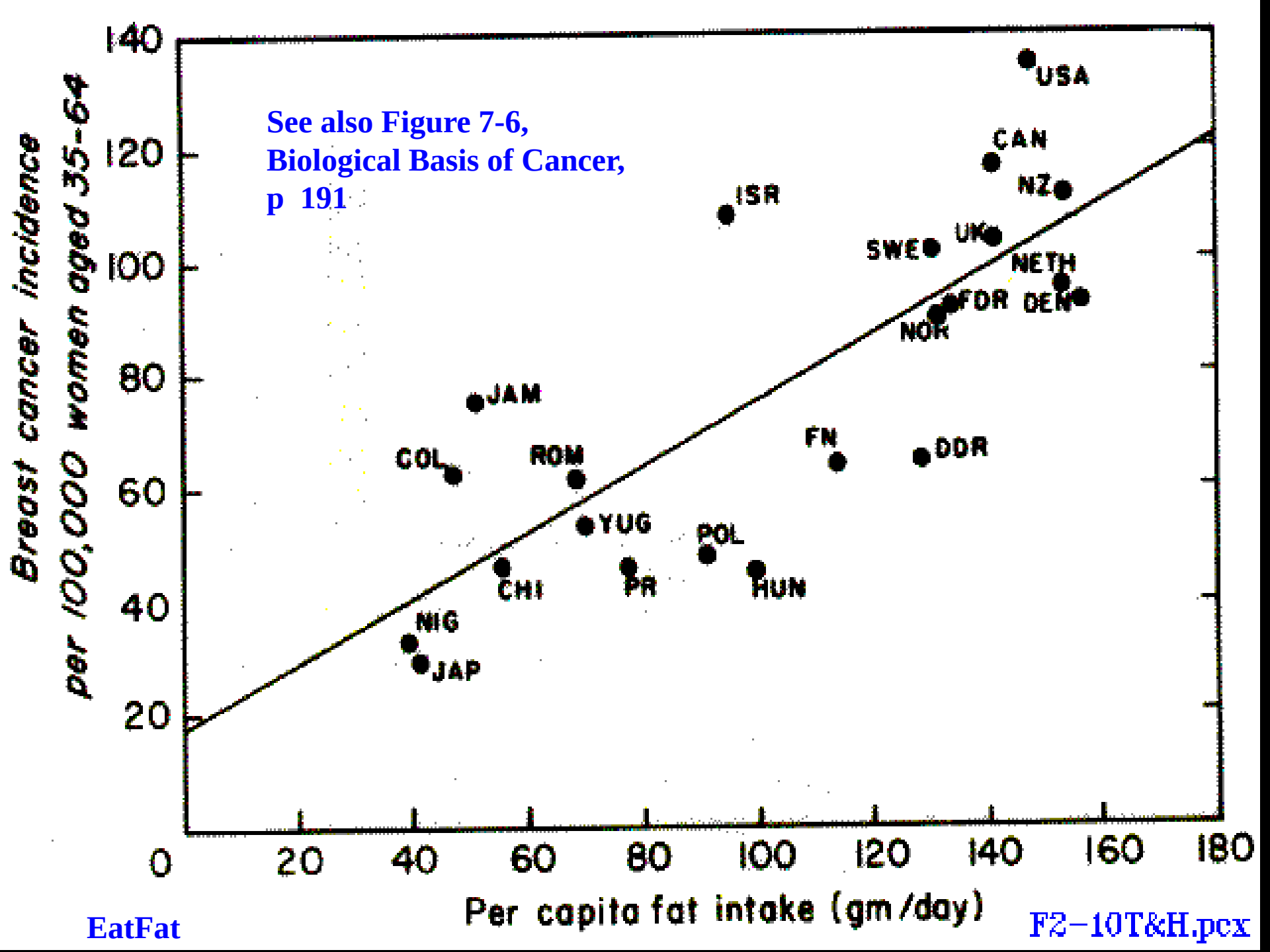


Figure 11.2 *The Biology of Cancer* (© Garland Science 2007)



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Thank You..!