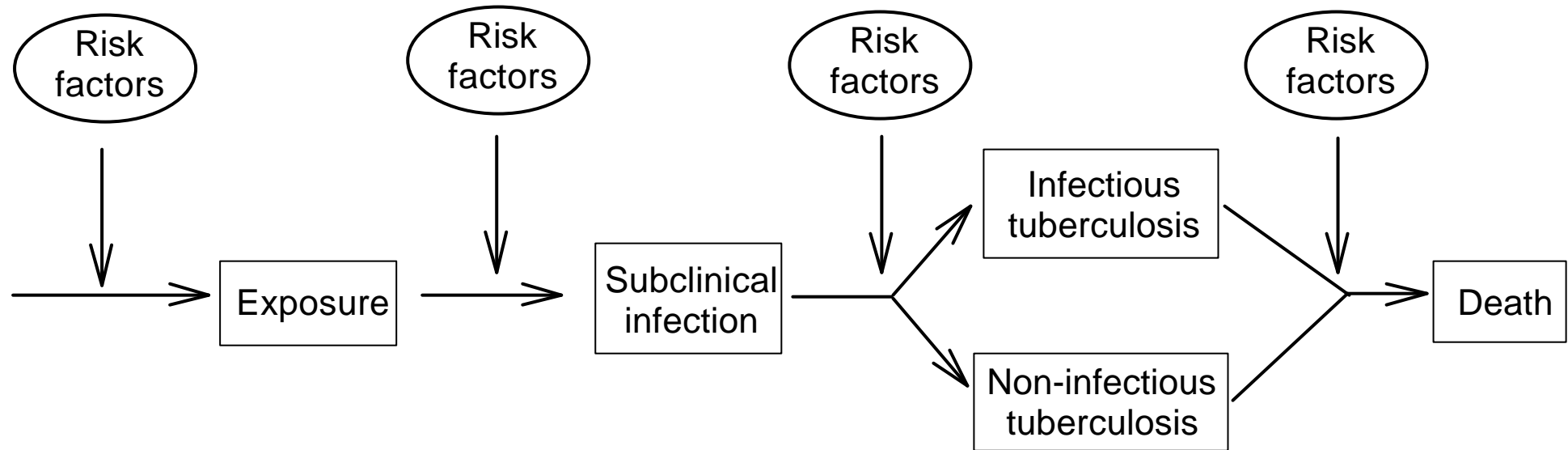
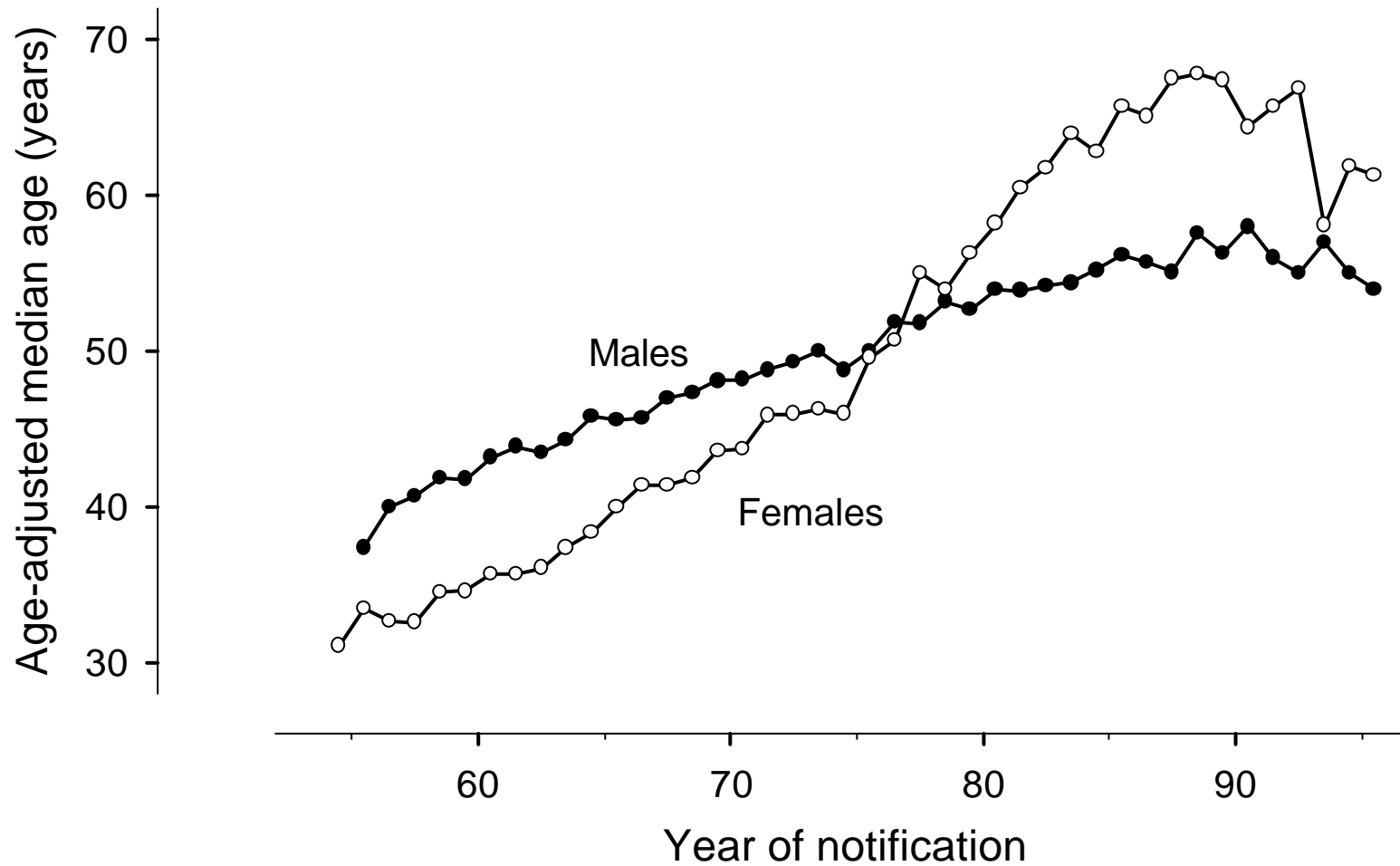


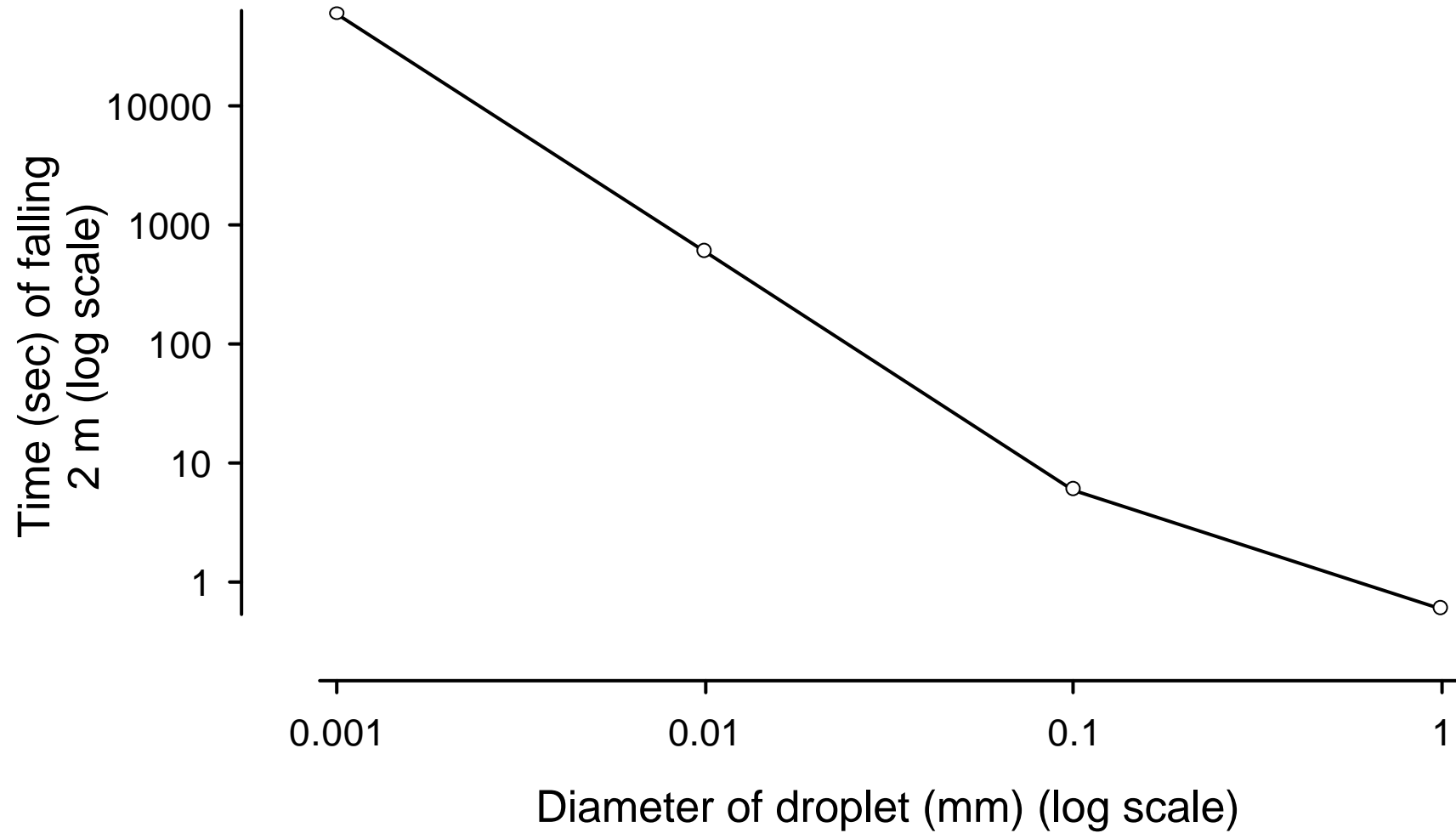
A Model for the Epidemiology of Tuberculosis



Change in the Median Age of Tuberculosis Patients, Finland, Among Males and Females, 1954 - 1995

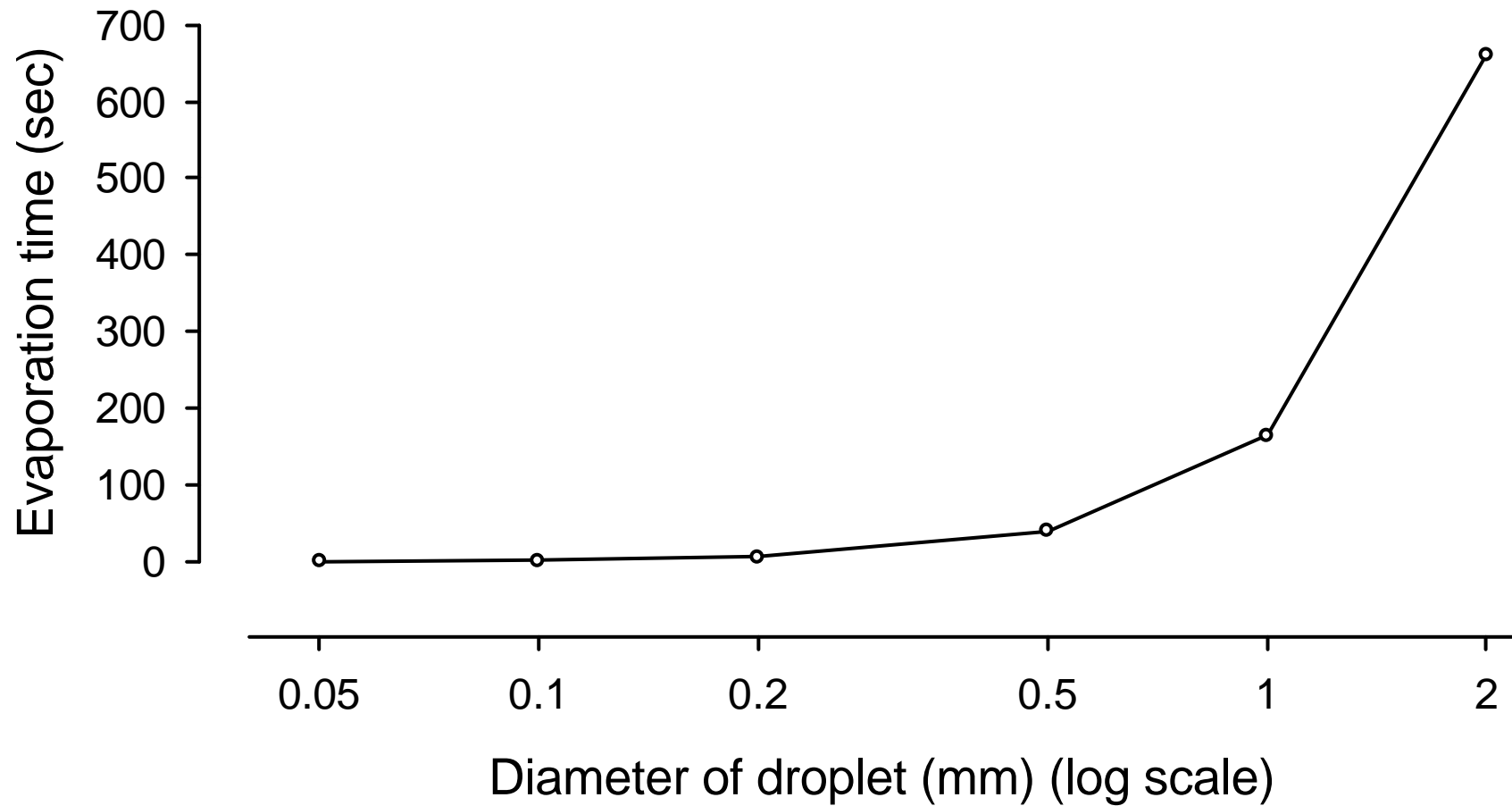


Settling of Water Droplets in Saturated Air



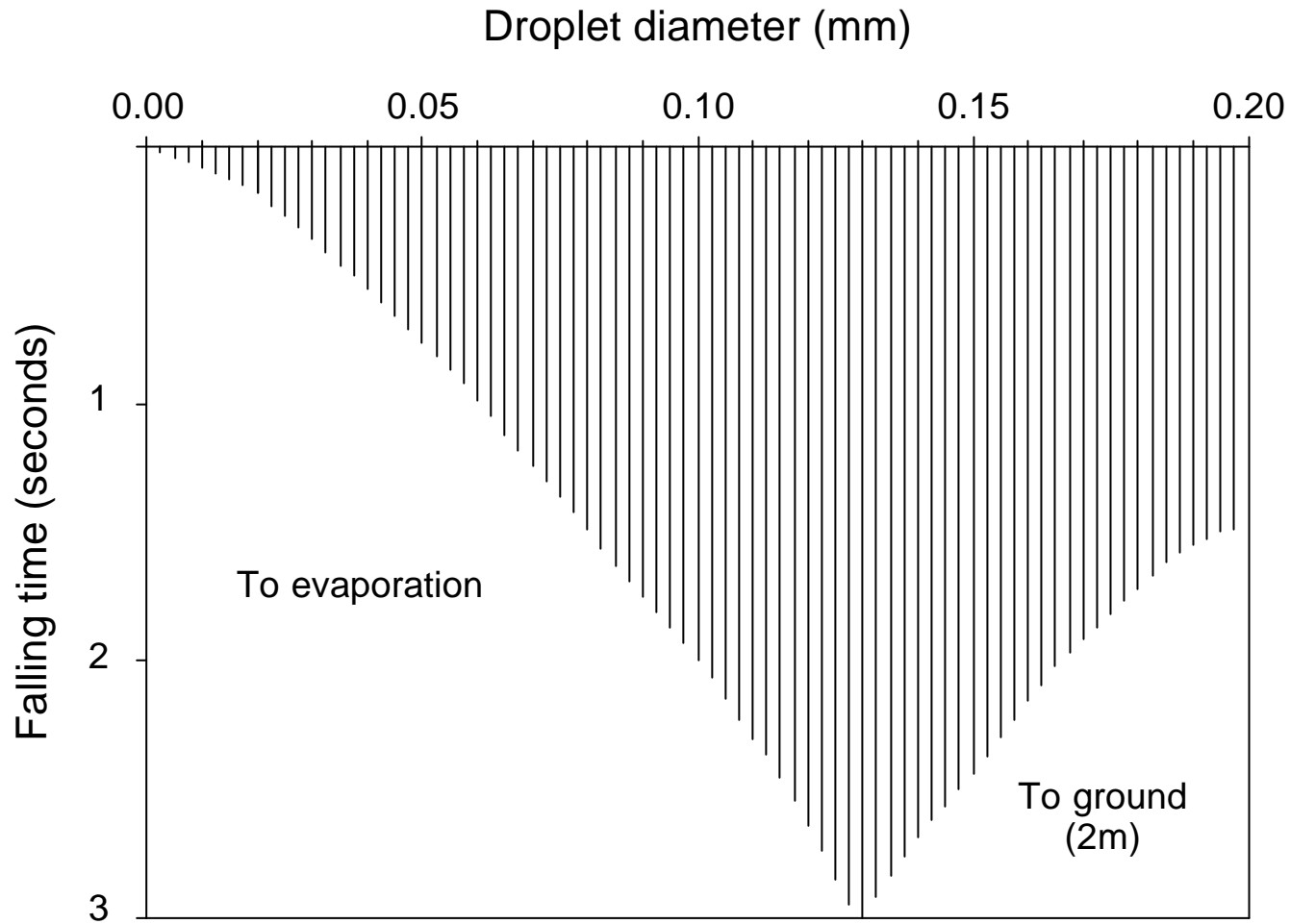
Wells WF. Am J Hyg 1934;20:611-8

Evaporation Time of Water in Unsaturated Air at 18⁰ C



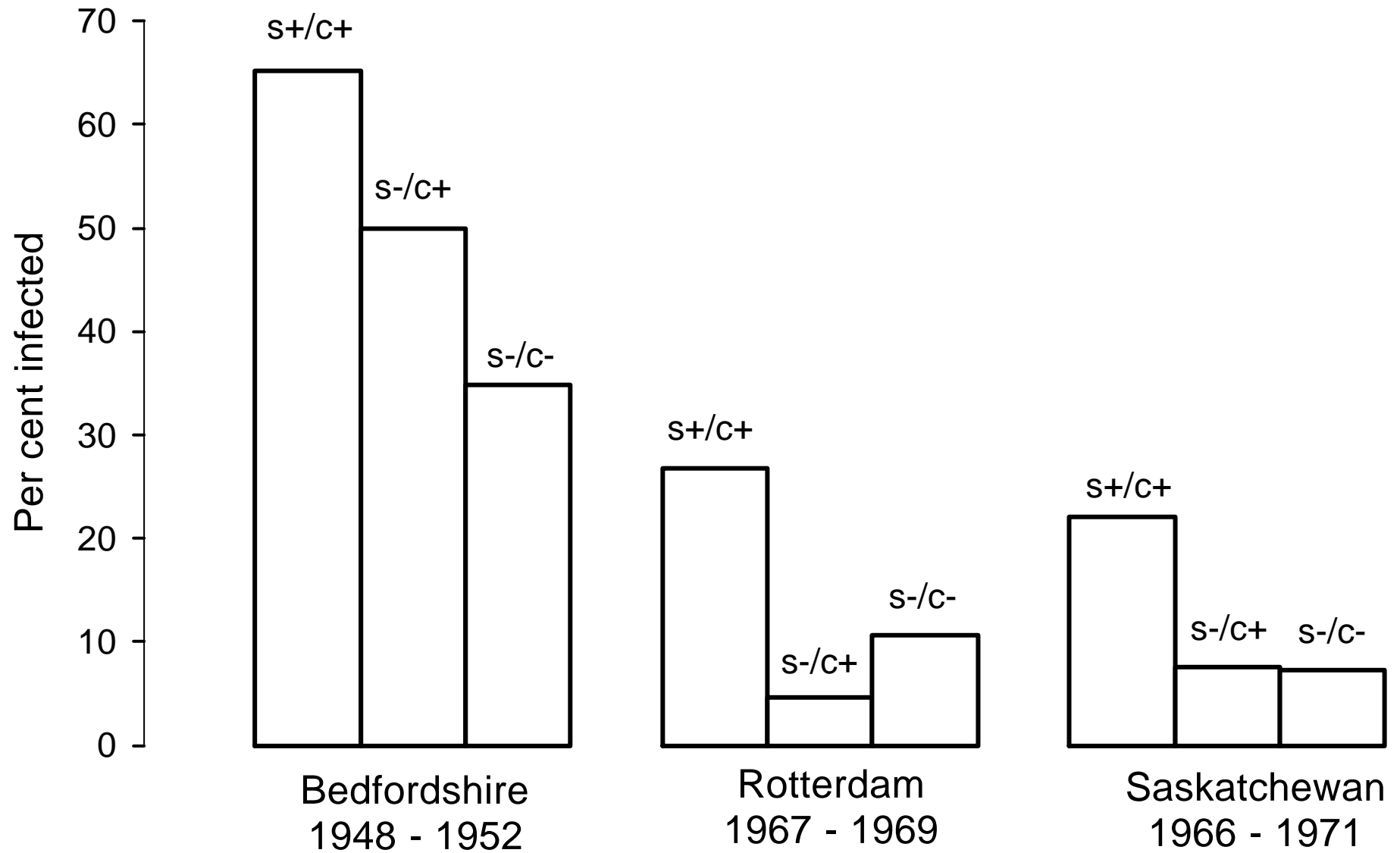
Wells WF. Am J Hyg 1934;20:611-8

Falling and Evaporation Times of Droplets of Varying Diameters

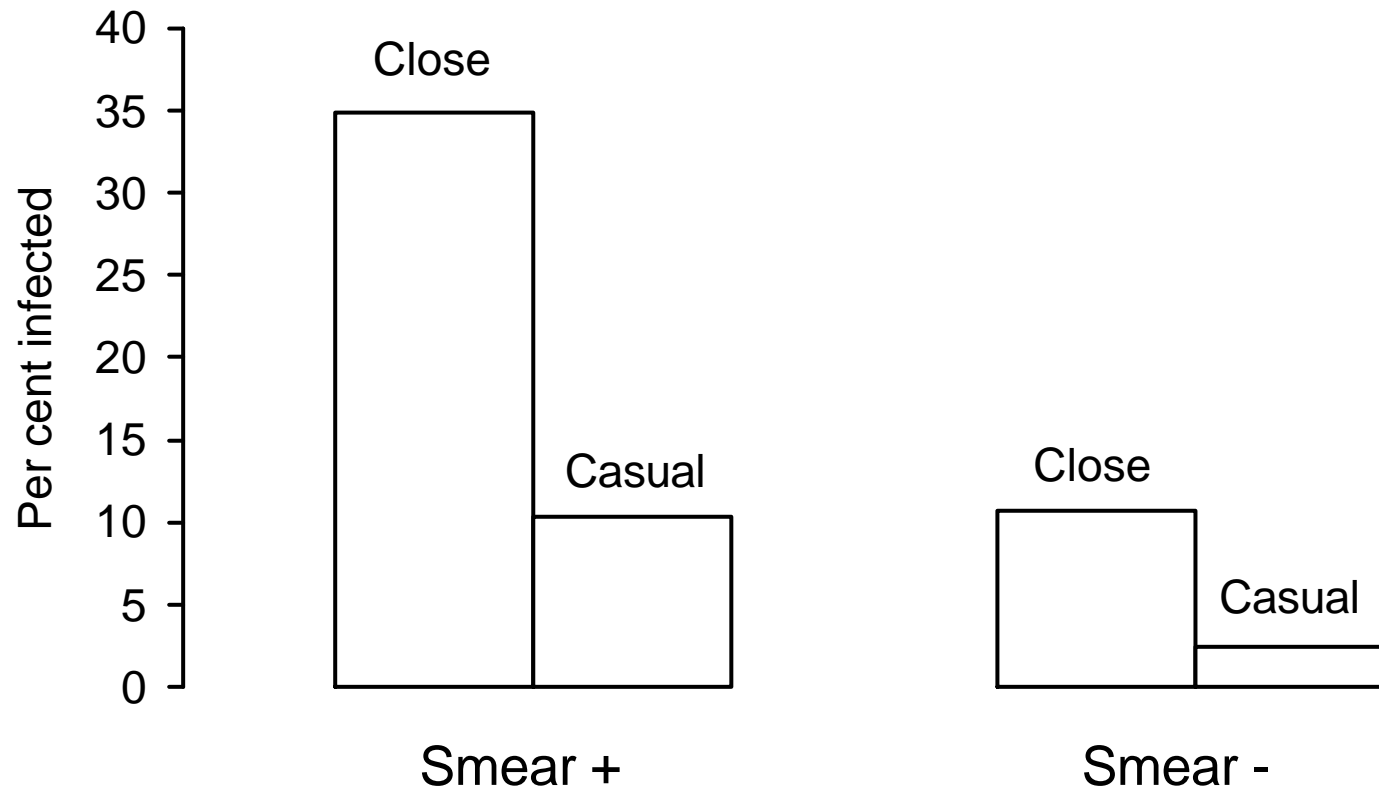


Figures accompanying monograph: Figure 7

Hans L. Rieder. Epidemiologic basis of tuberculosis control. Paris: International Union Against Tuberculosis and Lung Disease, 1999

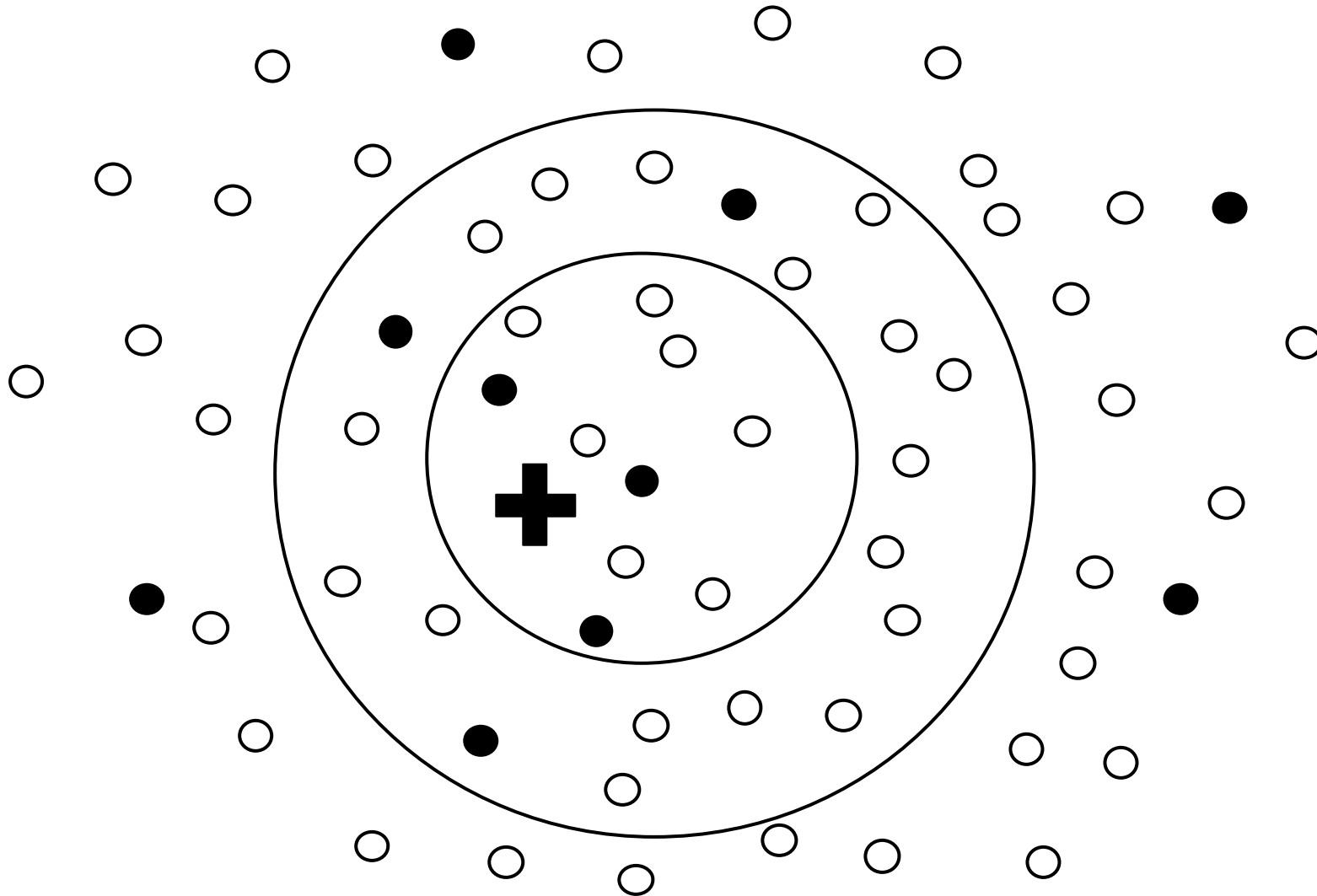


Tuberculous Infection Among Children by Type of Contact and Bacteriologic Status of Index Case, British Columbia and Saskatchewan, 1966 - 1971

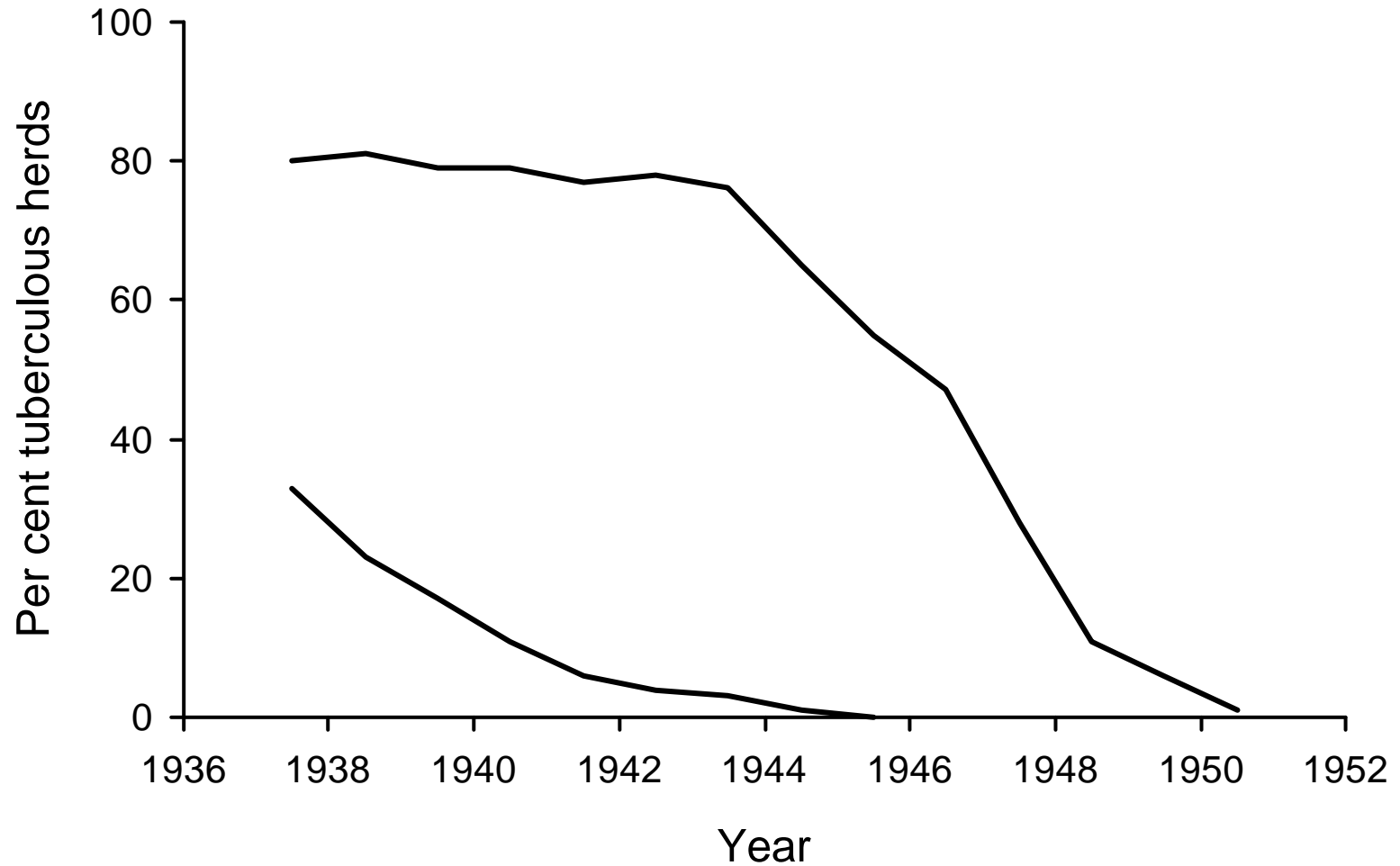


Grzybowski S, et al. Bull Int Union Tuberc 1975;50:90-106

Risk of Infection Among Contacts as a Function of the Proximity of Contact

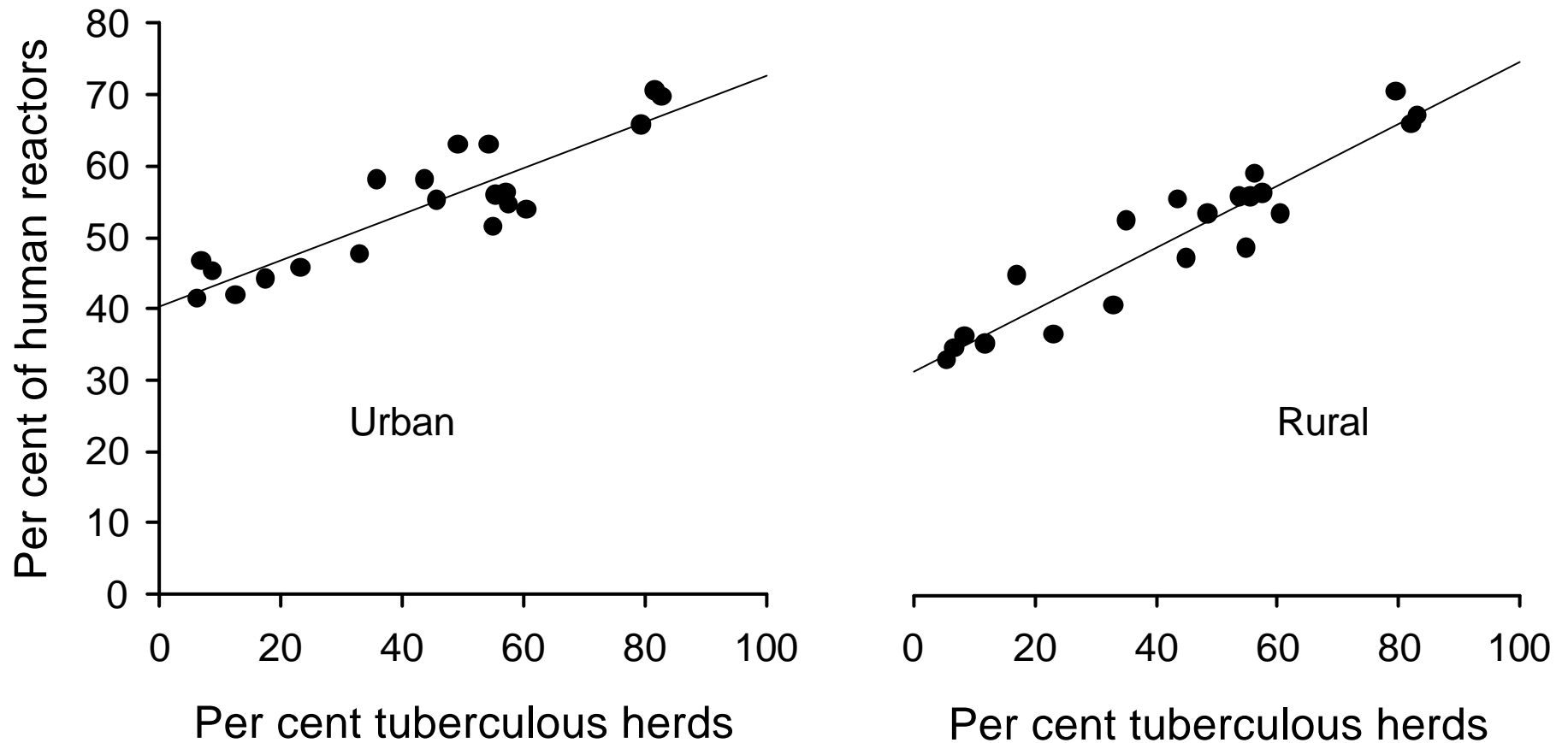


Percentage of Tuberculous Herds in Two Selected Counties, Denmark, 1937-1950

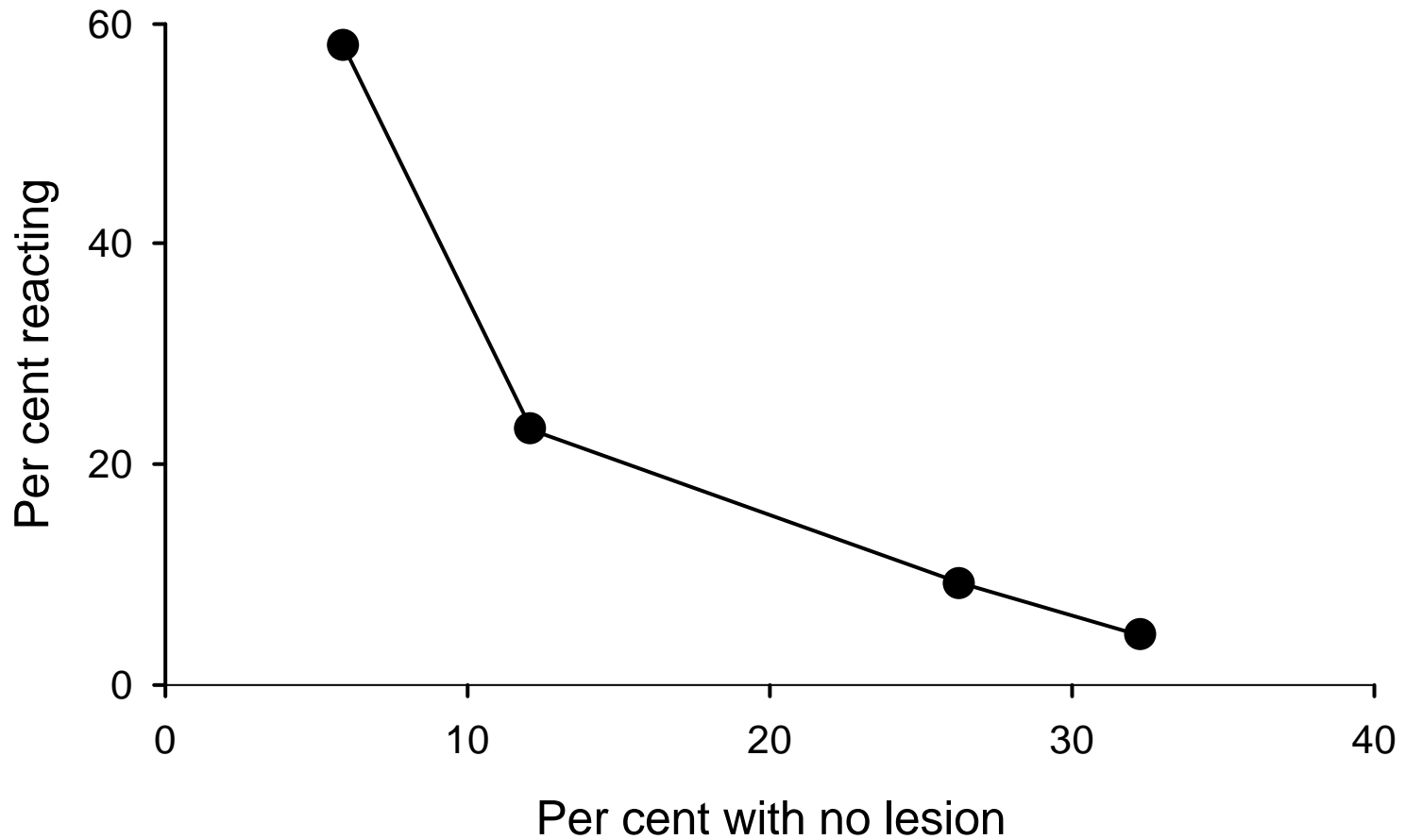


Magnus K. Danish Tuberculosis Index 1968:9-28

Correlation Between Tuberculous Herds (1937 - 1939) and Human Tuberculin Skin Test Reactors (1950 - 1952), Denmark

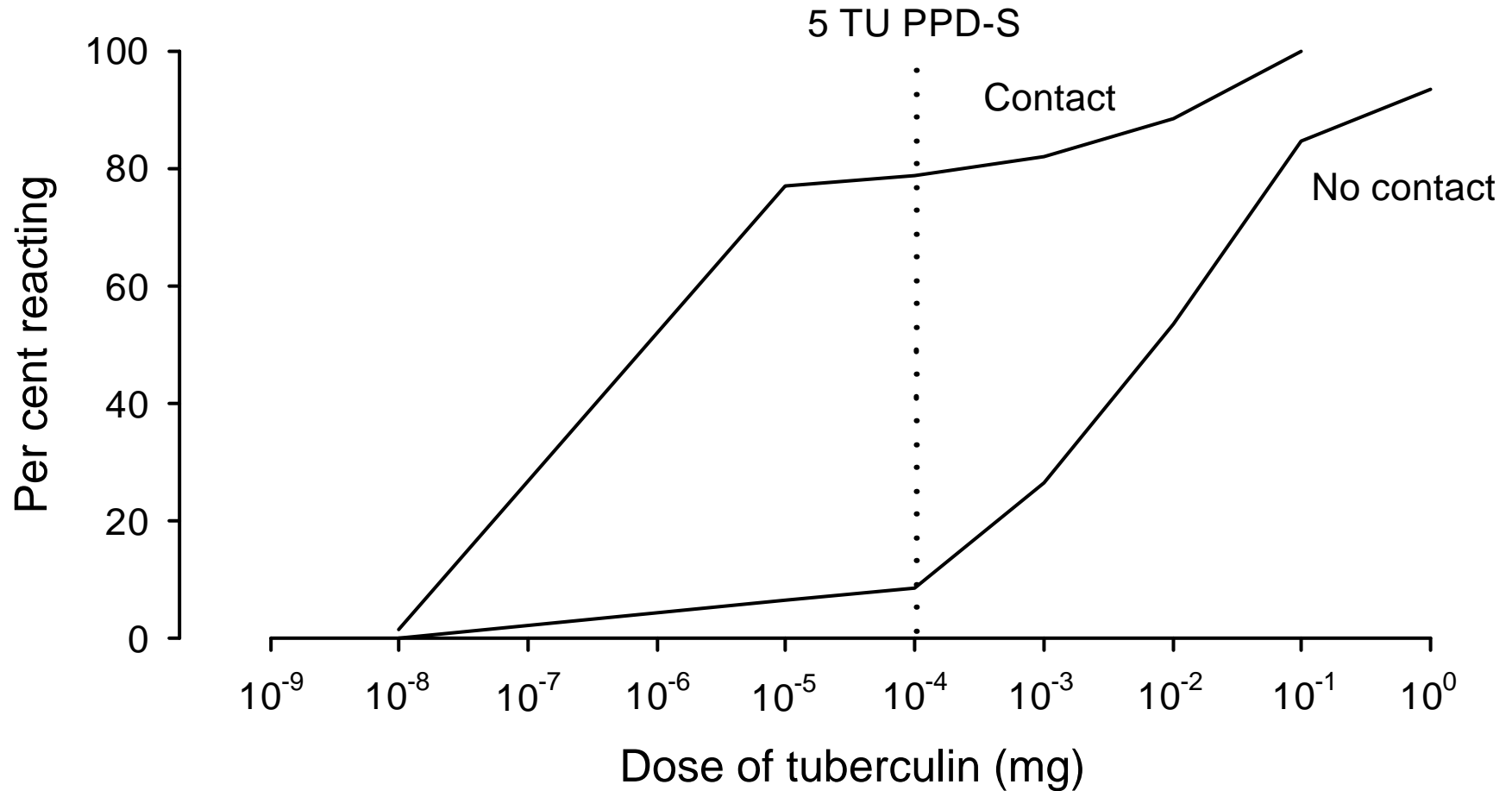


Correlation Between Prevalence of Tuberculin Reacting Cattle and Frequency of Cattle with no Lesion



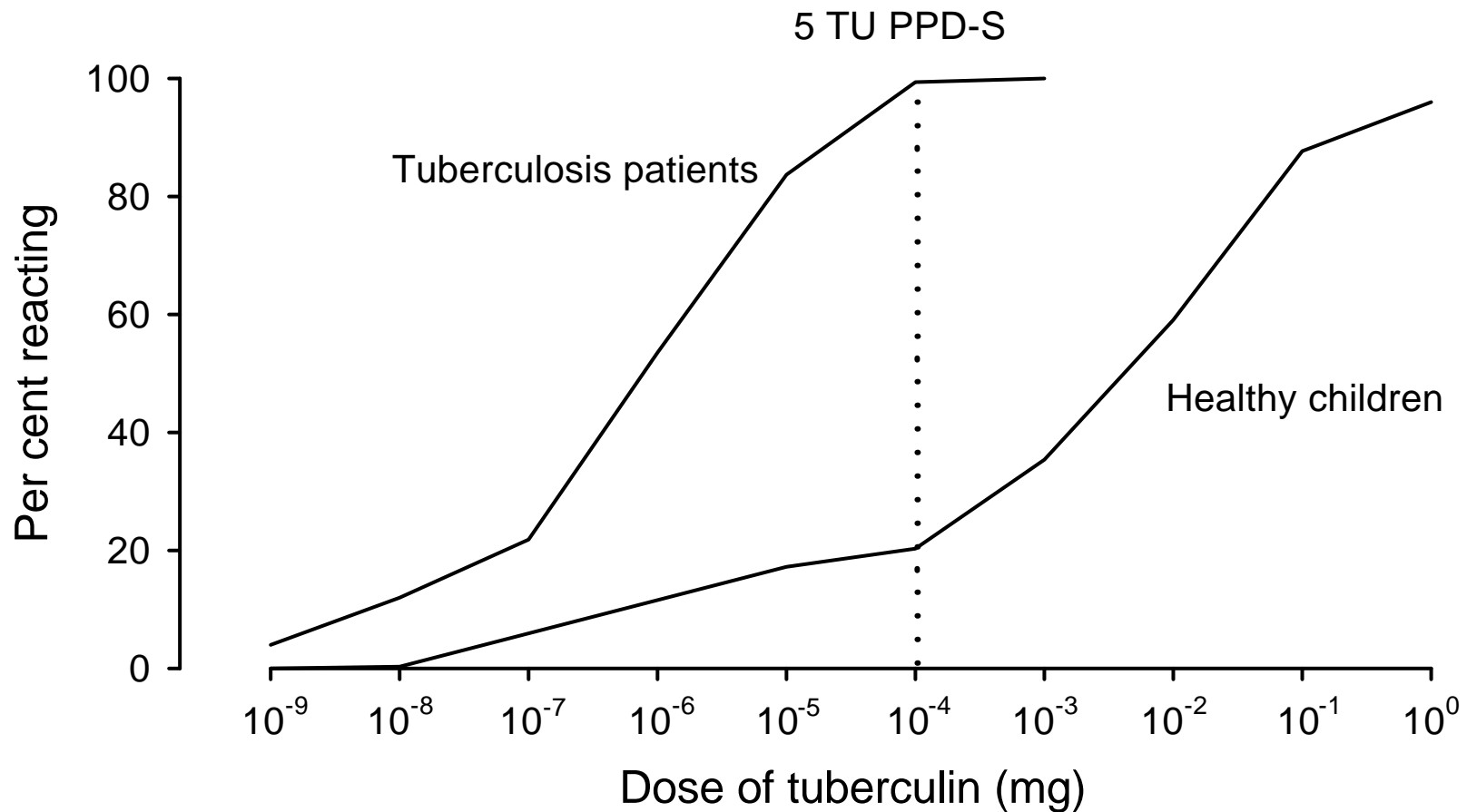
Hastings EG, et al. Am Rev Tuberc 1930;22:218-25

Cumulative Percentage of Children Reacting to Increasing Doses of Tuberculin, by History of Contact



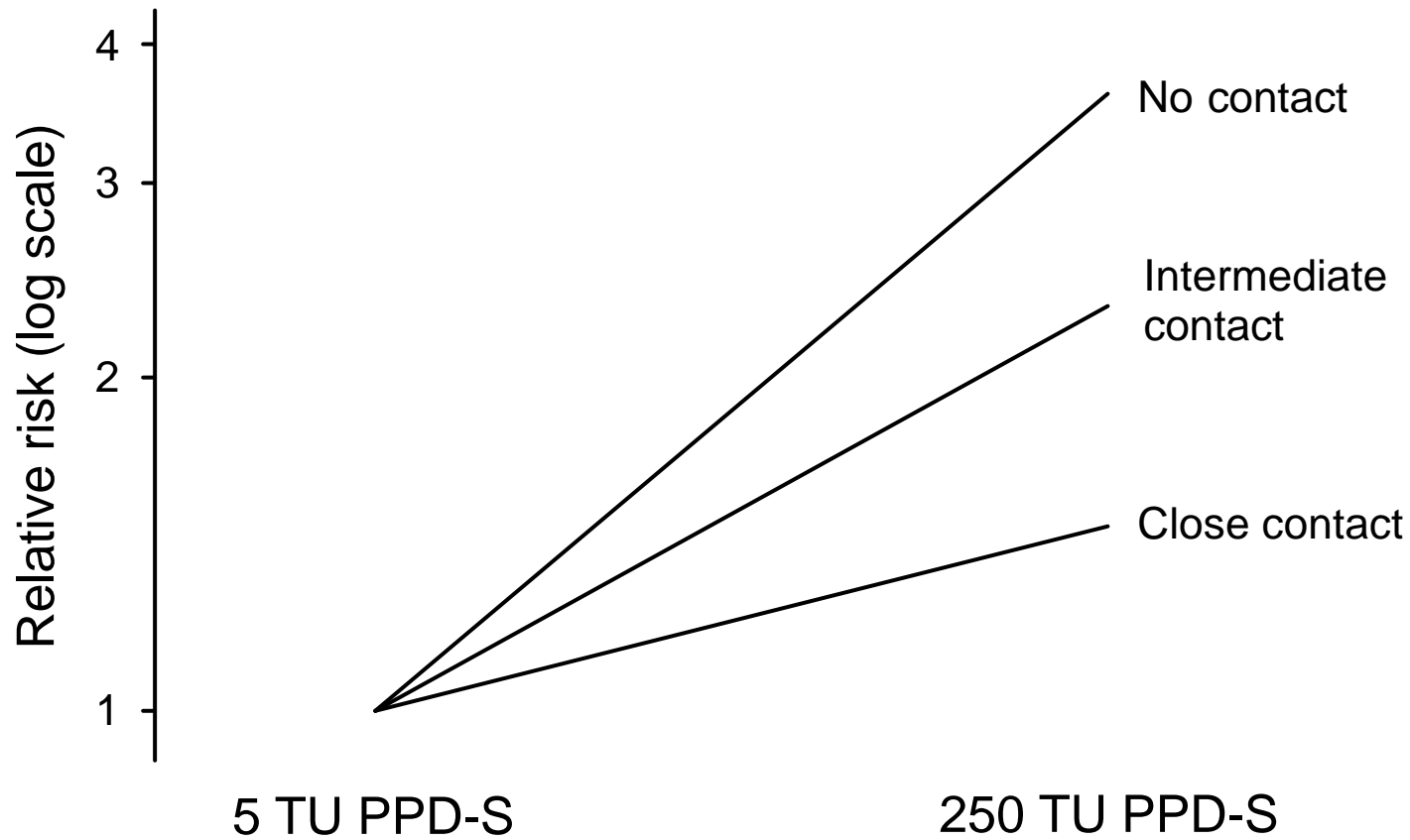
Furcolow ML, et al. Public Health Rep 1941;56:1082-1100

Cumulative Percentage of Children Reacting to Increasing Doses of Tuberculin, Among Healthy Children and Tuberculosis Patients

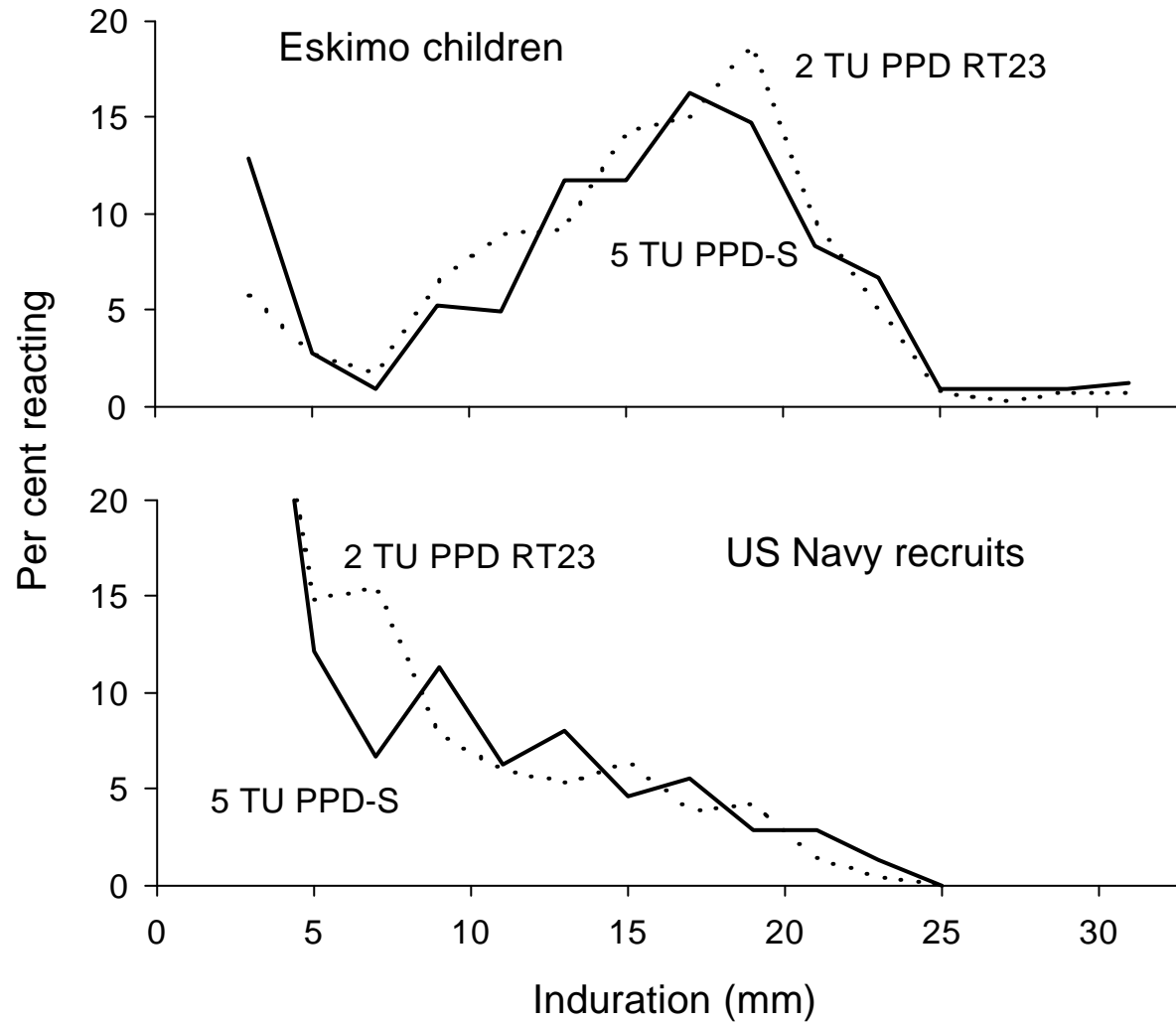


Furcolow ML, et al. Public Health Rep 1941;56:1082-1100

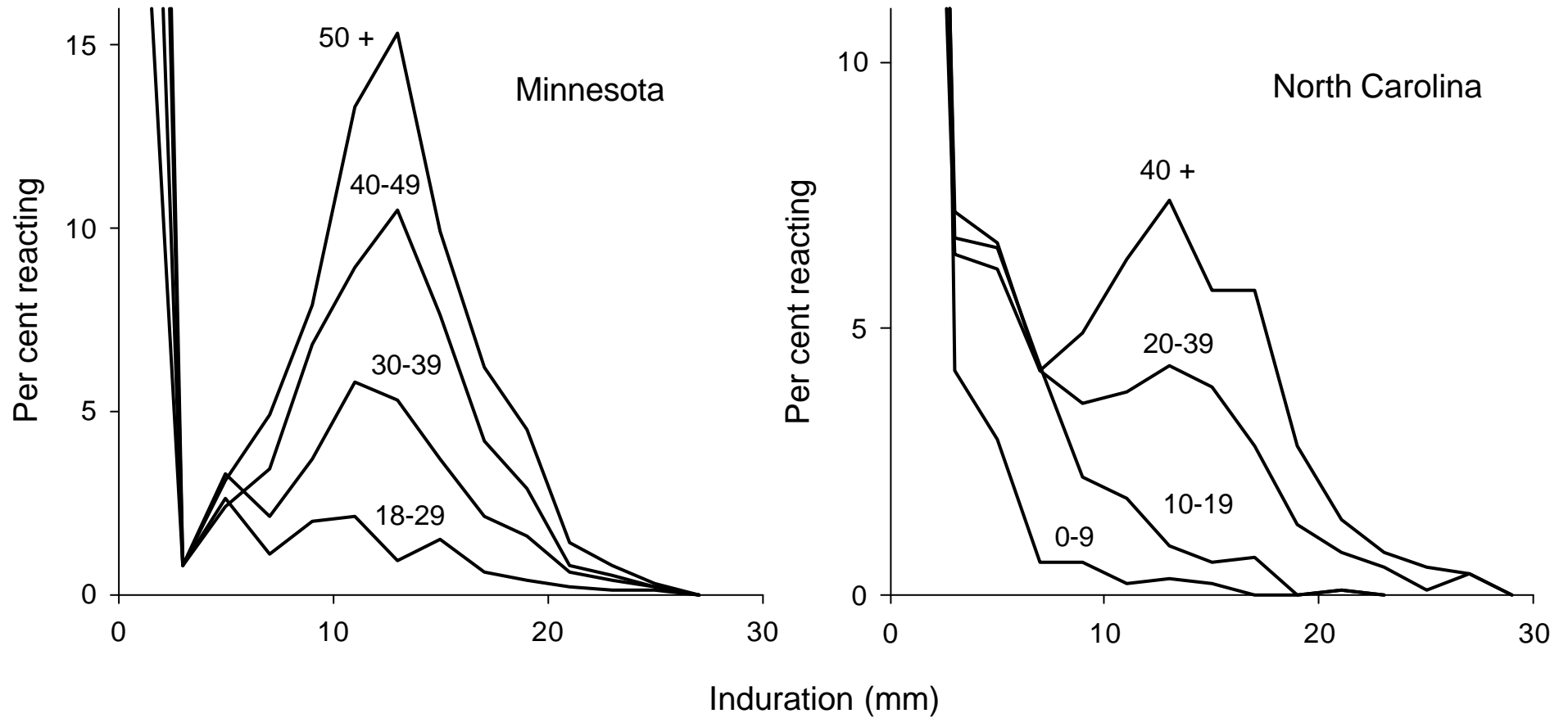
Relative Probability to React to 250 TU PPD-S Compared to 5 TU PPD-S, by Type of Contact



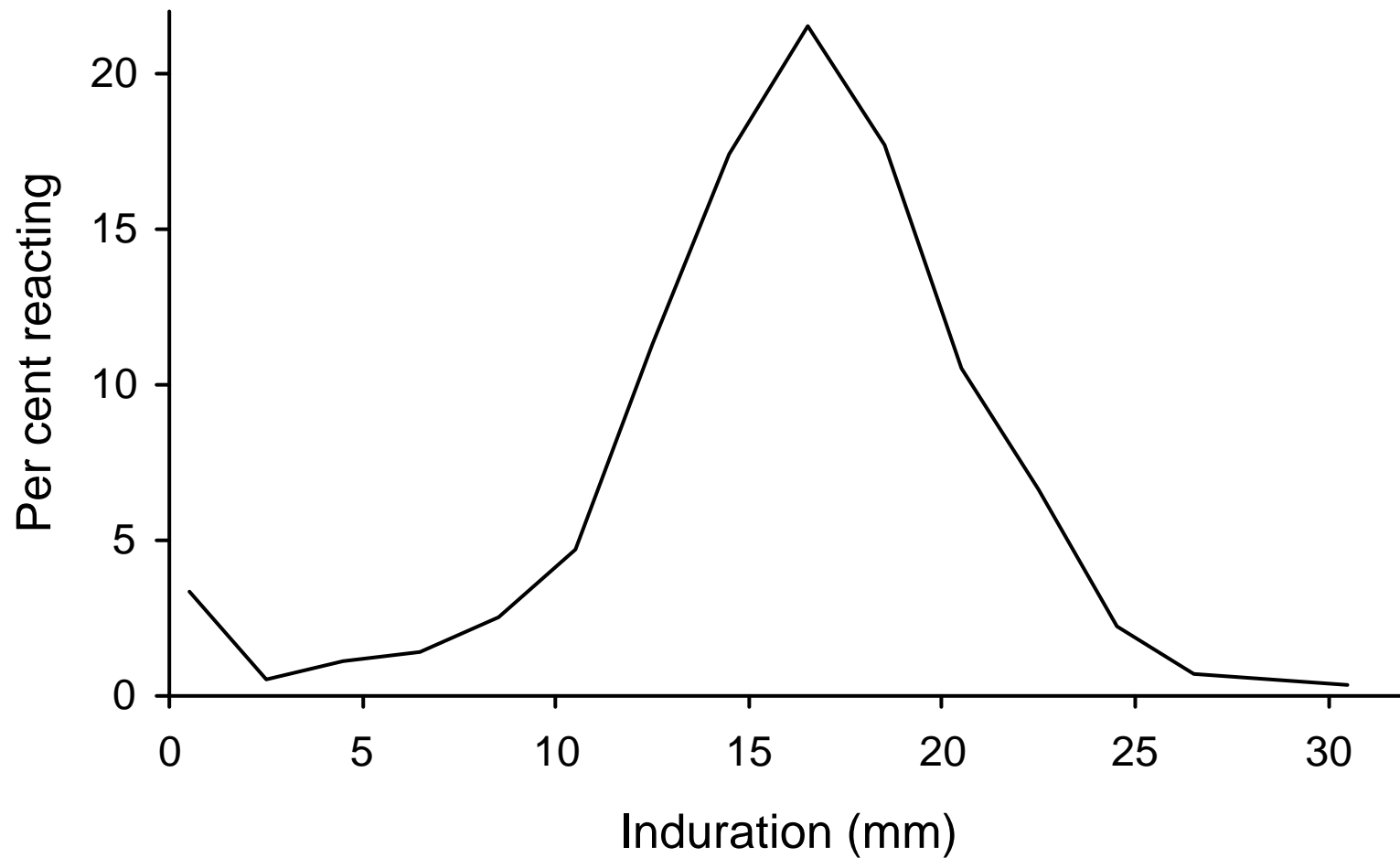
Comparison of Tuberculin PPD-S and PPD RT23 in Eskimo Children and United States Navy Recruits



Frequency Distribution of Tuberculin Skin Test Results by Age, in Different Areas of the United States

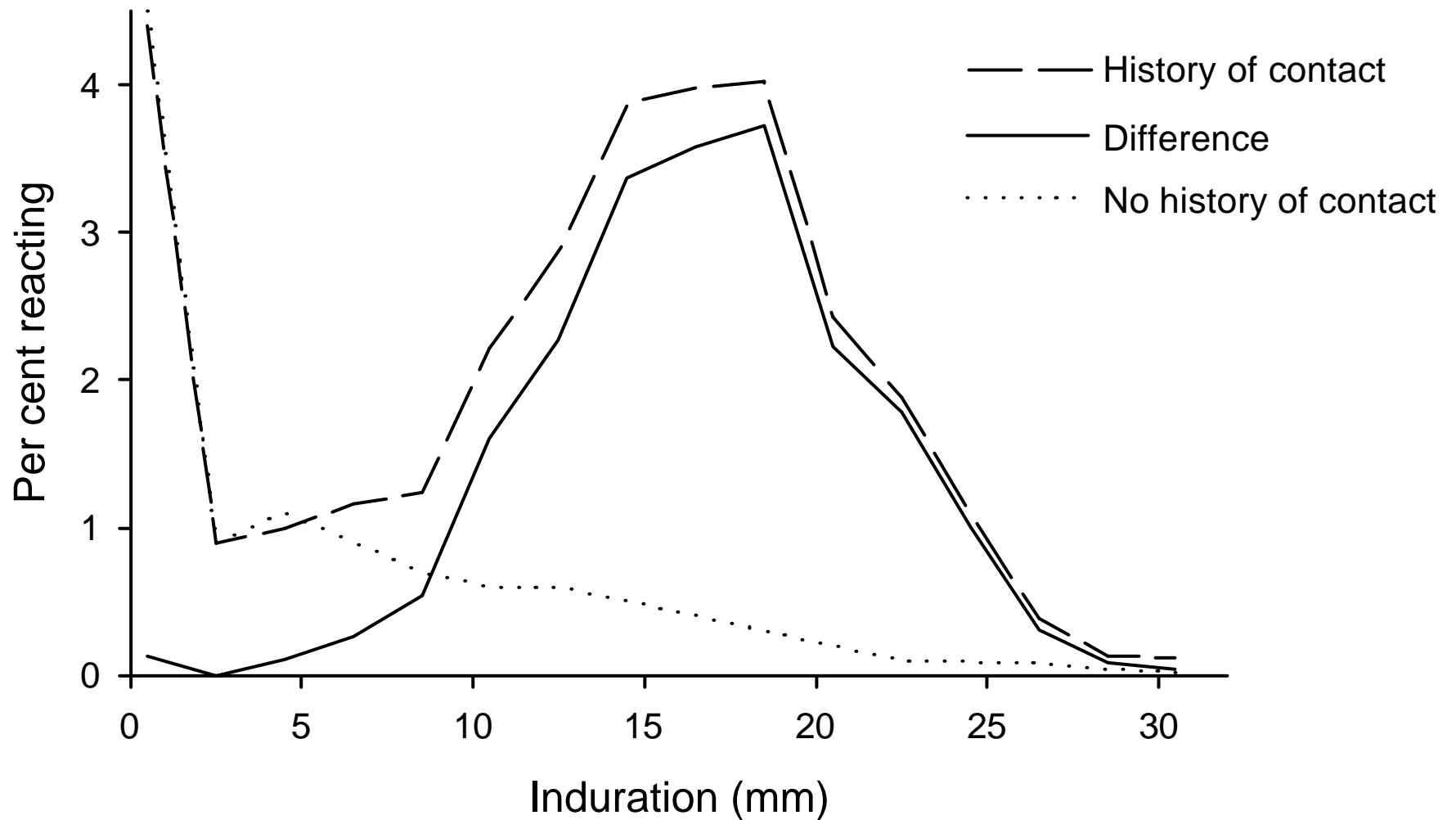


Distribution of Reaction Sizes to 5 TU Tuberculin PPD-S in 5,544 Tuberculosis Patients, United States



Edwards LB, et al. Am Rev Respir Dis 1969;99(4, part 2 of 2):1-132

Distribution of Reaction Sizes to 5 TU Tuberculin PPD-S Among Navy Recruits, by History of Contact, United States



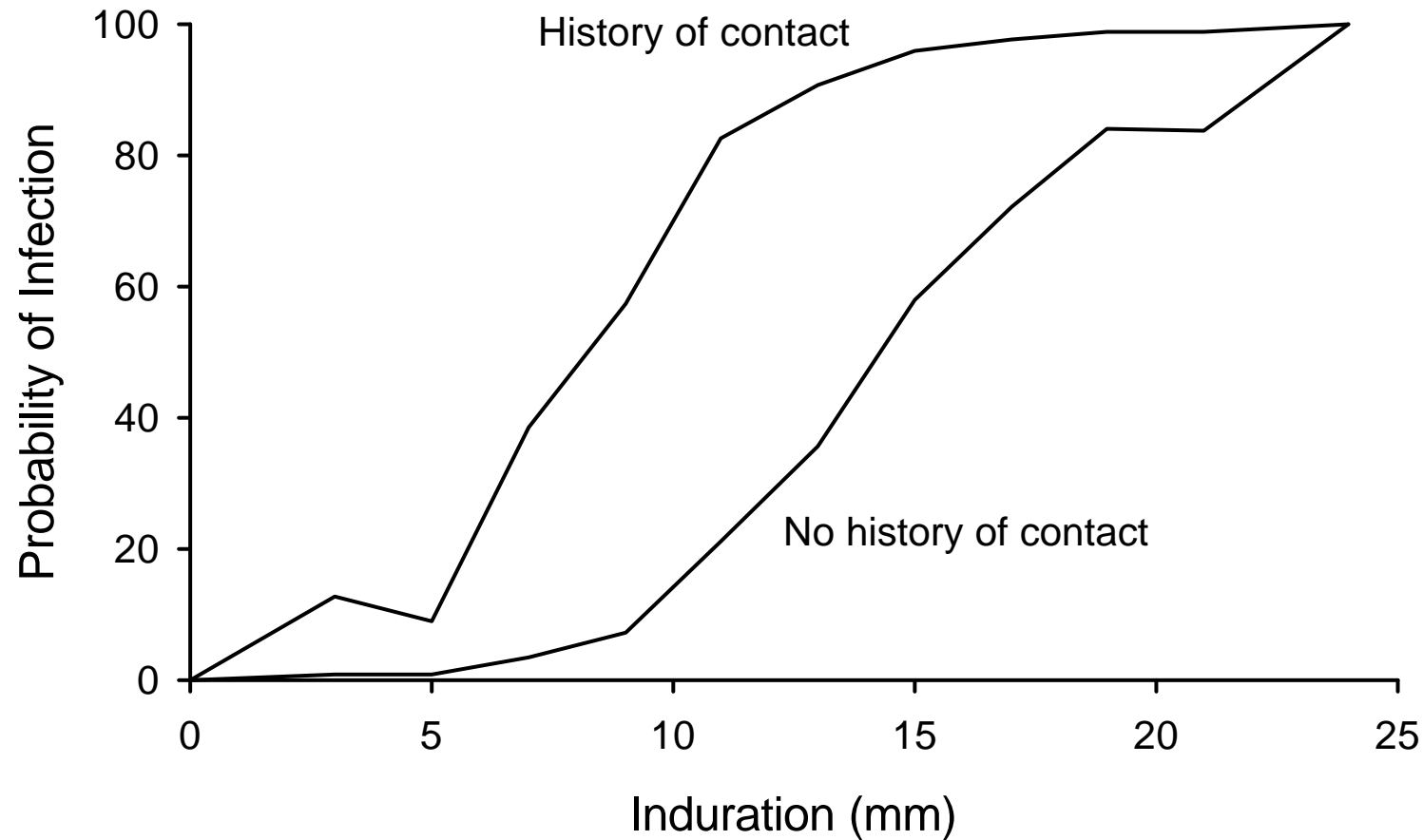
Figures accompanying monograph: Figure 20

Hans L. Rieder. Epidemiologic basis of tuberculosis control. Paris: International Union Against Tuberculosis and Lung Disease, 1999

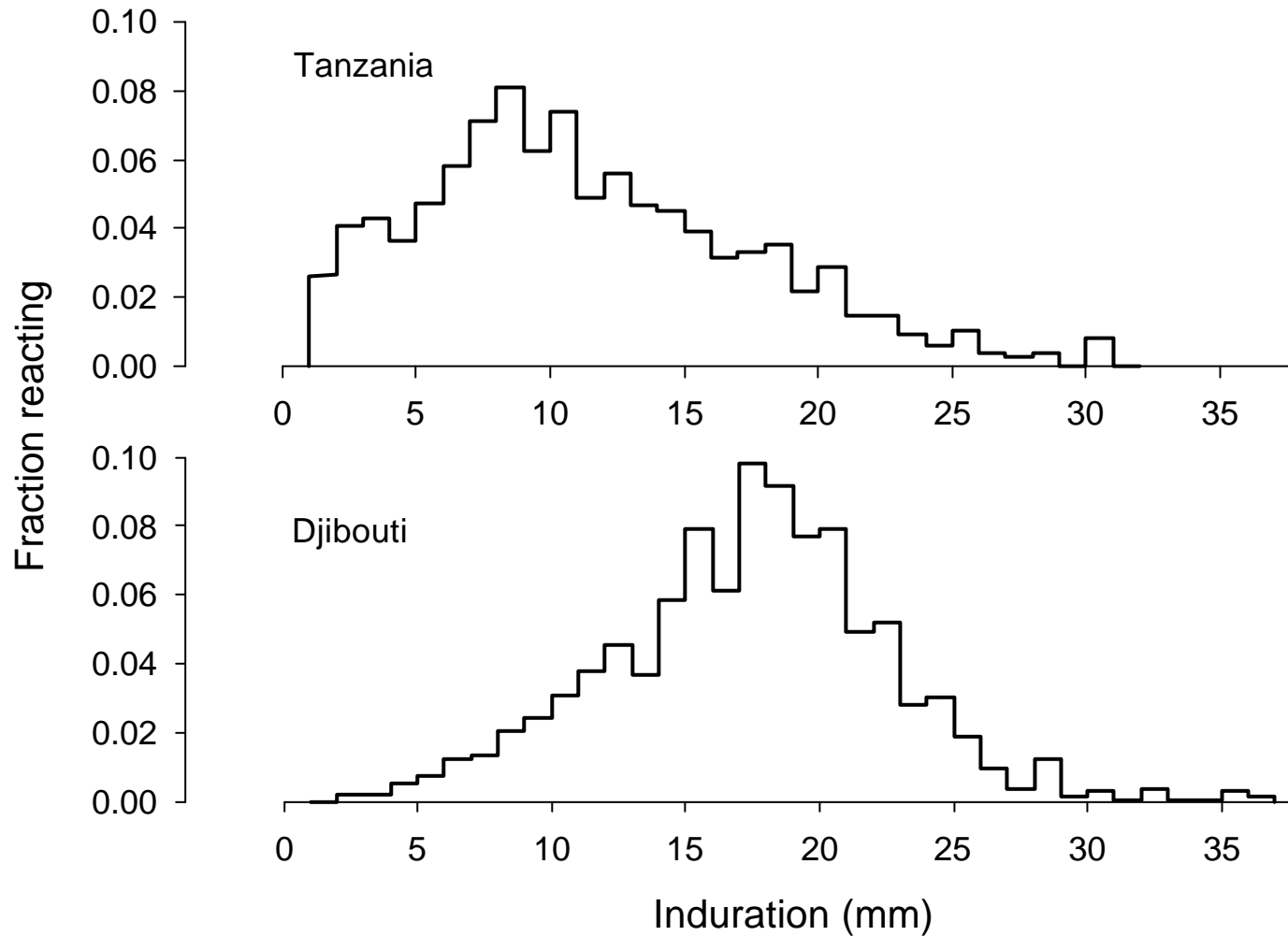
This Figure is not available in this series.

Figure 20. Frequency of reactions to PPD-B in white United States Navy recruits who were lifetime residents of a single county, by county of origin.

Probability of Tuberculous Infection Among US Navy Recruits by Tuberculin Skin Test Size and History of Contact

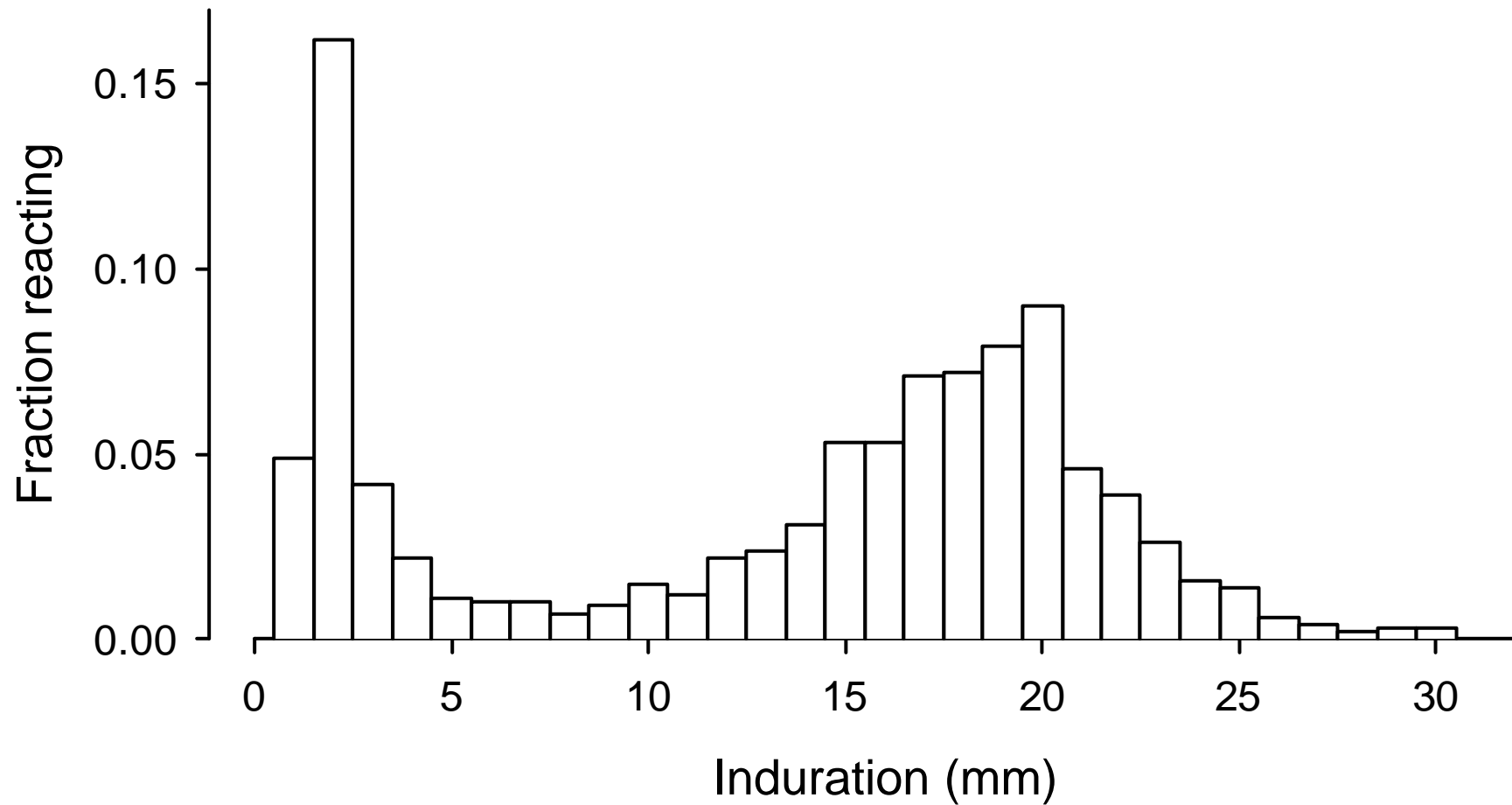


Frequency Distributions of Tuberculin Skin Test Reaction Sizes in Surveys in Tanzania and Djibouti



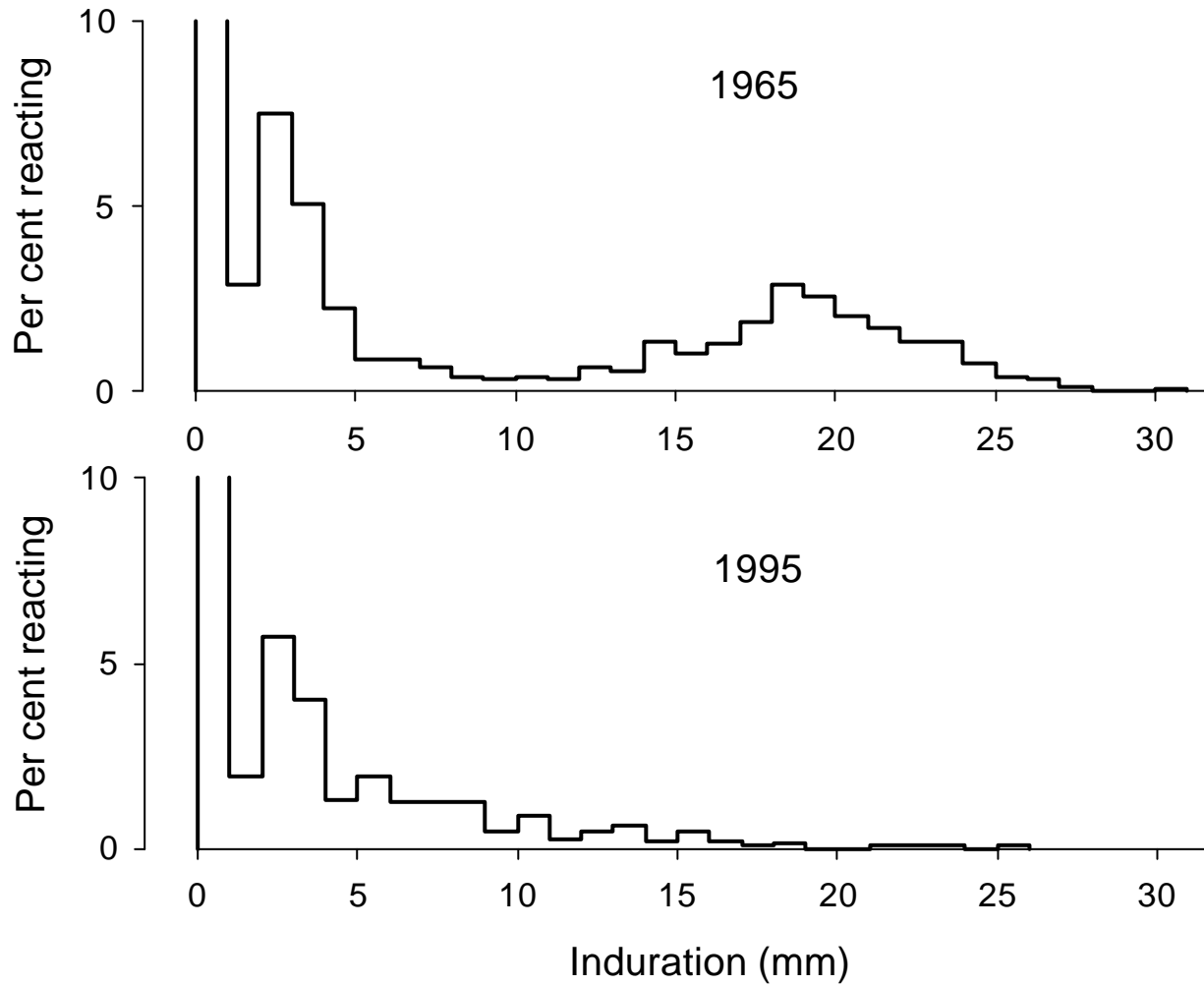
Styblo K. TSRU Progress Report 1998;1:31-66
Data courtesy Djibouti: Trébuçq A, IUATLD, 1995

Frequency Distribution of Tuberculin Skin Test Reaction Sizes, Korea 1975



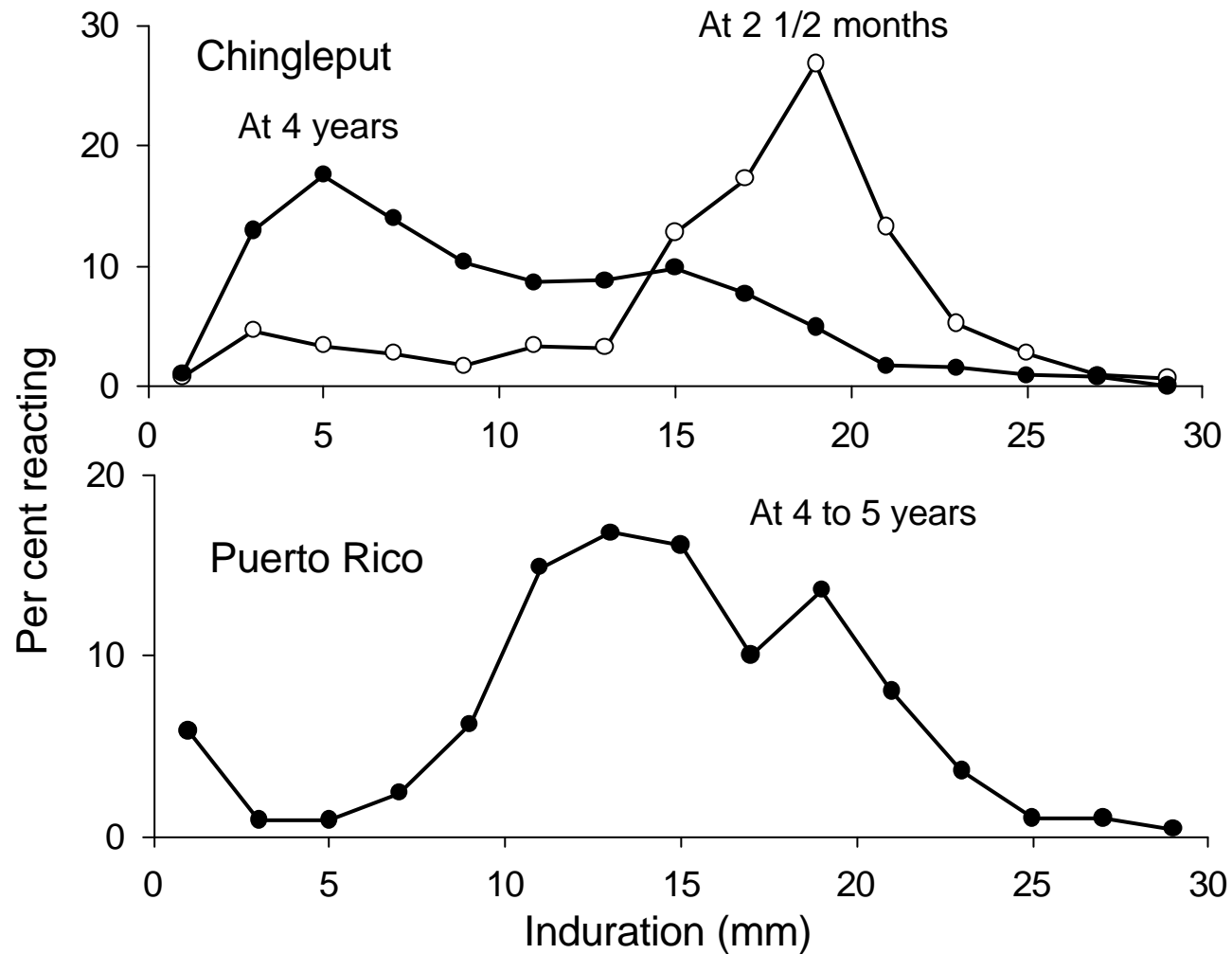
Korean Institute of Tuberculosis 1976:1-116

Tuberculin Skin Test Reaction Size Distribution in Two Tuberculin Surveys, Korea 1965 and 1995



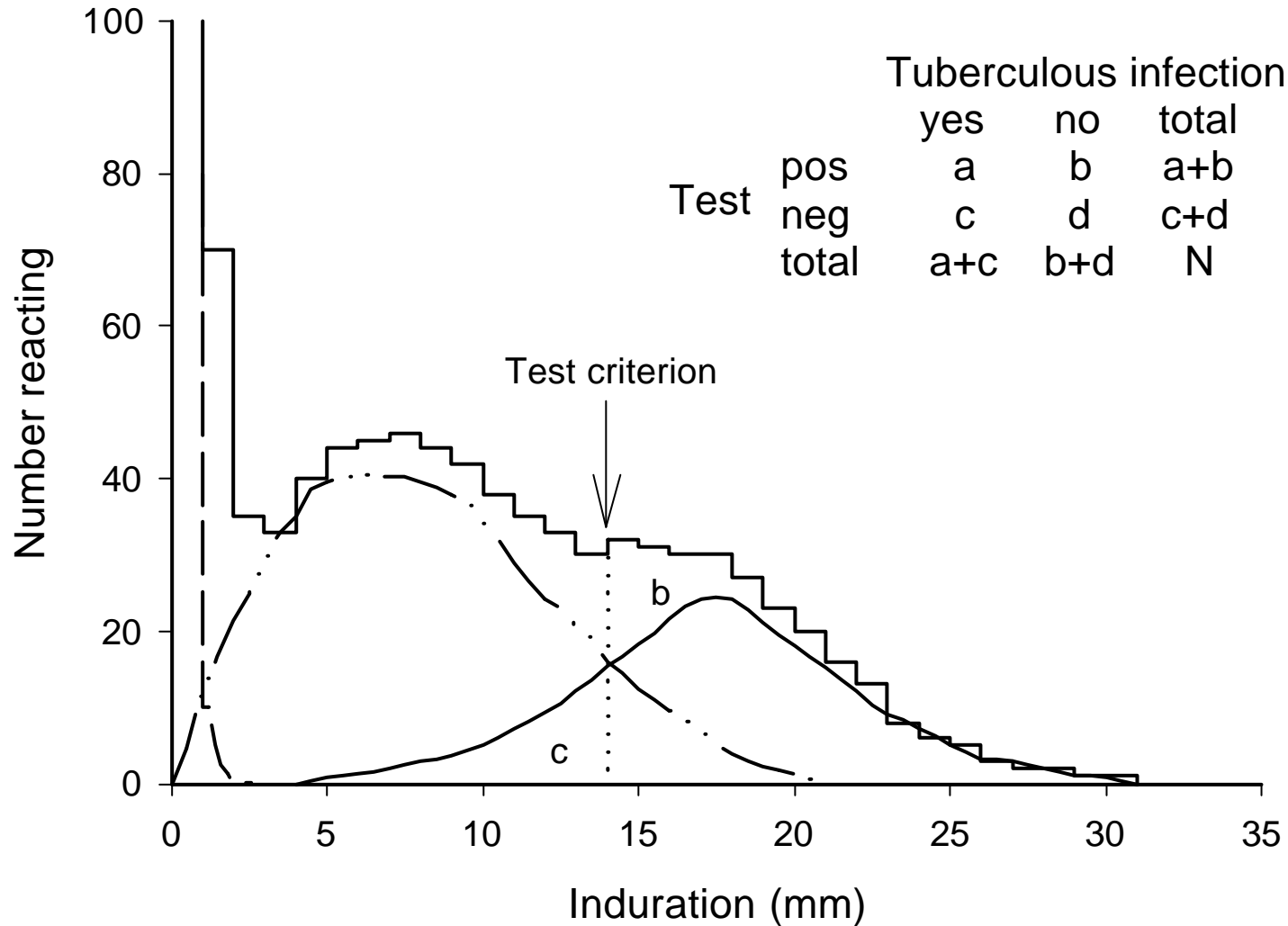
Korean Institute of Tuberculosis 1966:1-181
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Distribution of Tuberculin Skin Test Reactions 2 1/2 Months to 4 to 5 Years After BCG Vaccination in Madras and in Puerto Rico

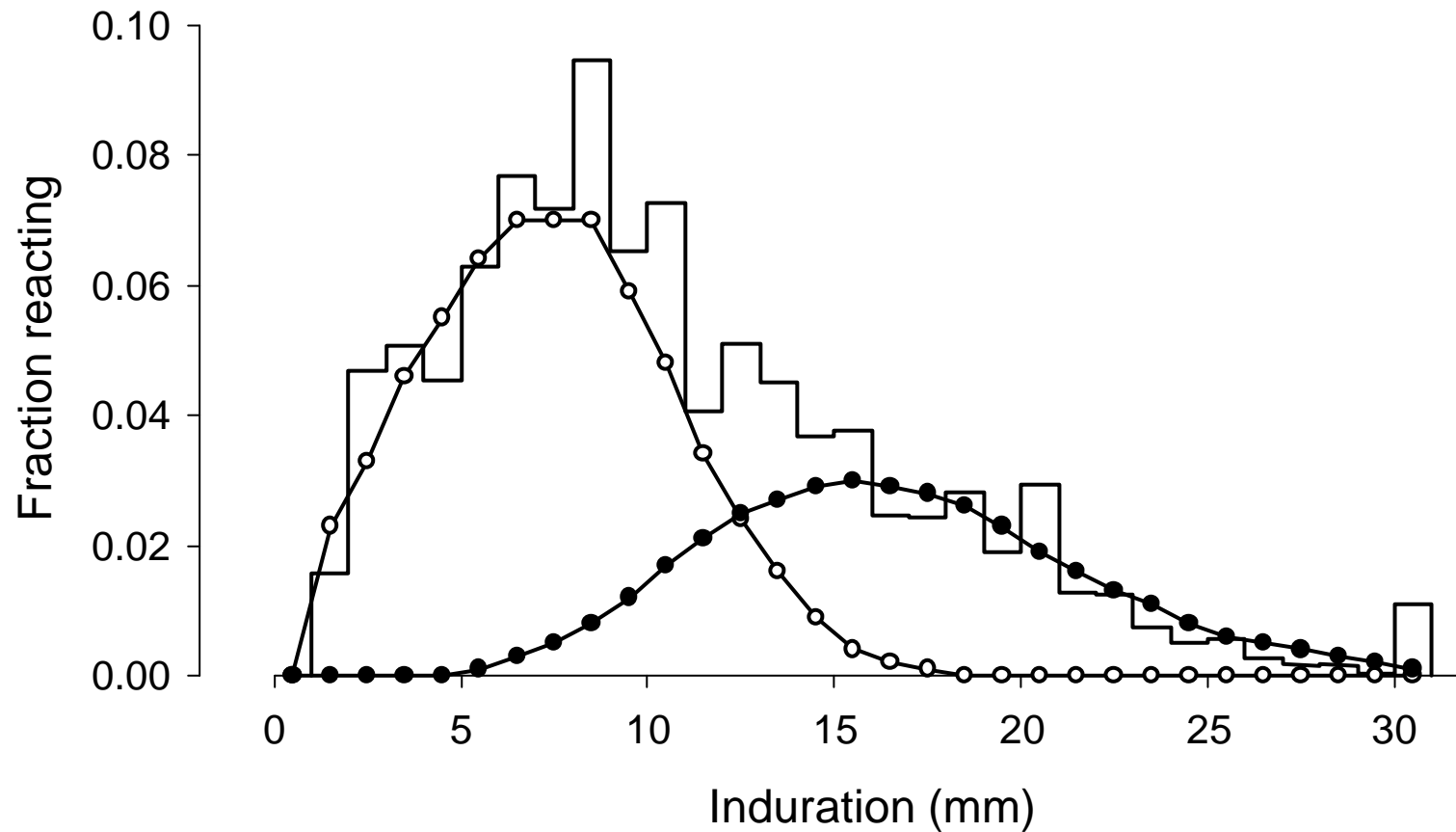


Tuberculosis Prevention Trial, Madras. Indian J Med Res 1980;72(suppl):1-74
Comstock GW, et al. Am J Public Health 1974;64:283-91

Example of a Composite Distribution Resulting from Specific and Non-Specific Reactions to Tuberculin

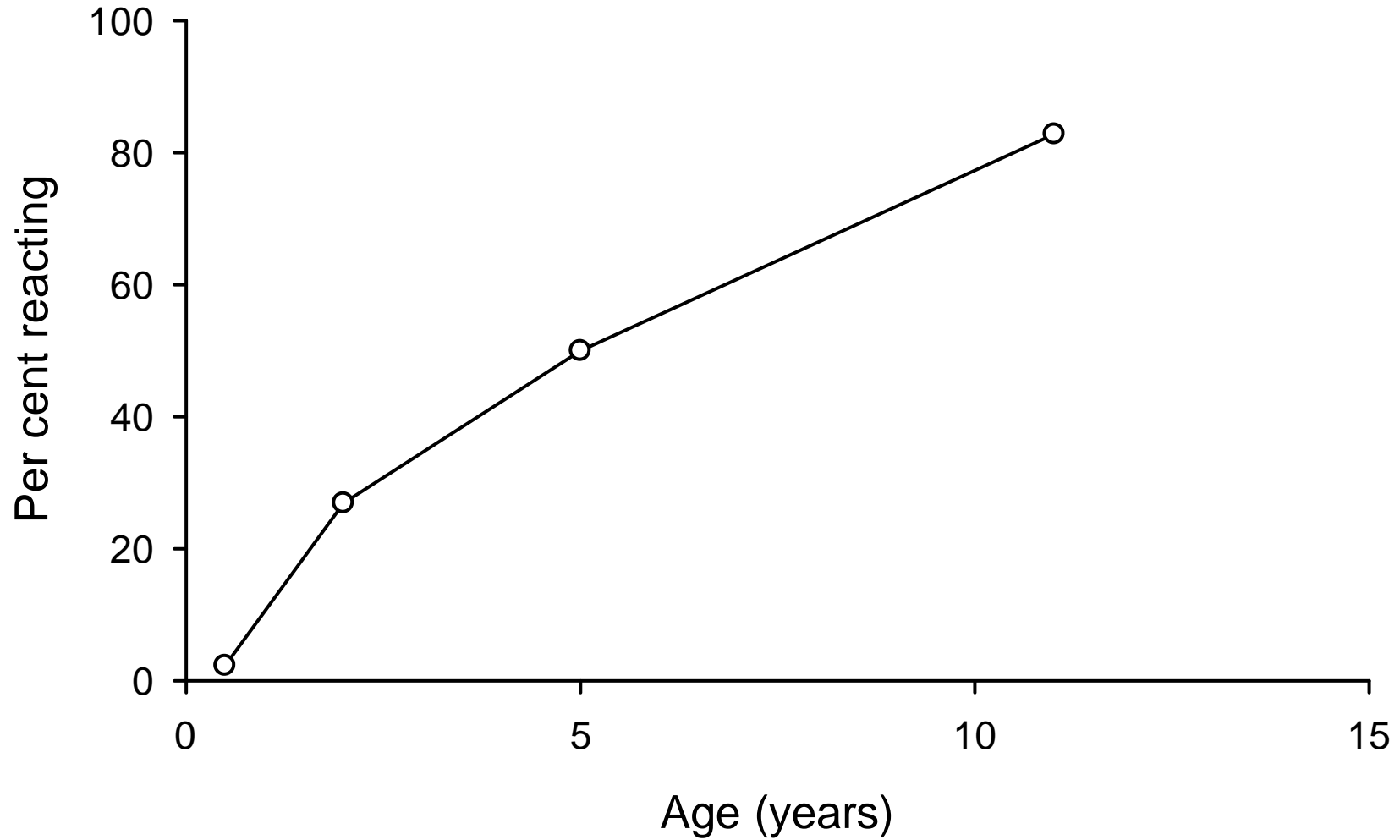


Tuberculin Skin Test Survey, Tanzania, 1988 - 1992 Observed and Mixture Components Distributions



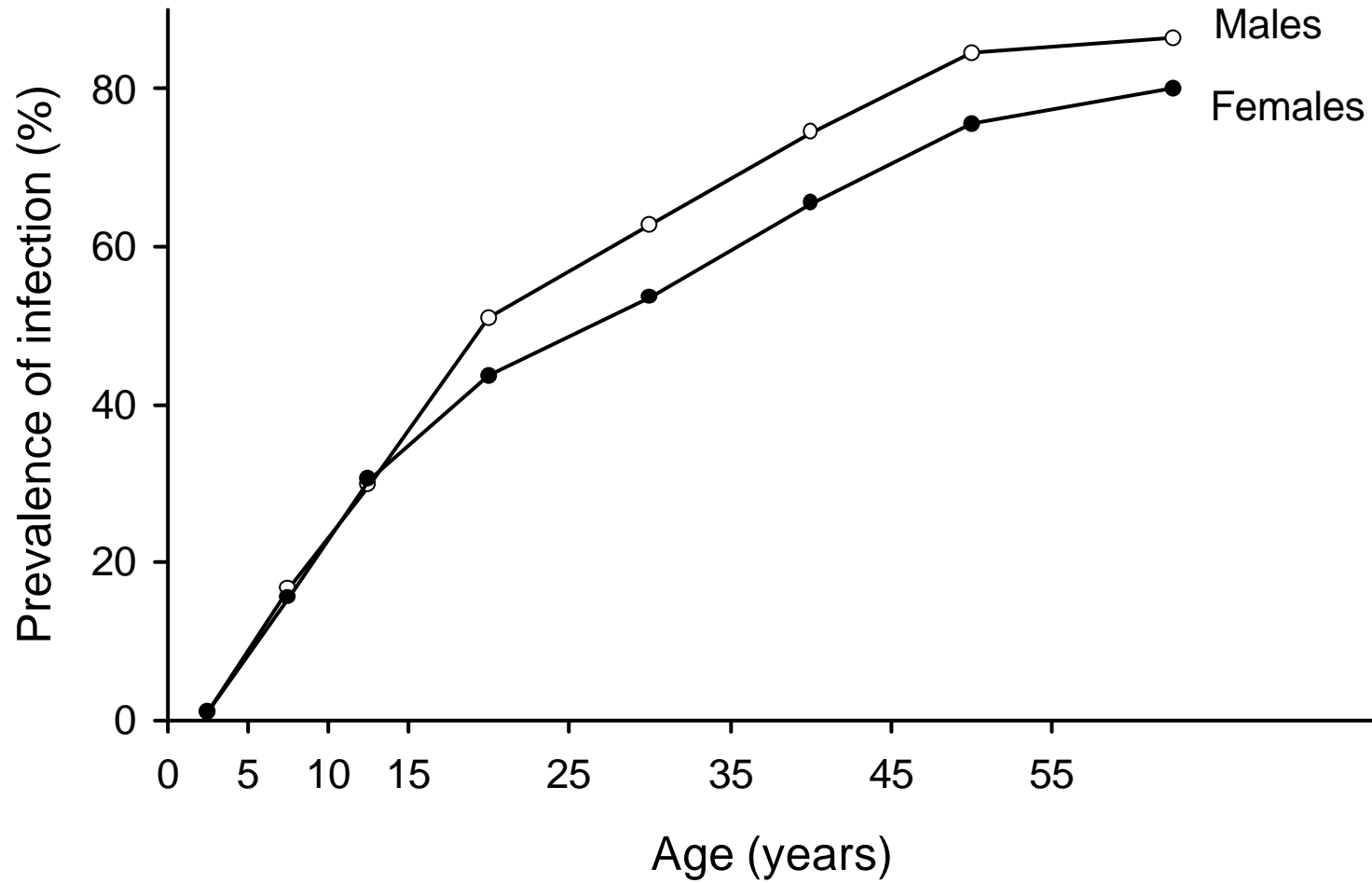
Data: Styblo K, et al. TSRU Progress Report 1995;1:140-91
Mixture model: Neuenschwander BE, et al. 1998

Age-Specific Prevalence of Tuberculous Infection in Healthy Children, Paris, 1910



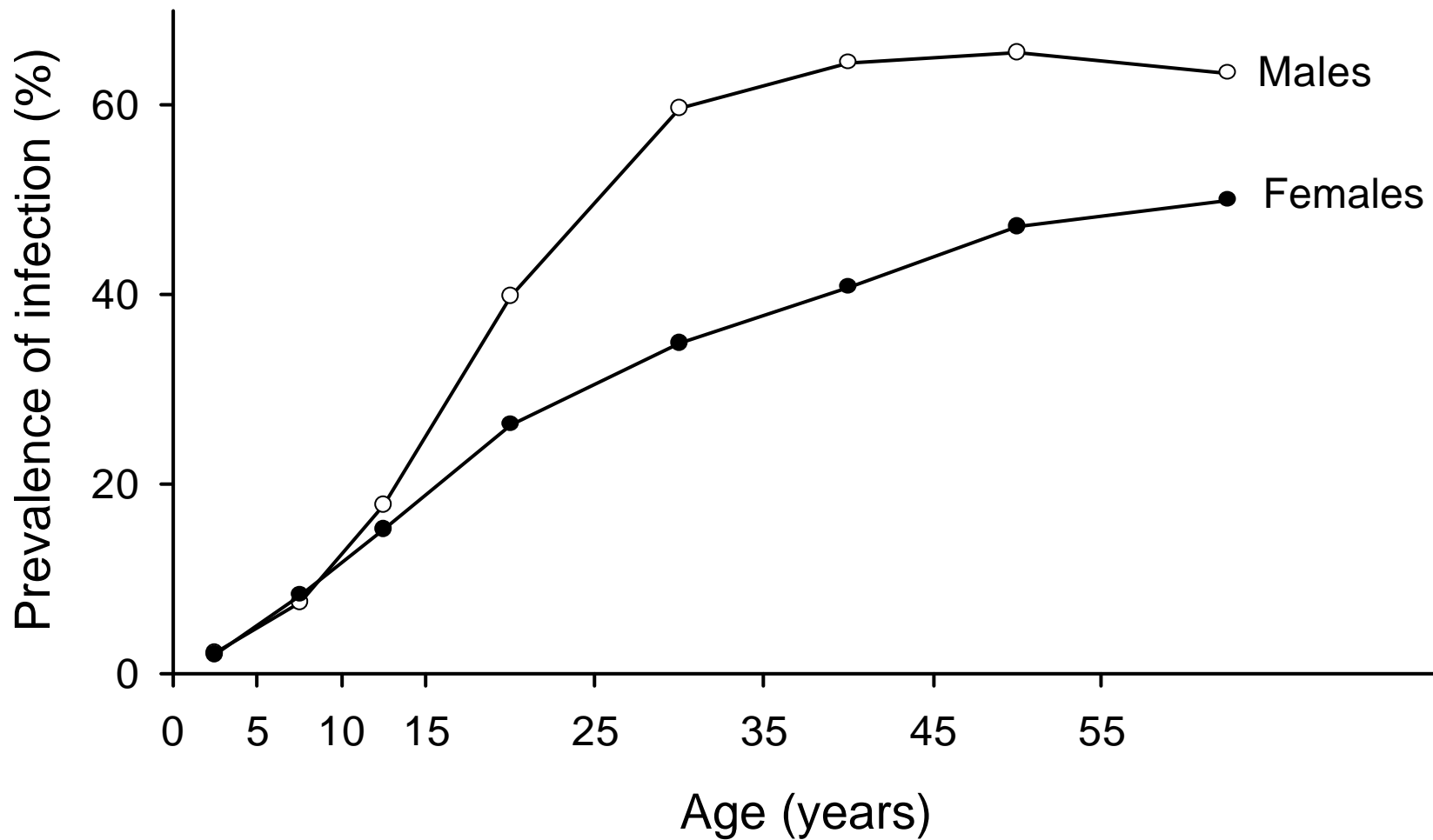
Mantoux C. Presse Méd 1910;2:10-13

Prevalence of Tuberculous Infection by Age and Sex, Denmark, 1950 - 1952



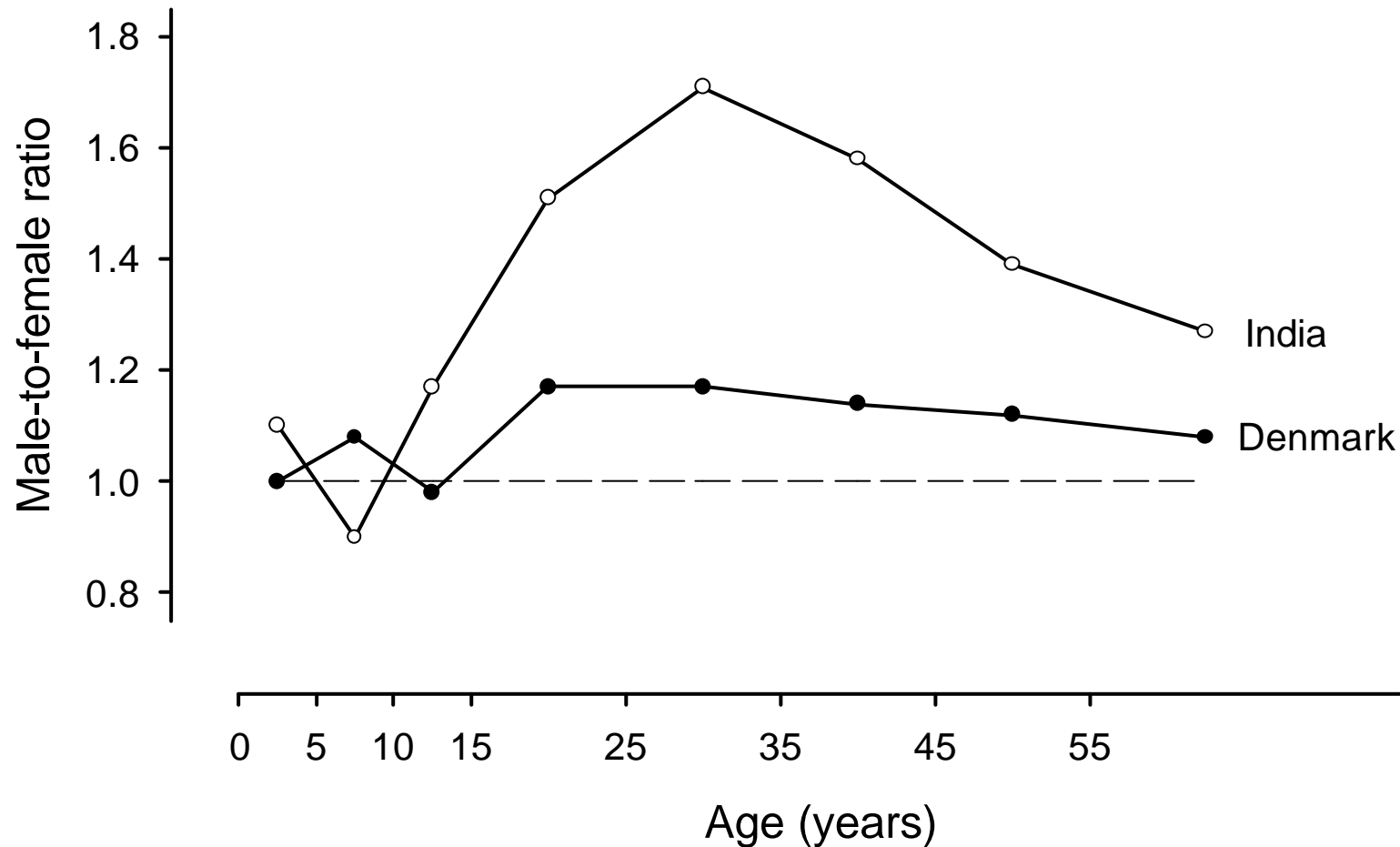
Groth-Petersen E, et al. Bull World Health Organ 1959;5:5-49

Prevalence of Tuberculous Infection by Age and Sex, India, 1961 - 1962



National Tuberculosis Institute Bangalore. Bull World Health Organ 1974;51:473-88

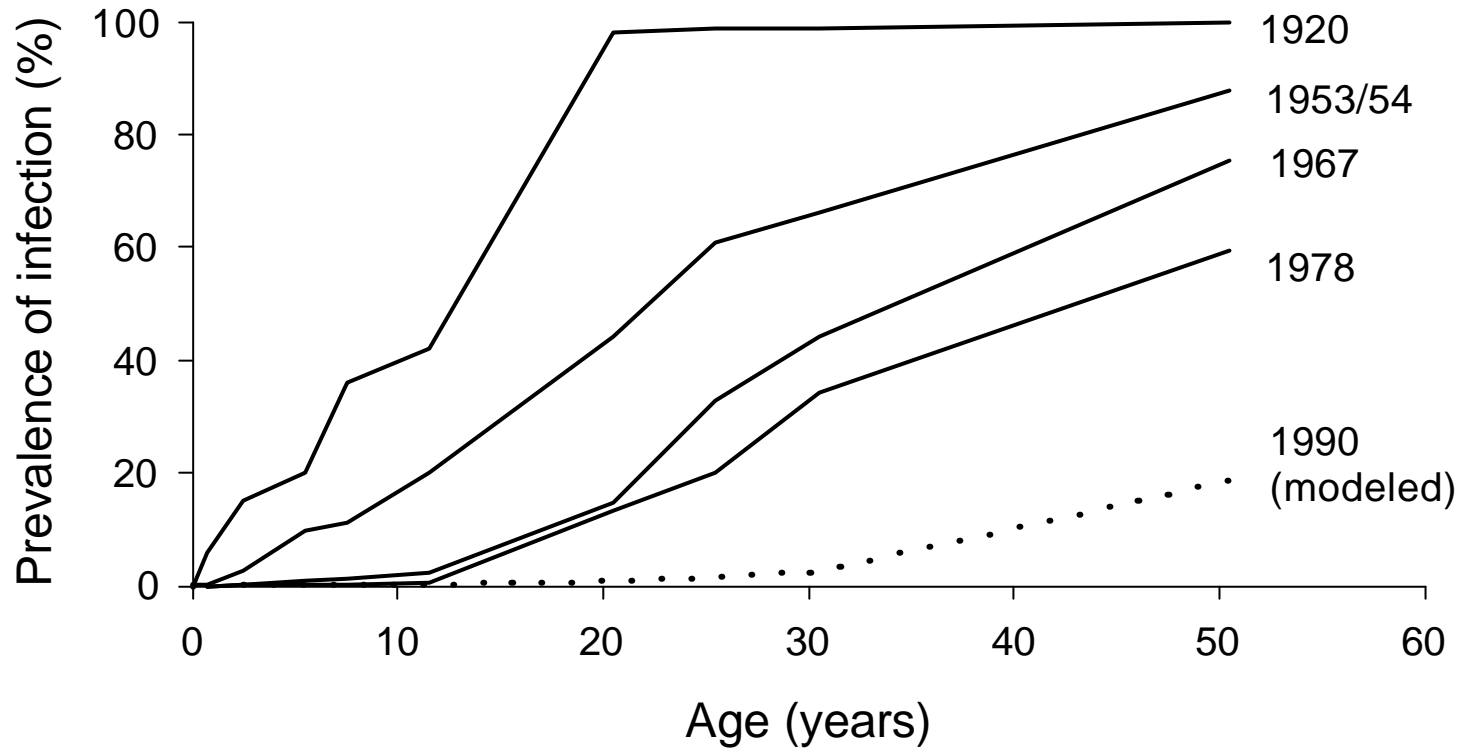
Male-to Female Ratio in Prevalence of Tuberculous Infection by Age, India 1961-1962 and Denmark, 1950-52



National Tuberculosis Institute Bangalore. Bull World Health Organ 1974;51:473-88

Groth-Petersen E, et al. Bull World Health Organ 1959;21:5-49

Age-Specific Prevalence of Tuberculous Infection in Cross-Sectional Surveys in Switzerland



Zuberbühler JG. Thesis, University of Zürich, 1981:1-121

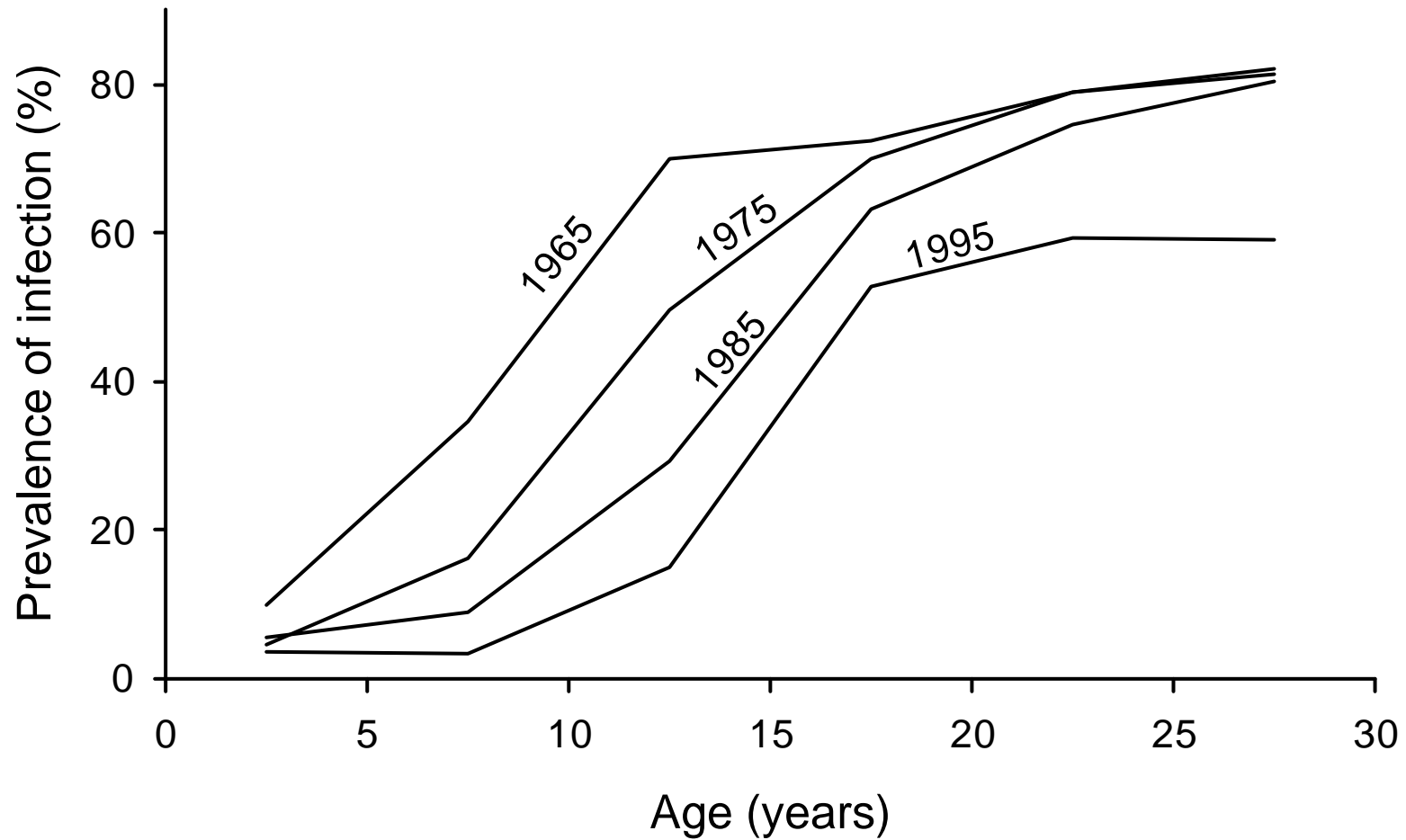
Hofer S. Thesis, University of Zürich 1982;1-45

Haefliger E. Prax Klin Pneumol 1982;36:335-64

Haefliger E. Therapiewoche Schweiz 1989;5:855-66

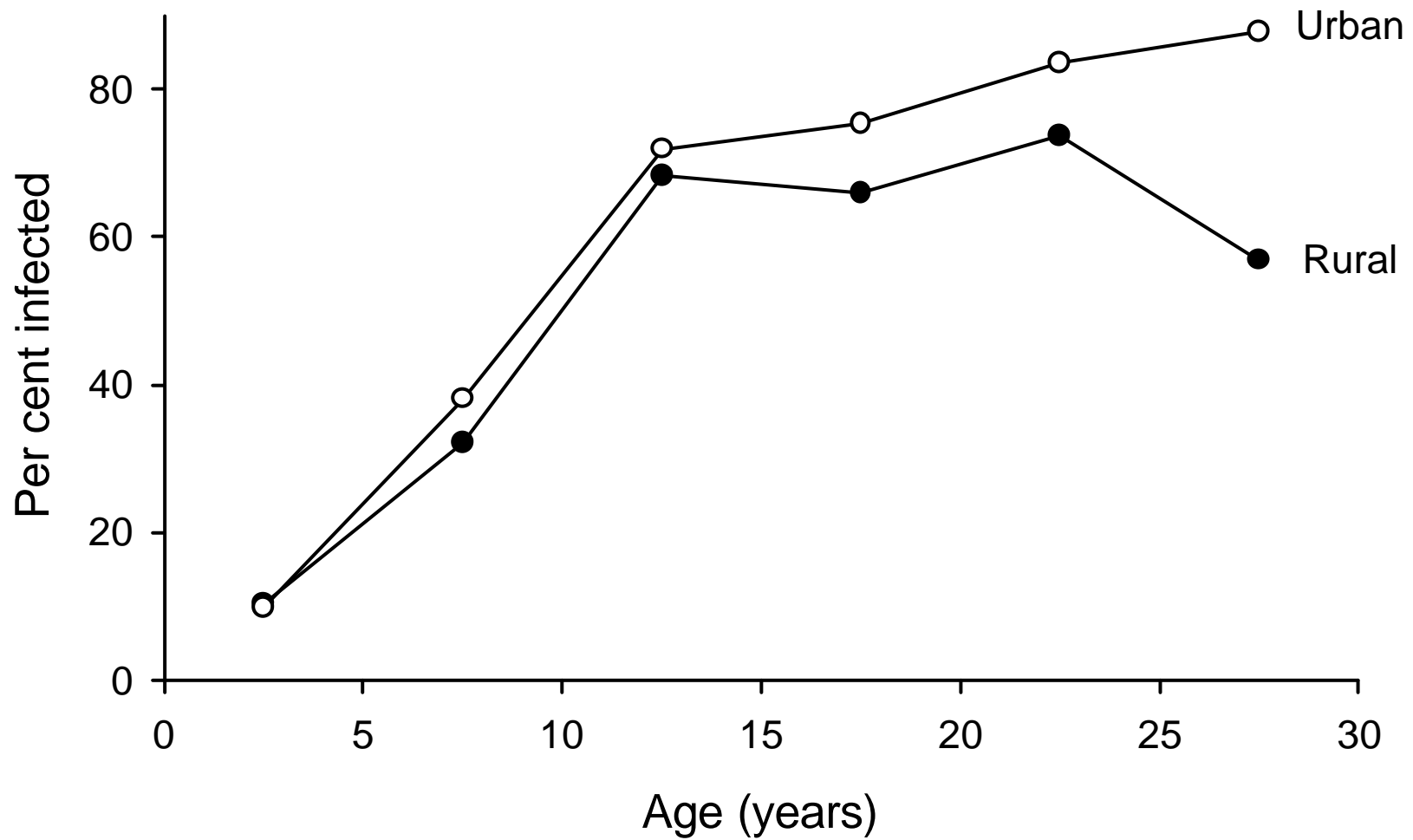
Rieder HL, et al. Schweiz Med Rundschau 1990;79:675-9

Prevalence of Tuberculous Infection (10+ mm) by Age, Korea, 1965 - 1995



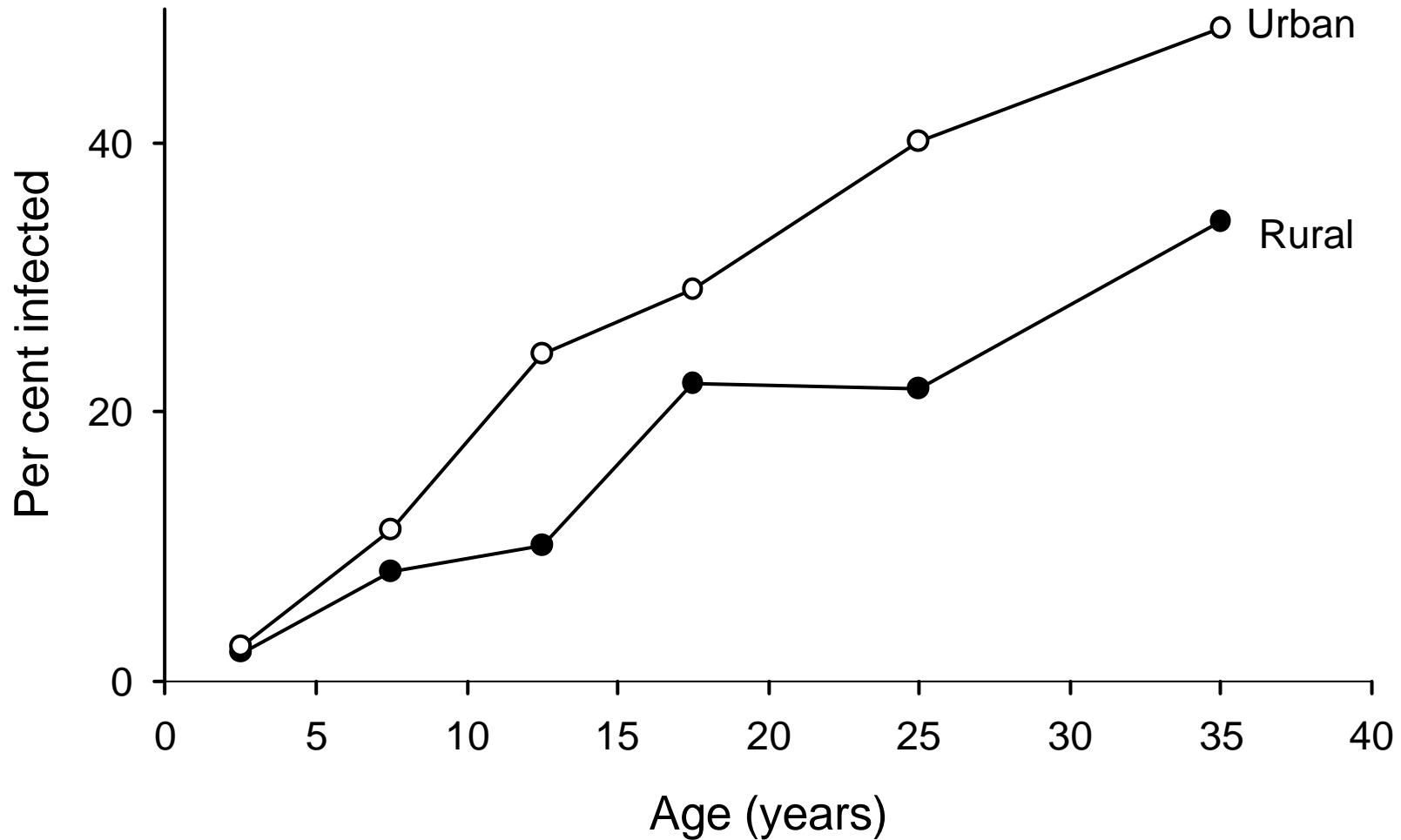
Korean Institute of Tuberculosis, 1965 - 1995

Prevalence of Tuberculous Infection by Age and Residence, Korea, 1965



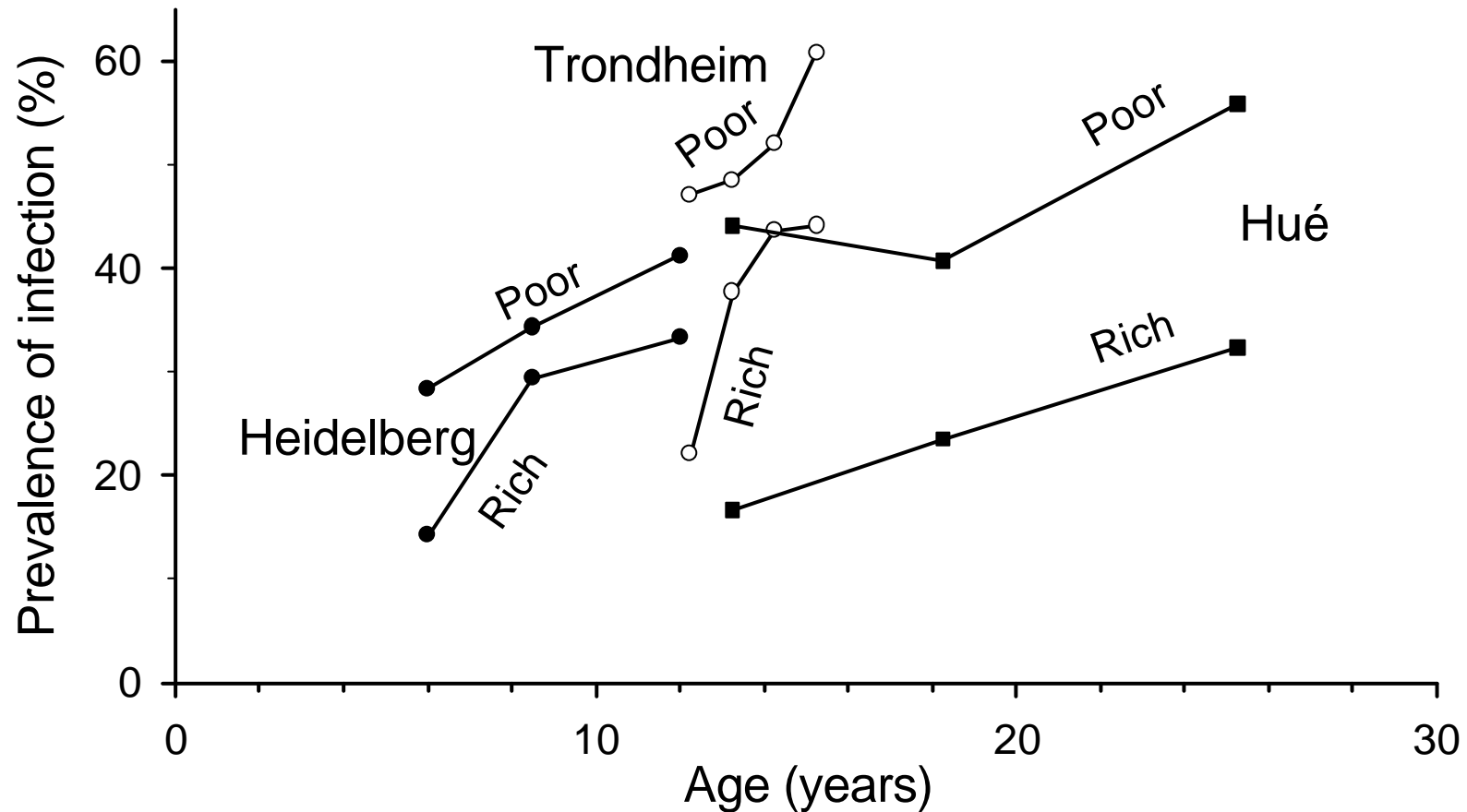
Korean Institute of Tuberculosis, 1966

Prevalence of Tuberculous Infection by Age and Residence, in Zanzibar, 1961



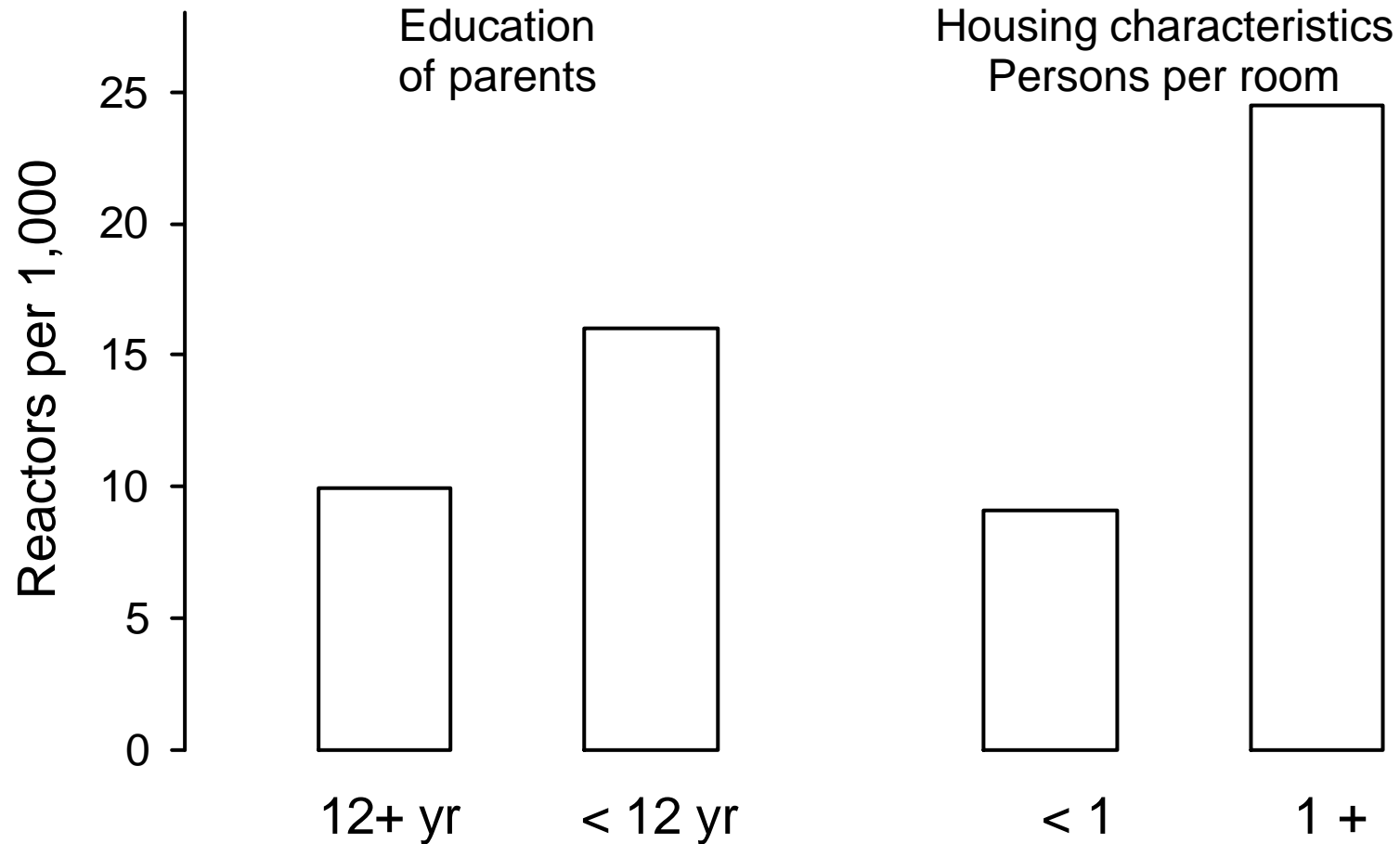
Roelsgaard E, et al. Bull World Health Organ 1964;30:459-518

Prevalence of Tuberculous Infection by Age and Socioeconomic Status in Heidelberg, Trondheim, and Hué, 1910 - 1920



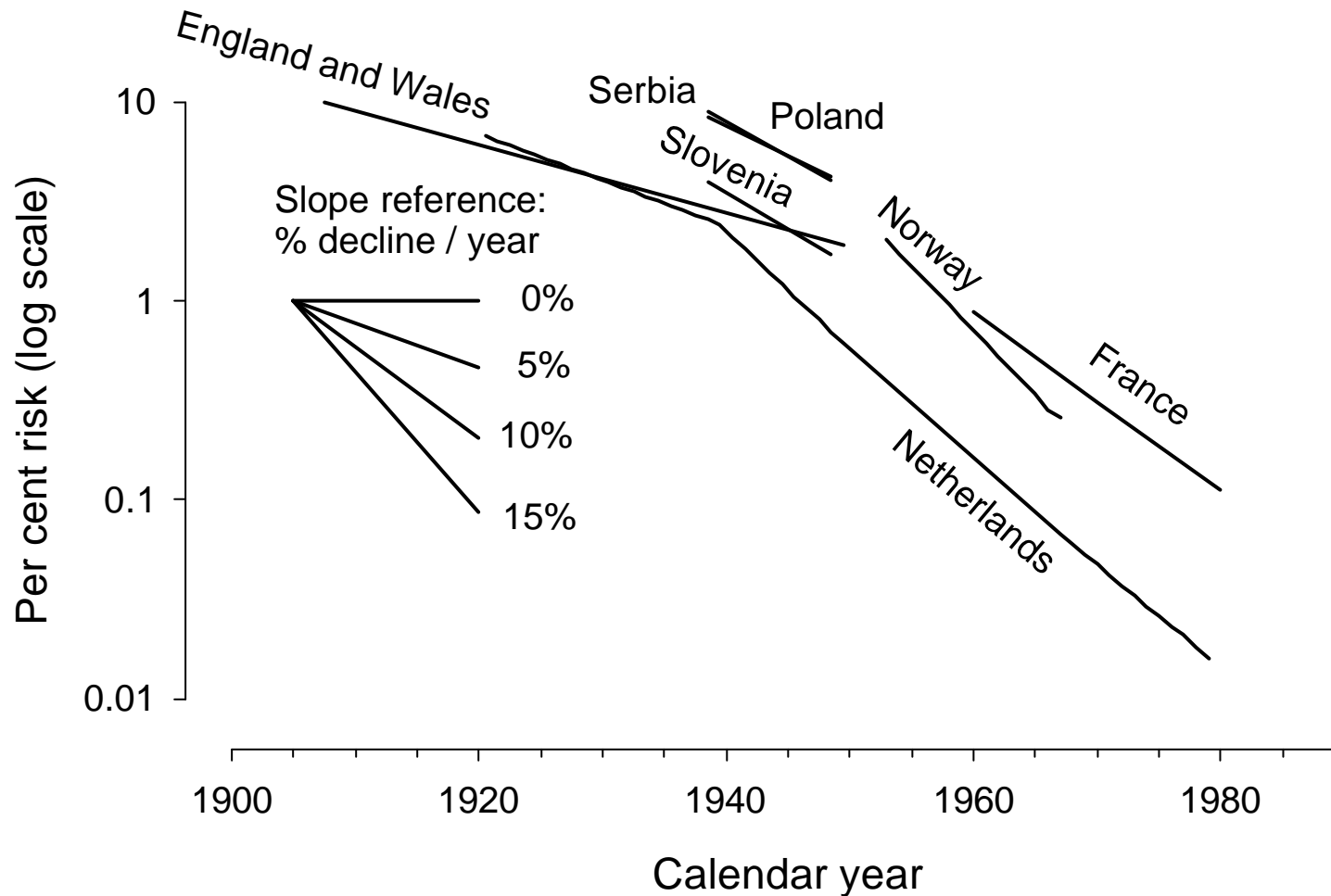
D'Arcy Hart P. Br Med Res Council Spec Ser 1932;No. 164:5-132

Frequency of Large Tuberculin Skin Test Reactions Among High School Students, Washington County, USA, 1963



Kuemmerer JM, et al. Am Rev Respir Dis 1967;96:885-92

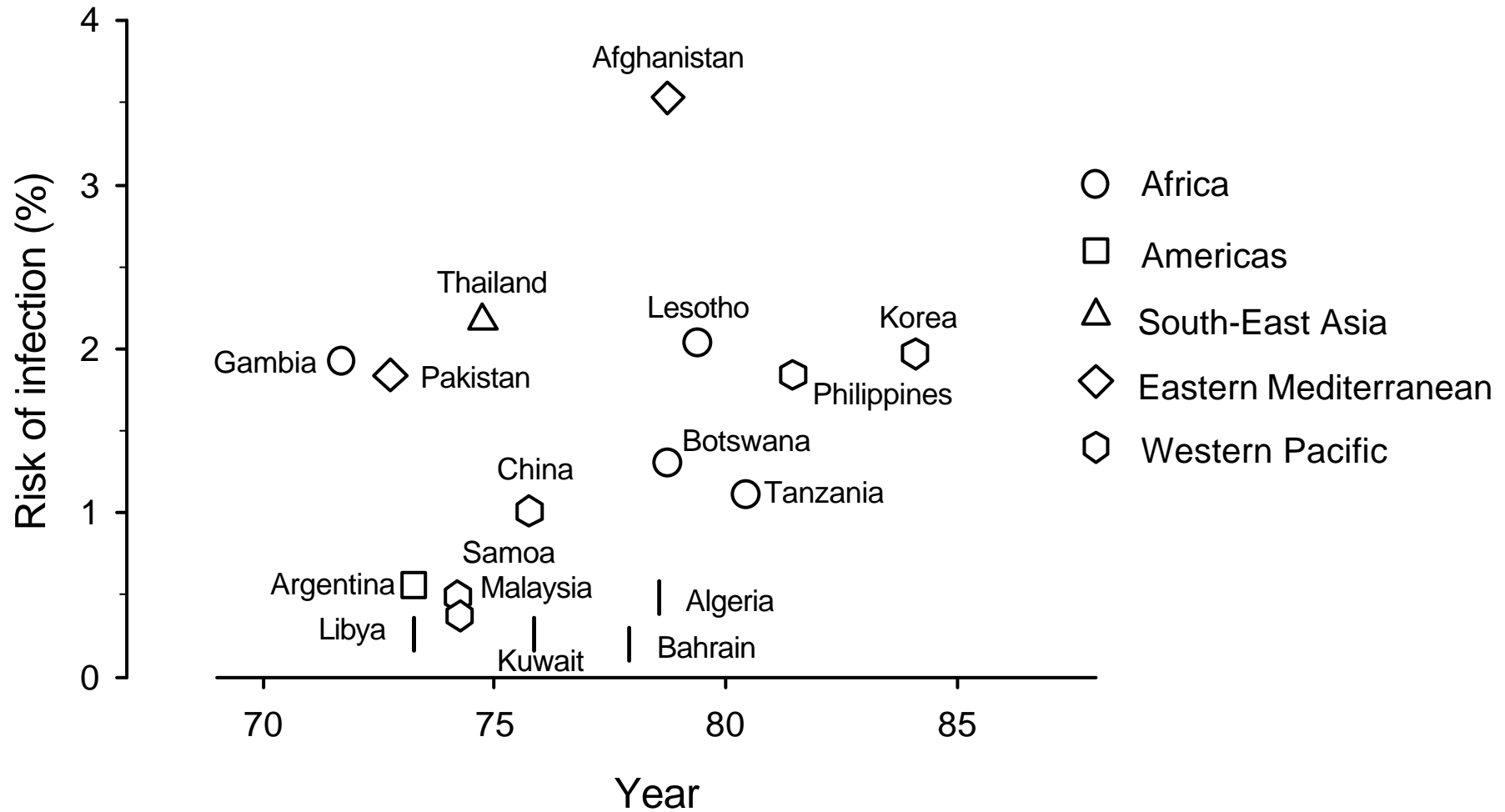
Secular Trend in Annual Risk of Infection, Selected European Countries



Waalder H, et al. *Bull Int Union Tuberc* 1975;50:5-61
Sutherland I, et al. *Bull Int Union Tuberc* 1971;45:75-114
Lotte A, et al. *Int J Epidemiol* 1973;2:265-82

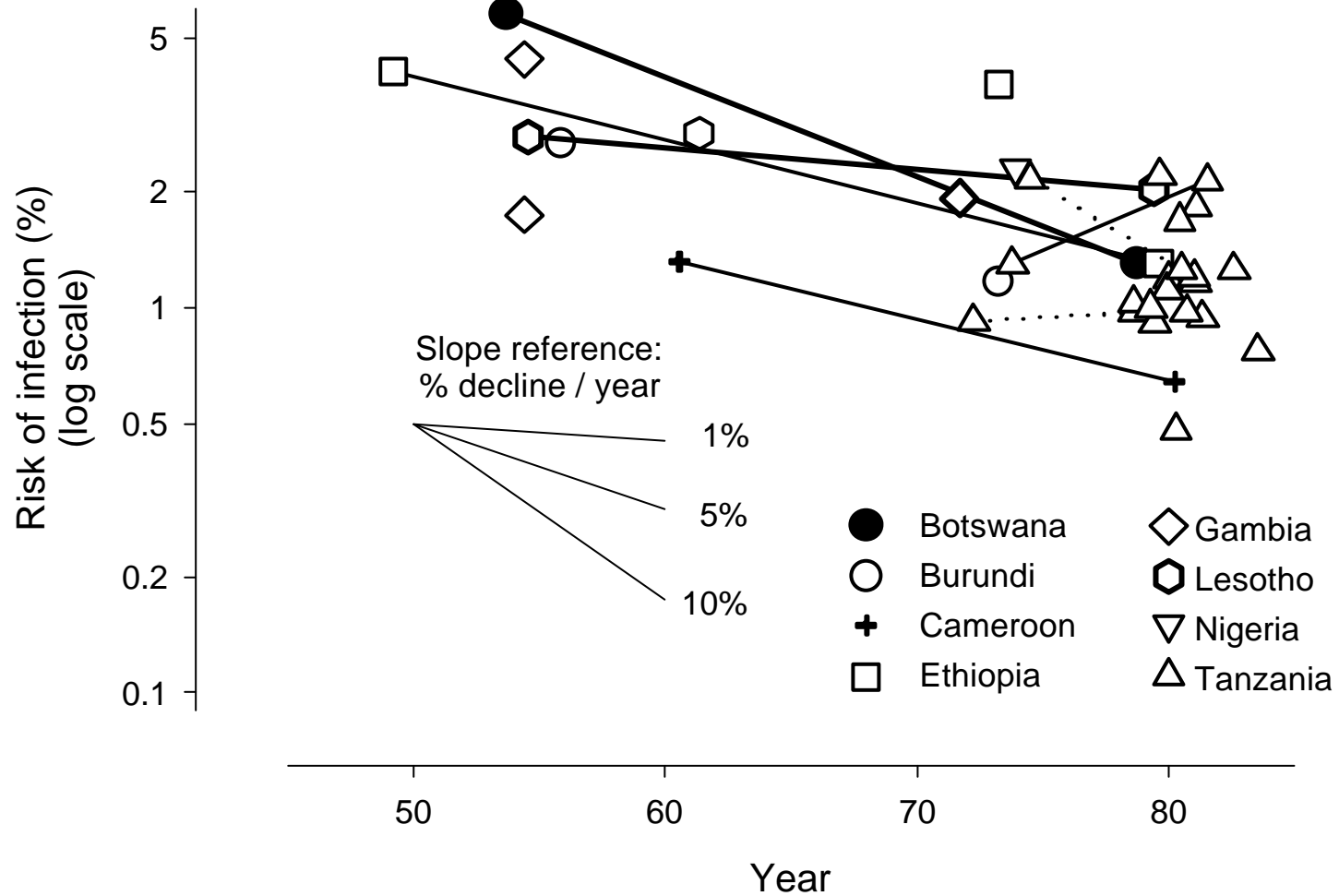
Sutherland I, et al. *Tubercle* 1983;64:241-253
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Annual Risk of Tuberculous Infection in Low Income Countries of Five WHO Regions

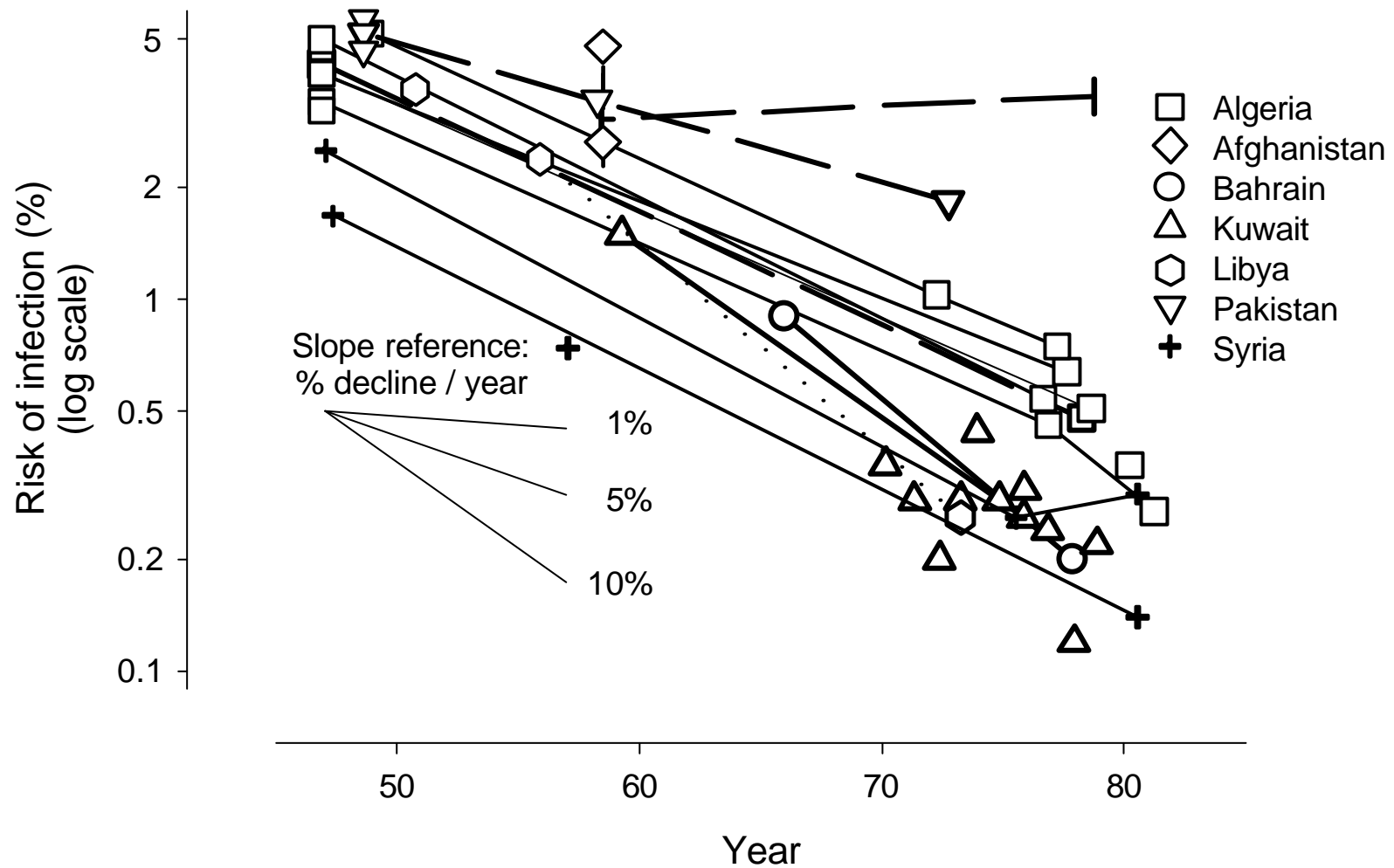


Cauthen GM, et al. WHO Document 1988;WHO/TB/88.154:1-34

Annual Risk of Tuberculous Infection WHO African Region (Except Algeria)

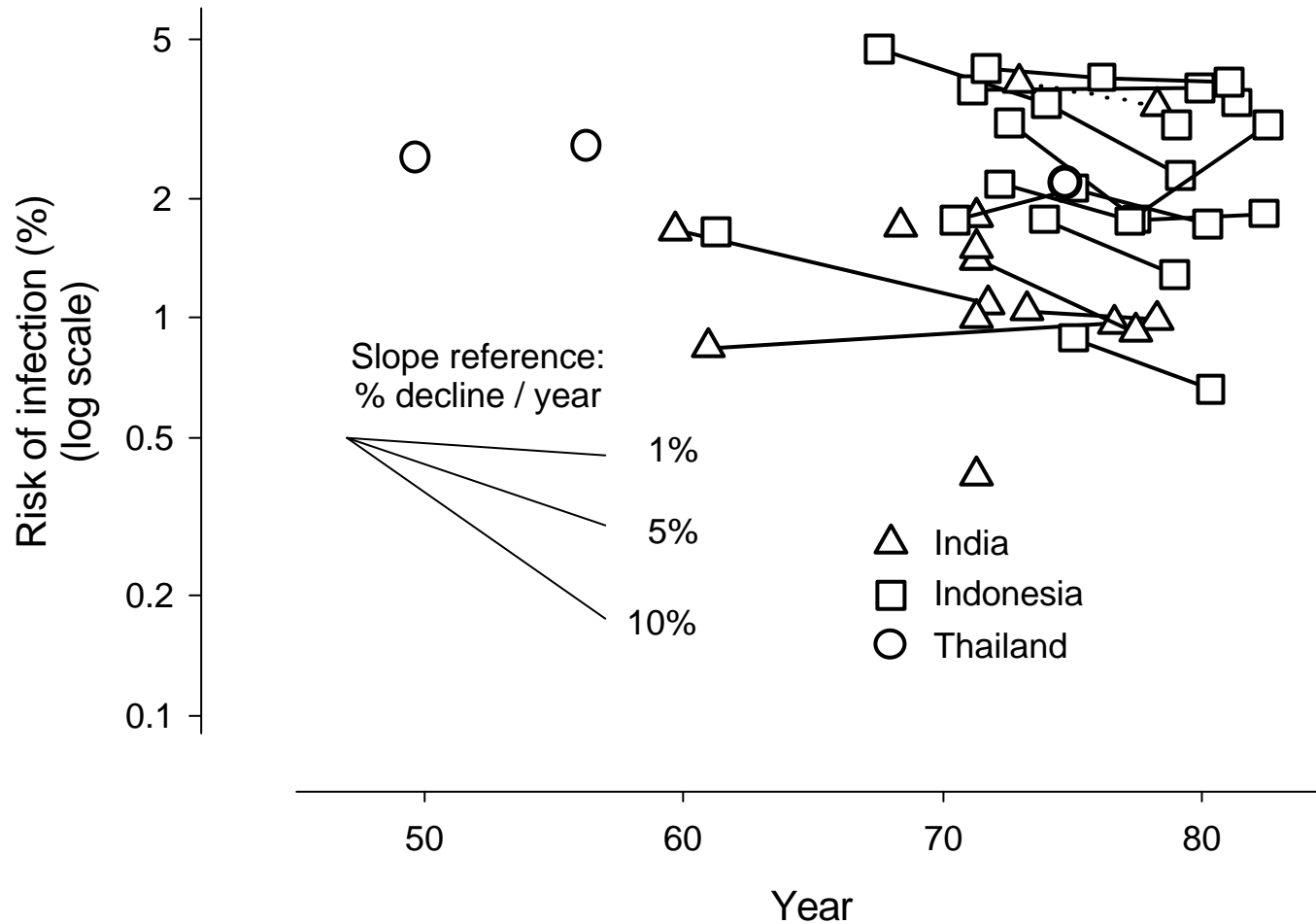


Annual Risk of Tuberculous Infection WHO Eastern Mediterranean Region

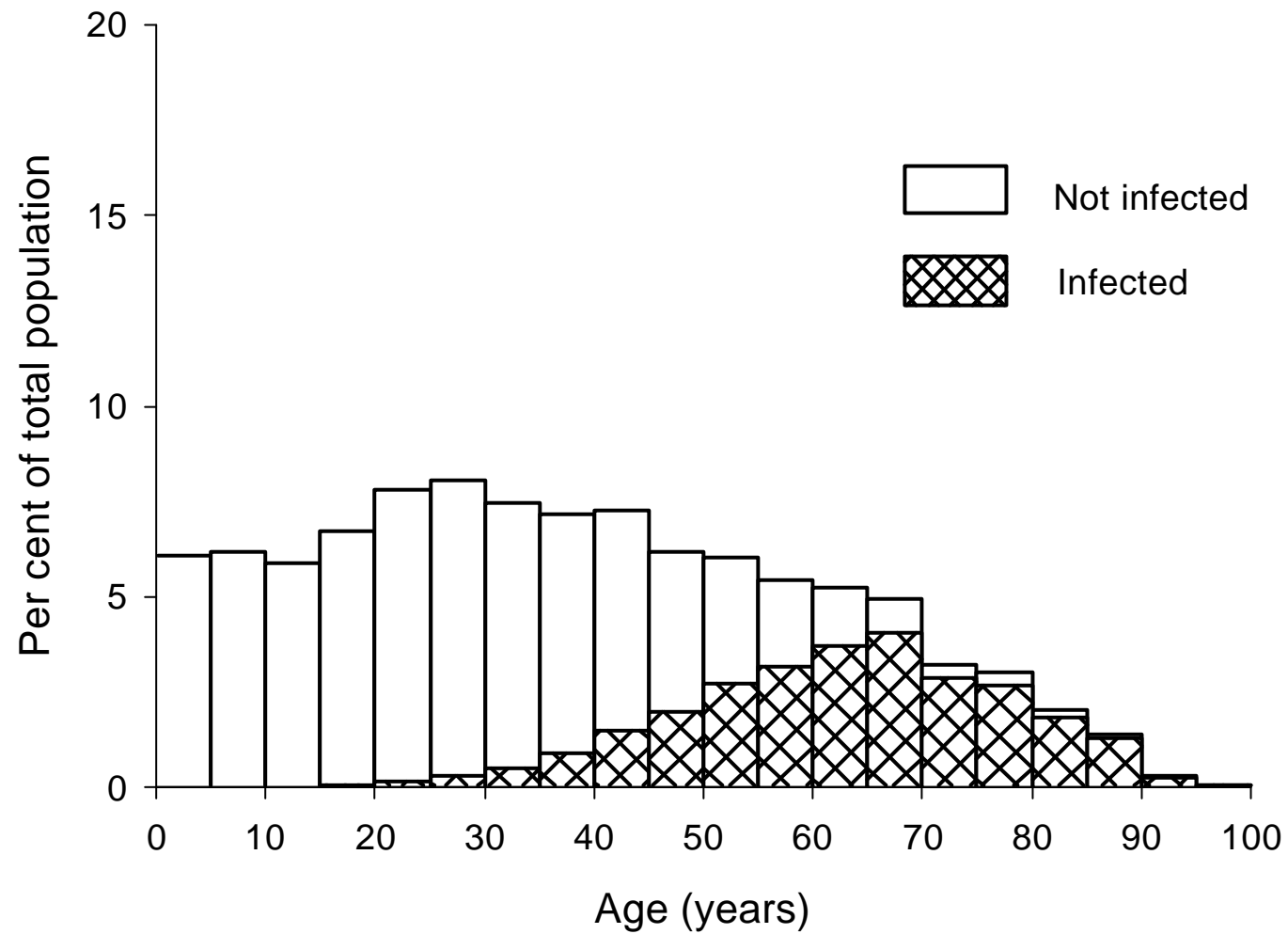


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Annual Risk of Tuberculous Infection WHO South-East Asia Region

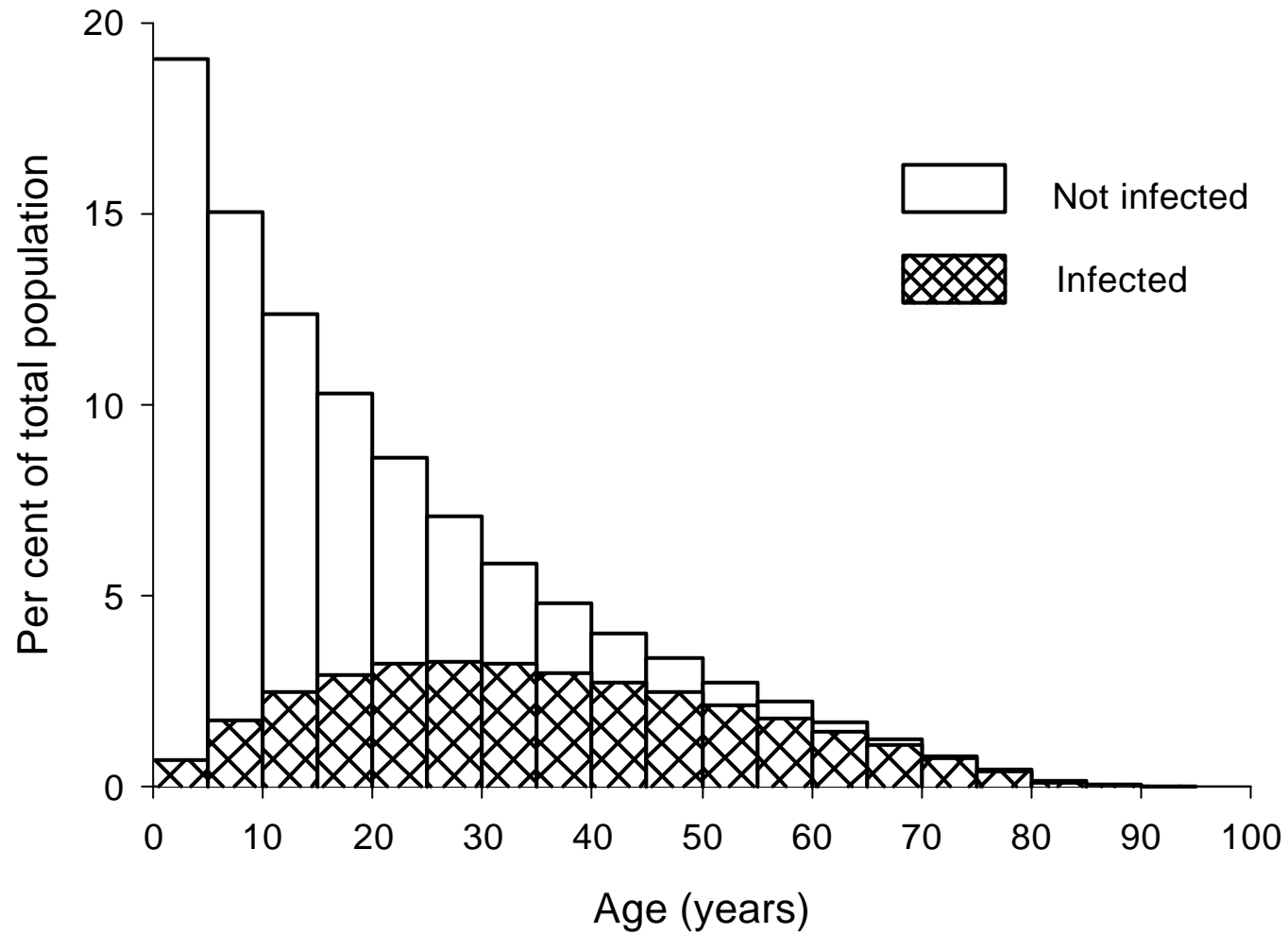


Age-specific Prevalence of Tuberculous Infection in Western Europe



Data courtesy: ten Dam HG, World Health Organization, 1990

Age-specific Prevalence of Tuberculous Infection in Tropical and Southern Africa



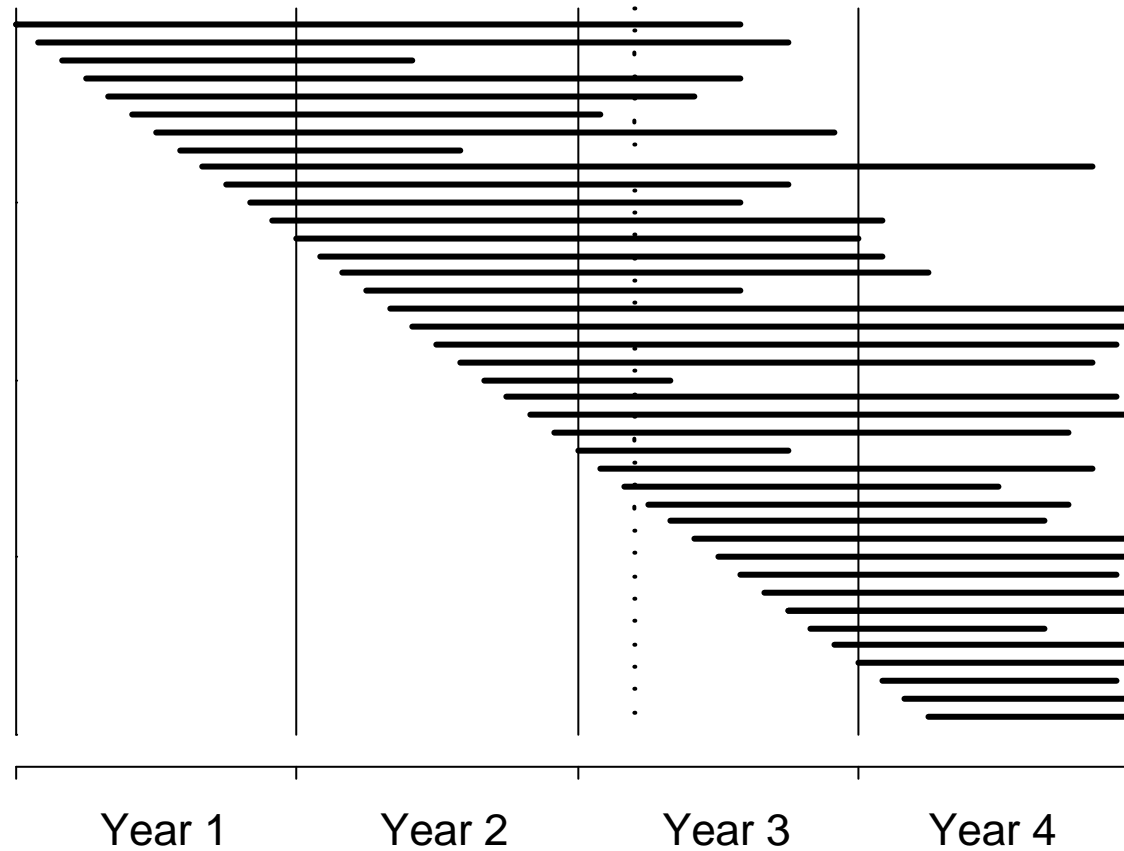
Data courtesy: ten Dam HG, World Health Organization, 1990

Age-specific Prevalence of Tuberculous Infection in South-East Asia and Oceania (Excl. AUS and NZ)



Data courtesy: ten Dam HG, World Health Organization, 1990

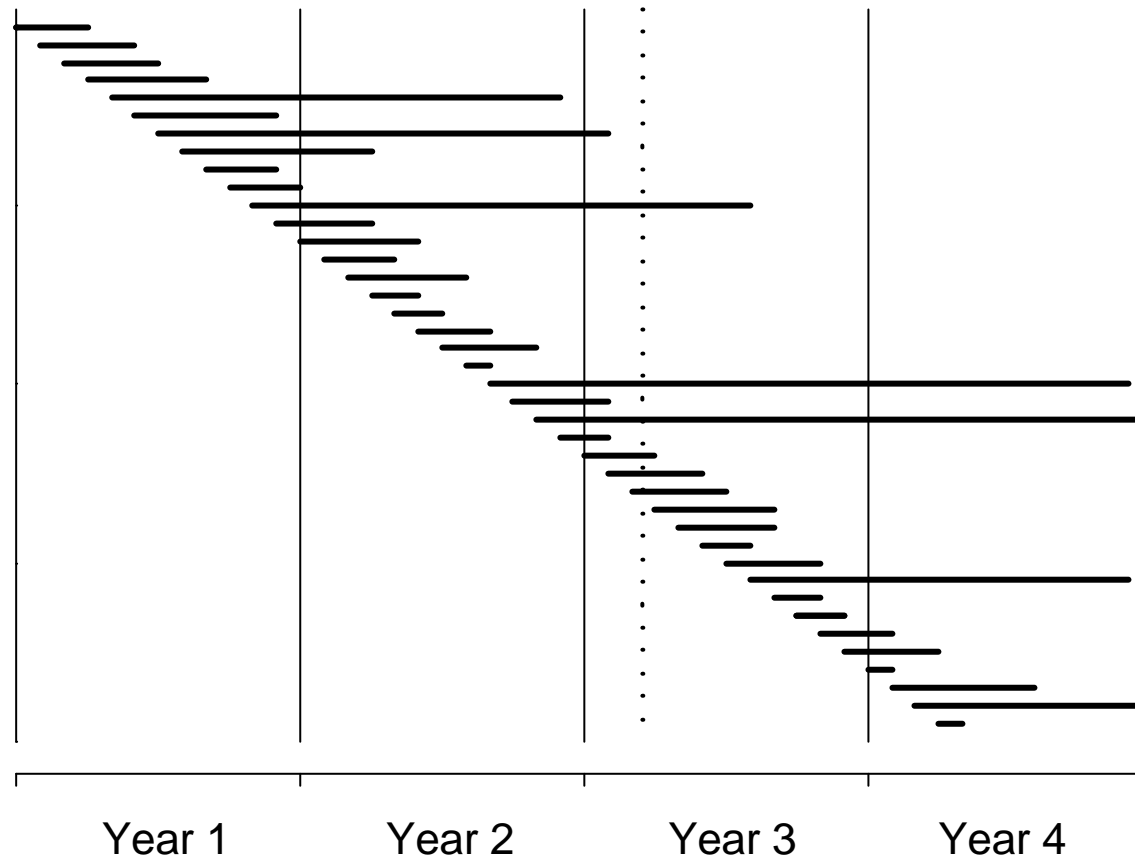
Incidence, Point Prevalence, and Period Prevalence



In year 3:

Incidence:	12 cases
Point prevalence, March 15:	24 cases
Period prevalence year 3:	288 person-months

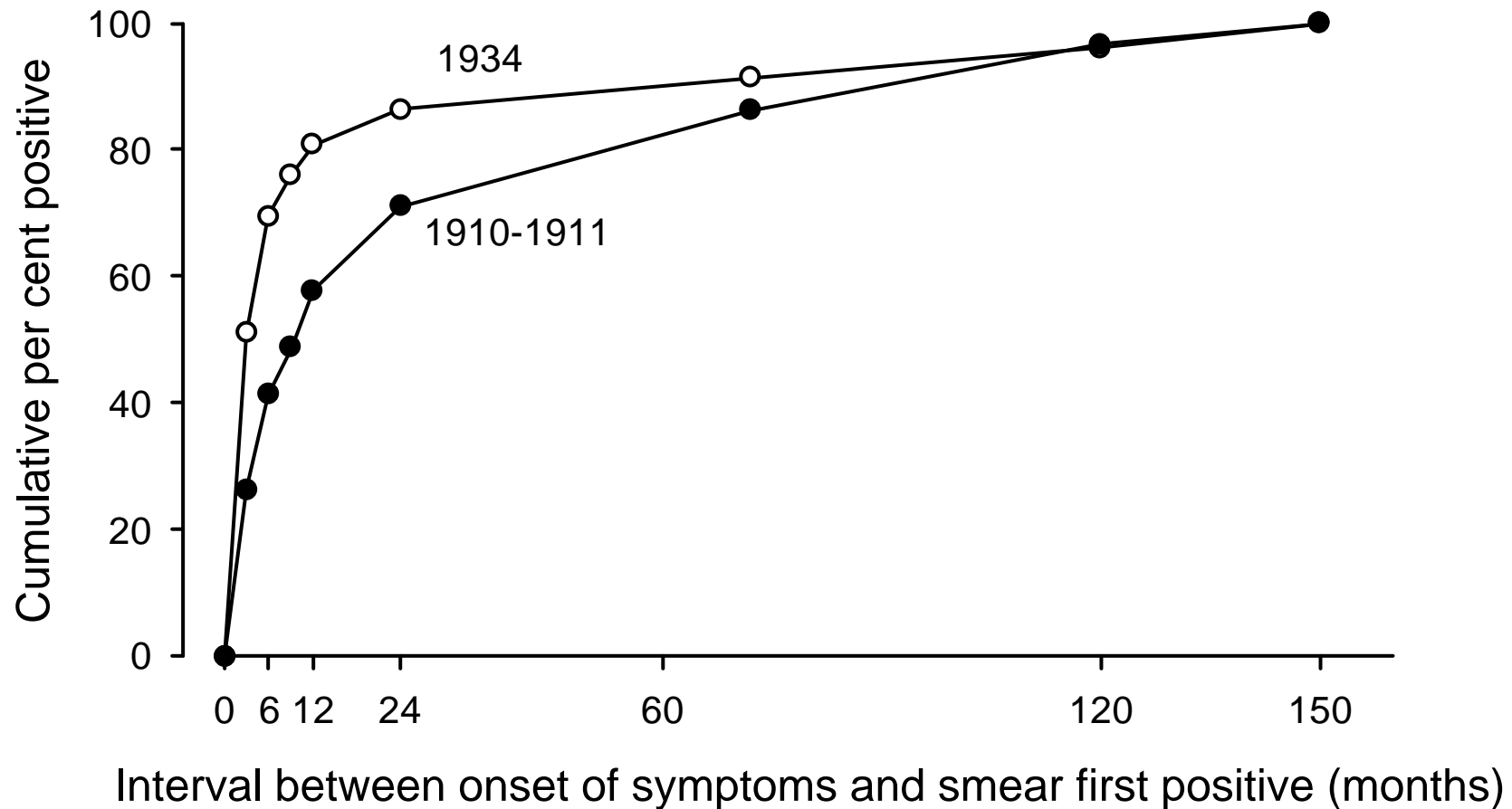
Incidence, Point Prevalence, and Period Prevalence



In year 3:

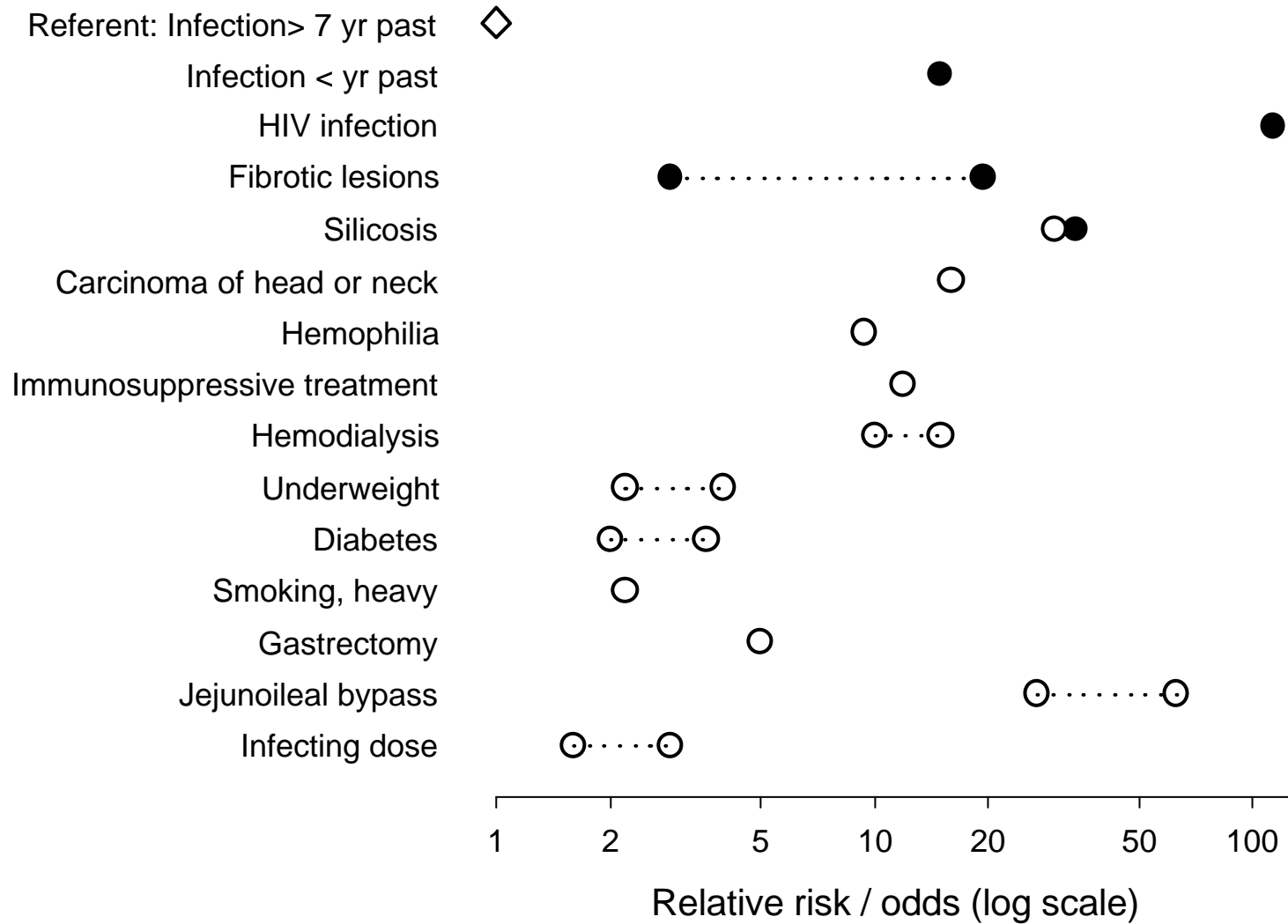
Incidence:	12 cases
Point prevalence, March 15:	6 cases
Period prevalence year 3:	72 person-months

Time After Onset of Symptoms of Pulmonary Tuberculosis Sputum Smears Became Positive for the First Time, Sweden, 1910 and 1934

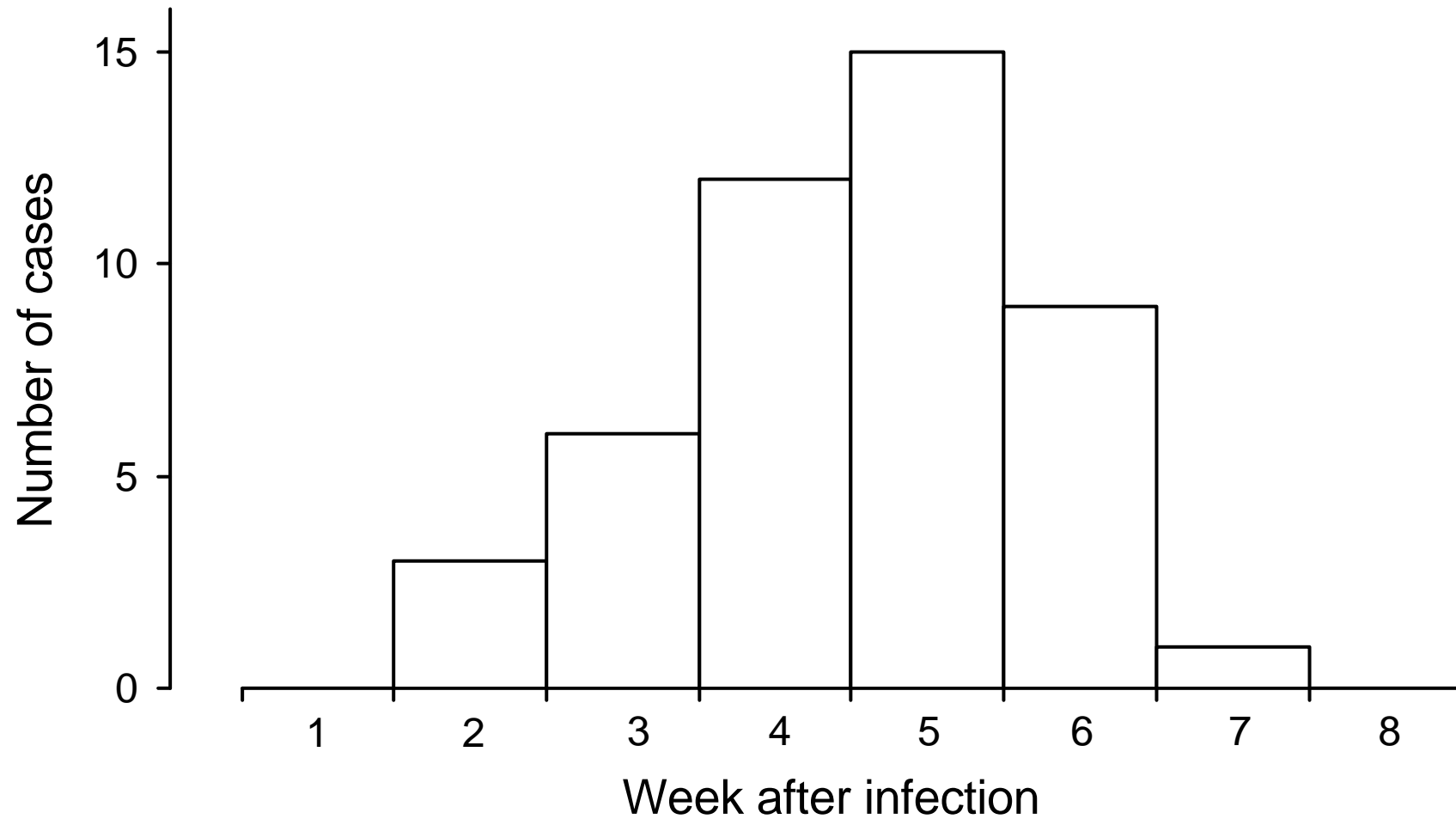


Berg G. In: Ohlson, publisher, Lund, Sweden: 1939:1-207

Selected Risk Factors for Tuberculosis Given that Tuberculous Infection has Occurred

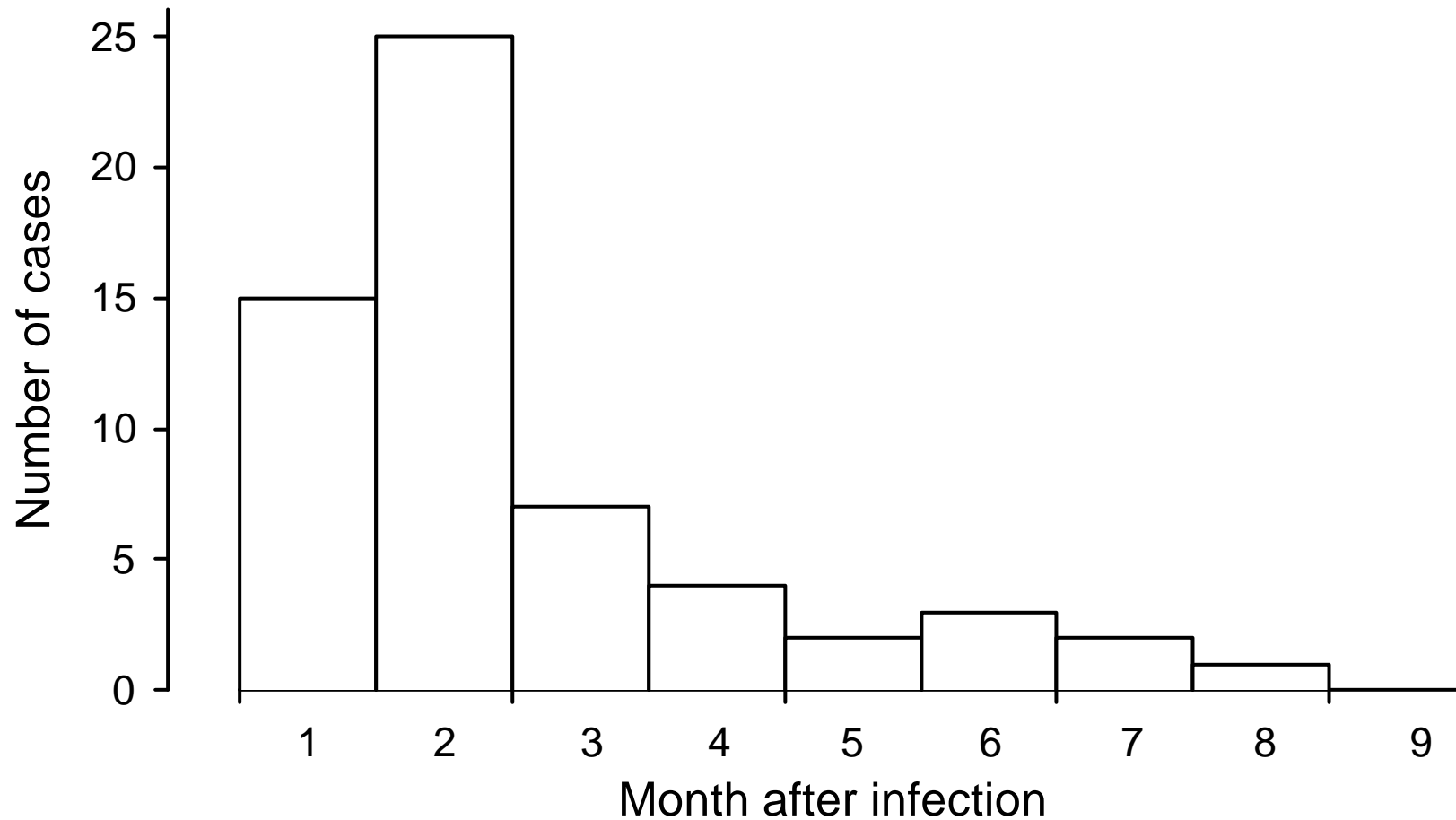


Interval Between Infection and Manifestation of Primary Tuberculosis



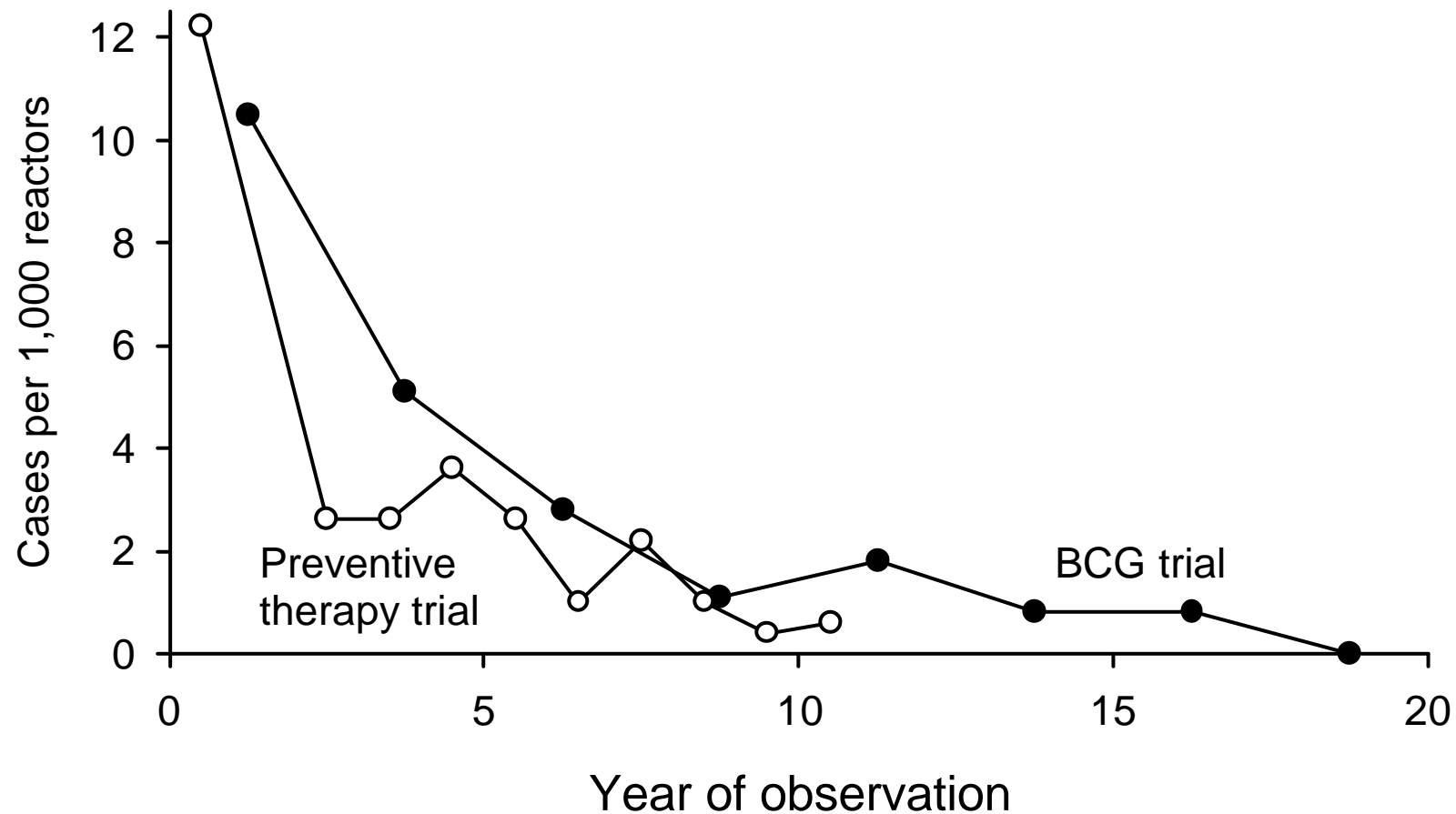
Wallgren A. Tubercle 1948;29:245-51

Interval Between Infection and Manifestation of Tuberculous Meningitis



Wallgren A. Tubercle 1948;29:245-51

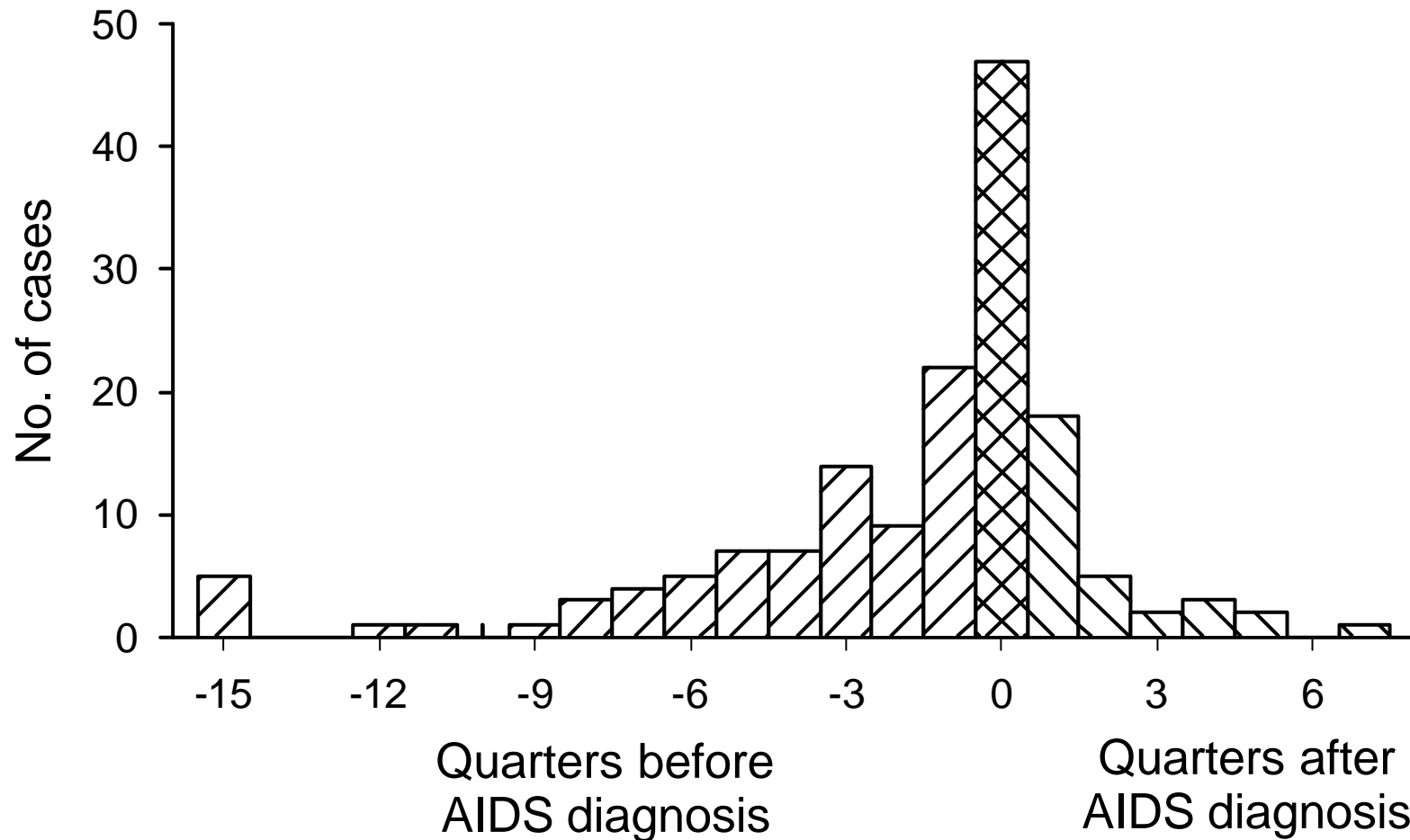
Incidence of Tuberculosis During Follow-up in the Placebo Groups of Preventive Chemotherapy and BCG Trials



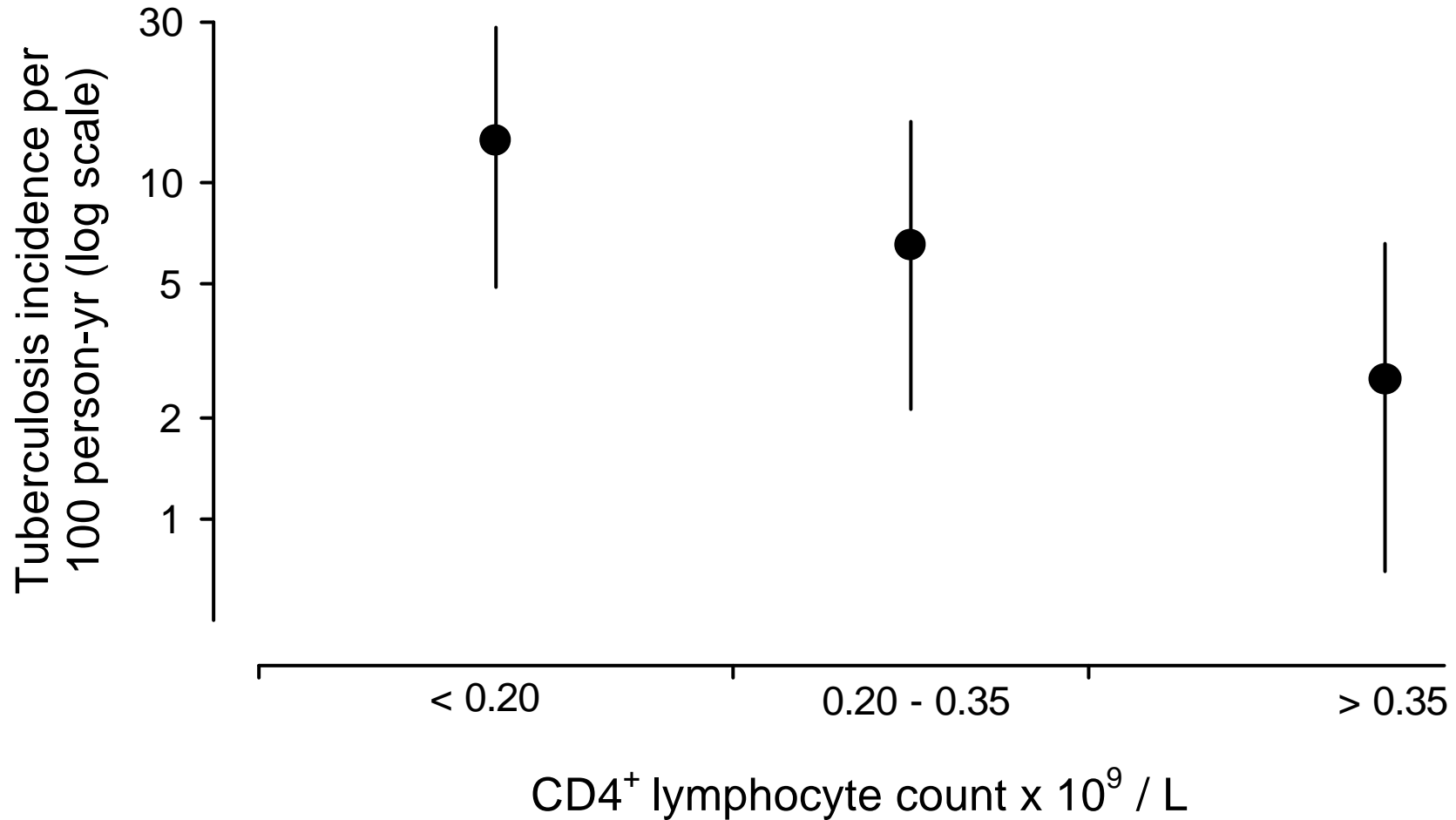
Ferebee SH. Adv Tuberc Res 1969;17:28-106

D'Arcy Hart P, et al. Br Med J 1977;2:293-5

Interval Between Report of Tuberculosis and Diagnosis of AIDS, Florida, United States, 1981 - 1986

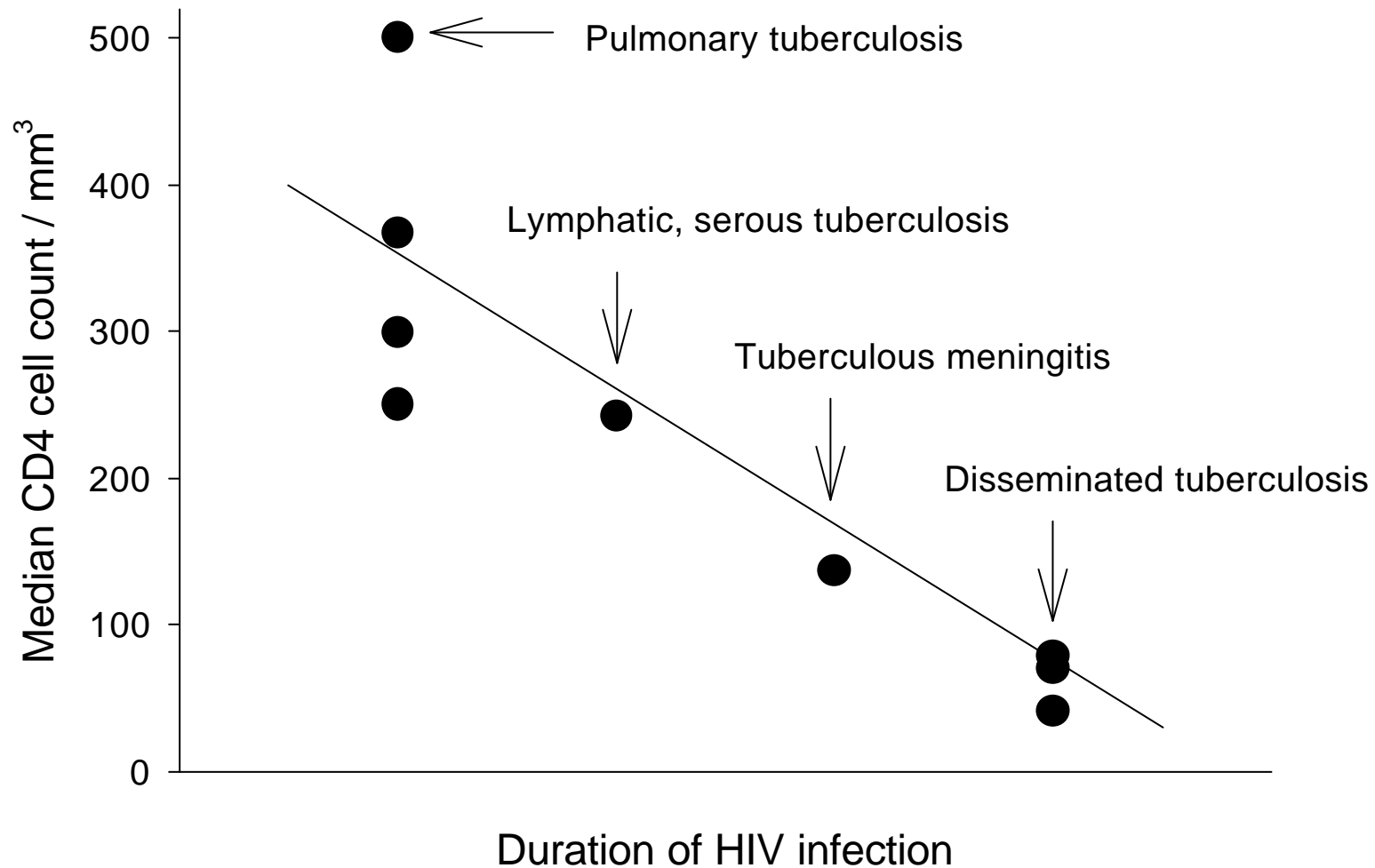


Risk of Tuberculosis Among HIV Infected, Tuberculin-Positive Persons, by CD4⁺ Lymphocyte Count



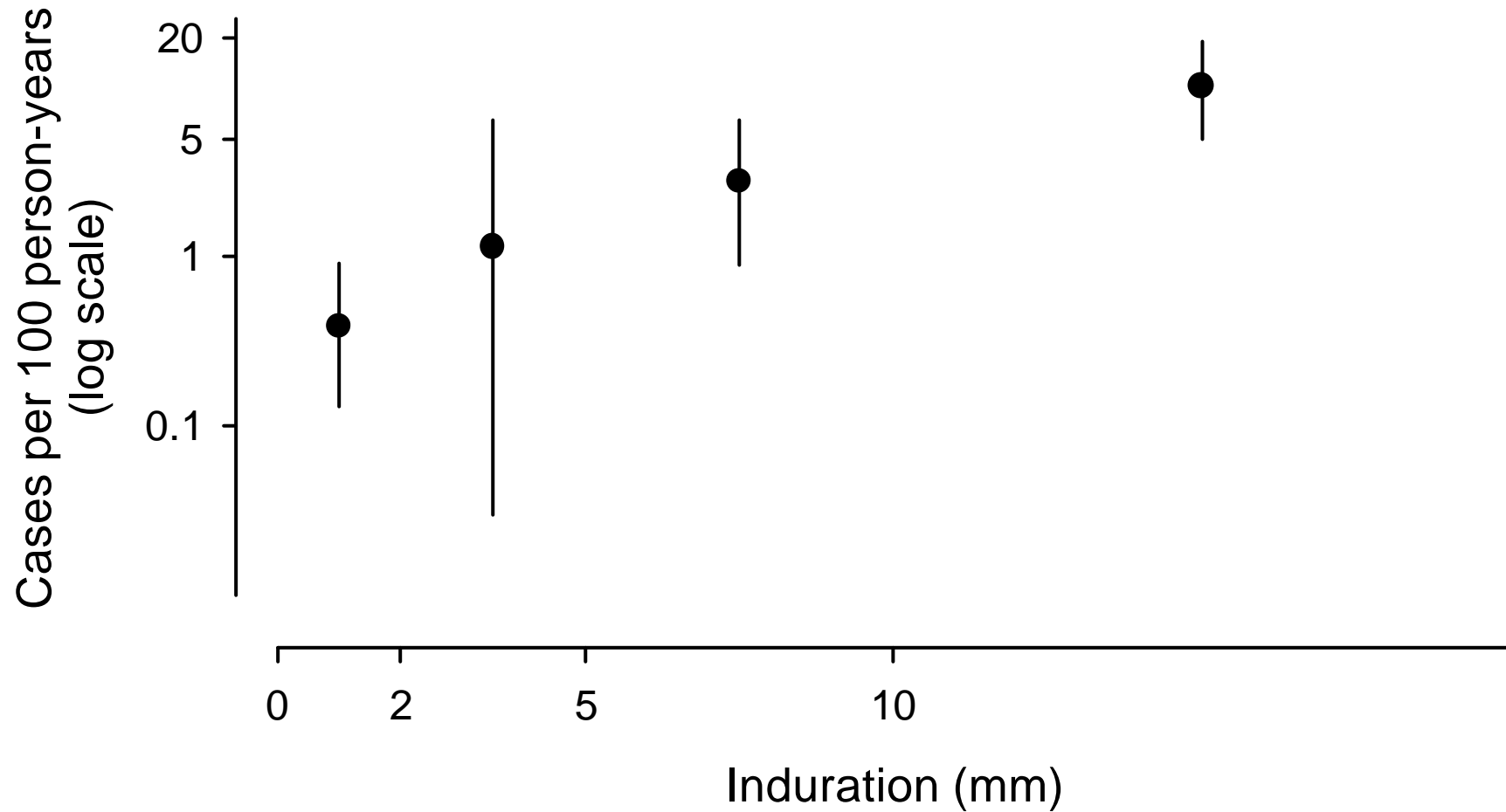
Antonucci G, et al. J Am Med Assoc 1995;274:143-8

Correlation Between Extent of HIV-Induced Immuno-Suppression and Clinical Manifestation of Tuberculosis



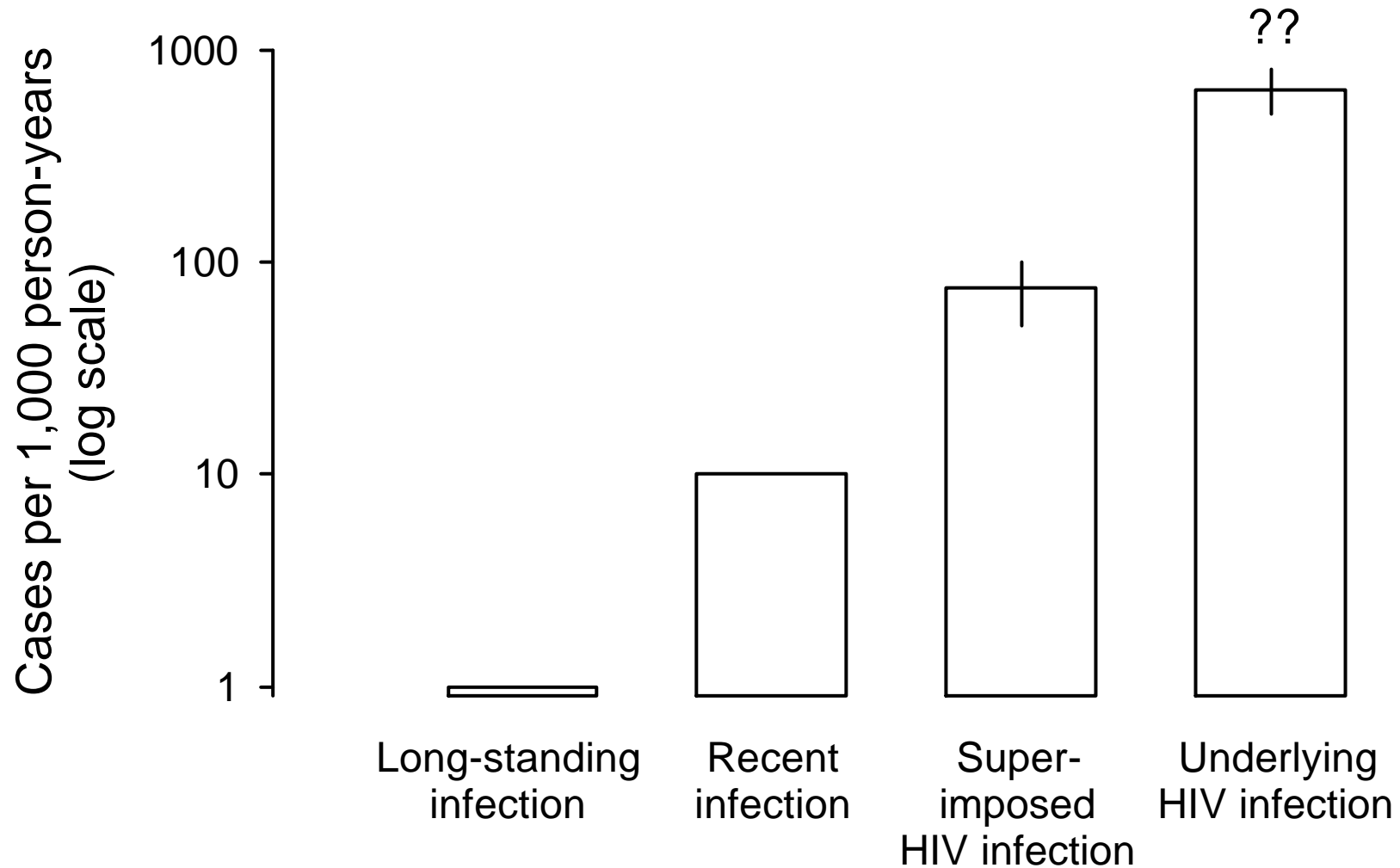
De Cock KM, et al. J Am Med Assoc 1992;268:1581-7

Tuberculosis Risk Among HIV Infected Persons, by Size of Tuberculin Skin Test Result, Italy

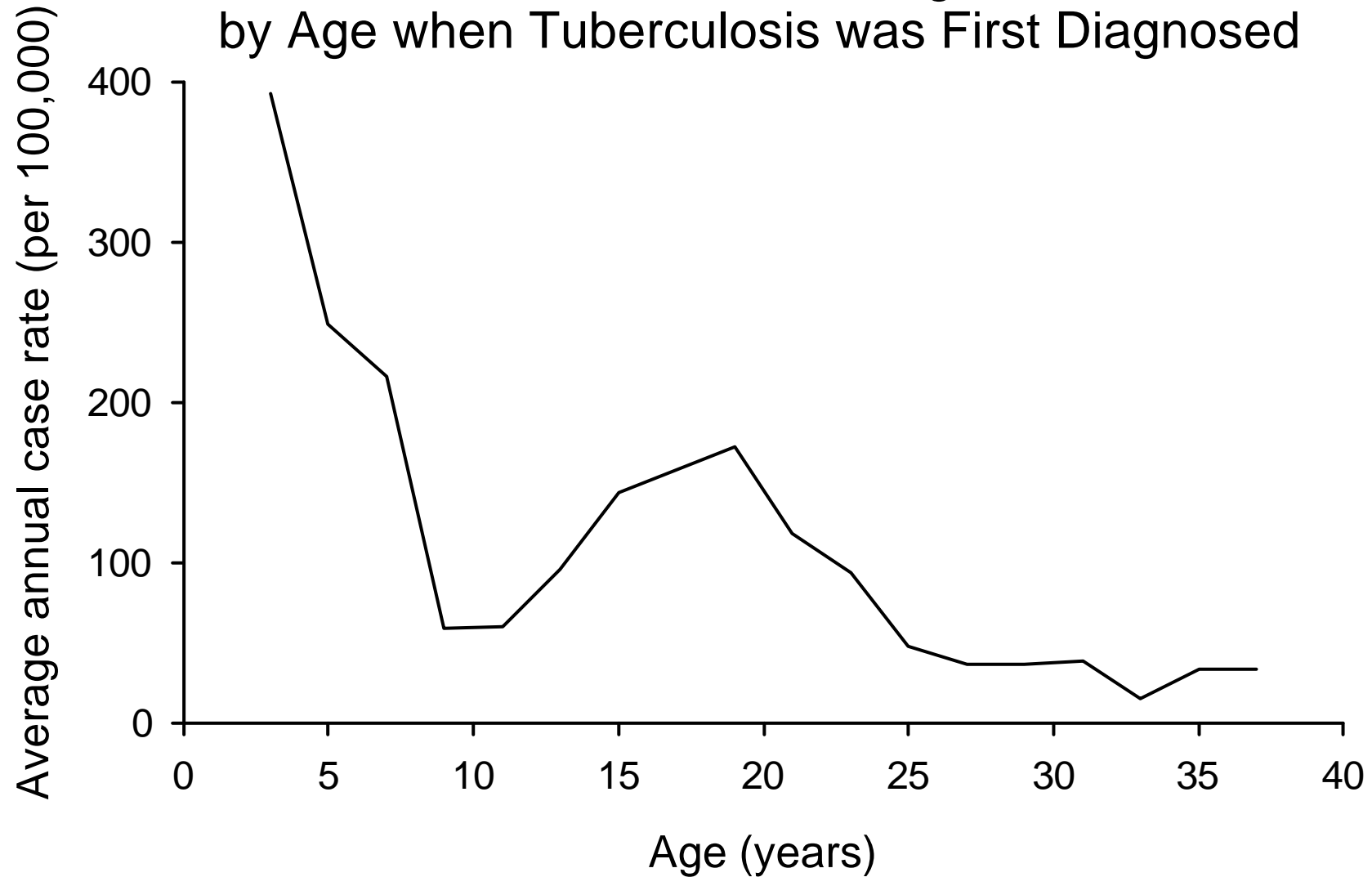


Girardi E, et al. Arch Intern Med 1997;157:797-800

Example of Risk Differences in Individuals Following Infection with *M. tuberculosis*

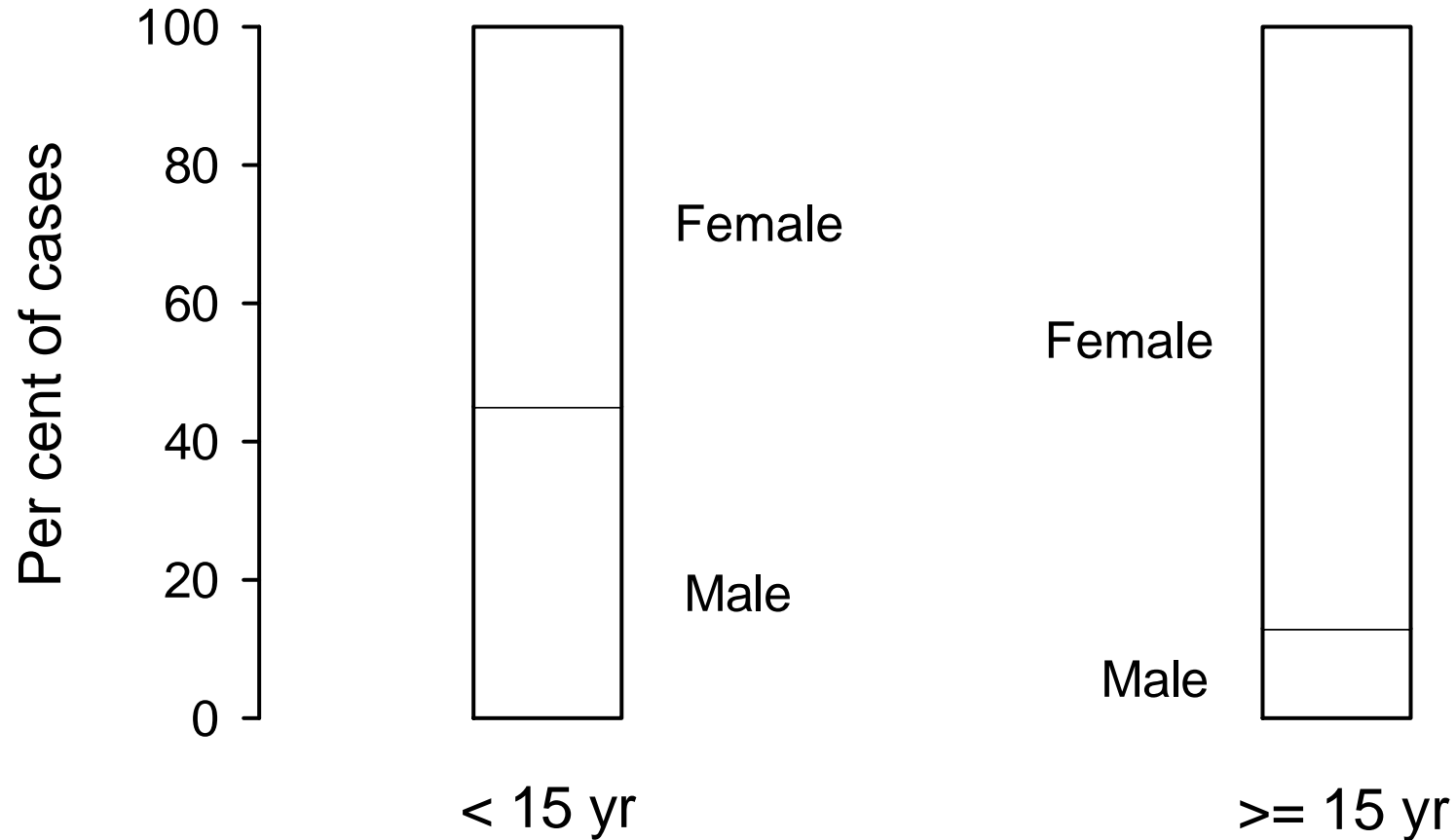


Incidence of Tuberculosis Among Initial Reactors, by Age when Tuberculosis was First Diagnosed

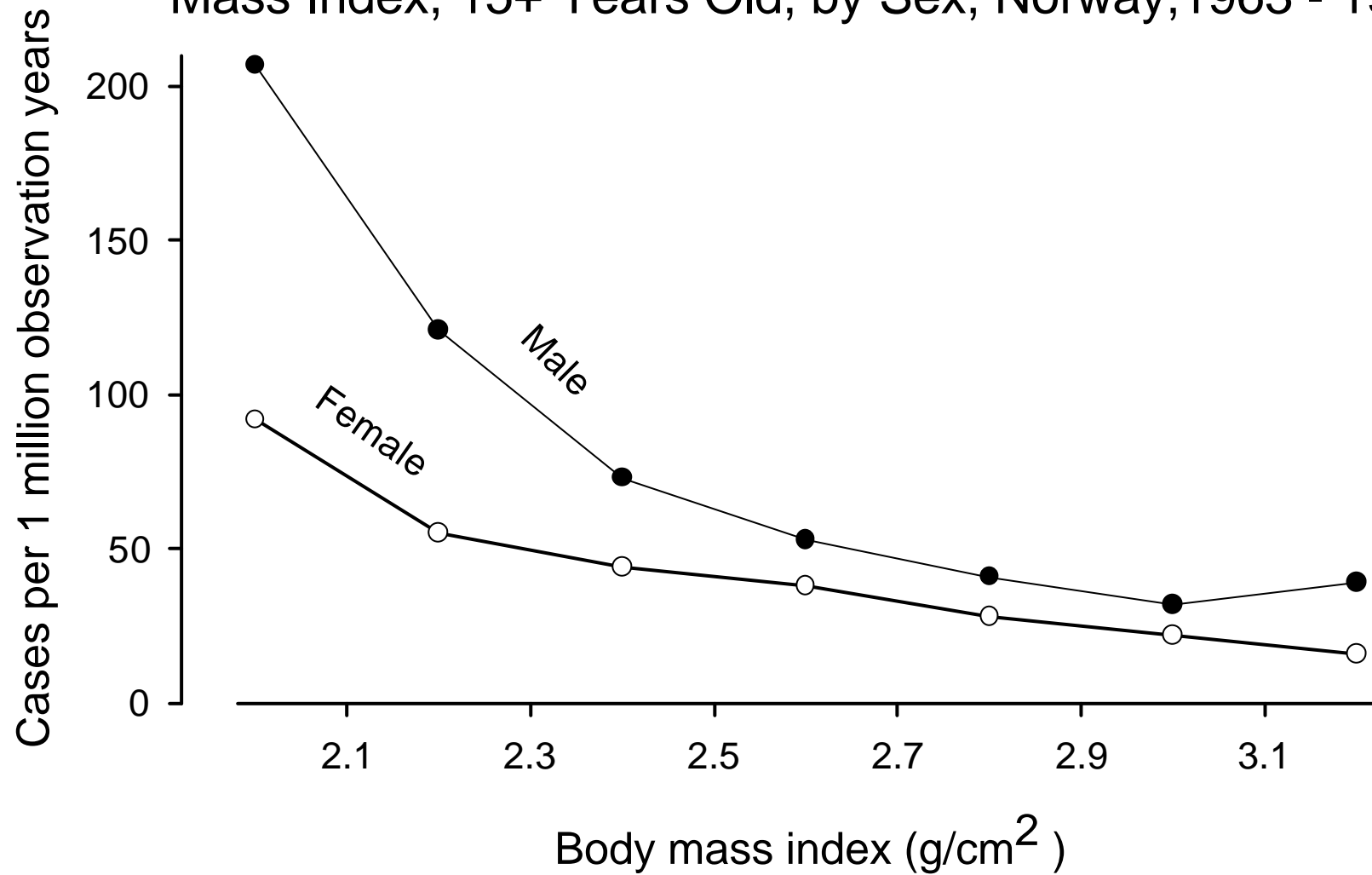


Comstock GW, et al. Am J Epidemiol 1974;99:131-8

Tuberculosis of Peripheral Lymph Nodes by Age and Sex, Cambodian Refugees, Thailand 1981 - 1984

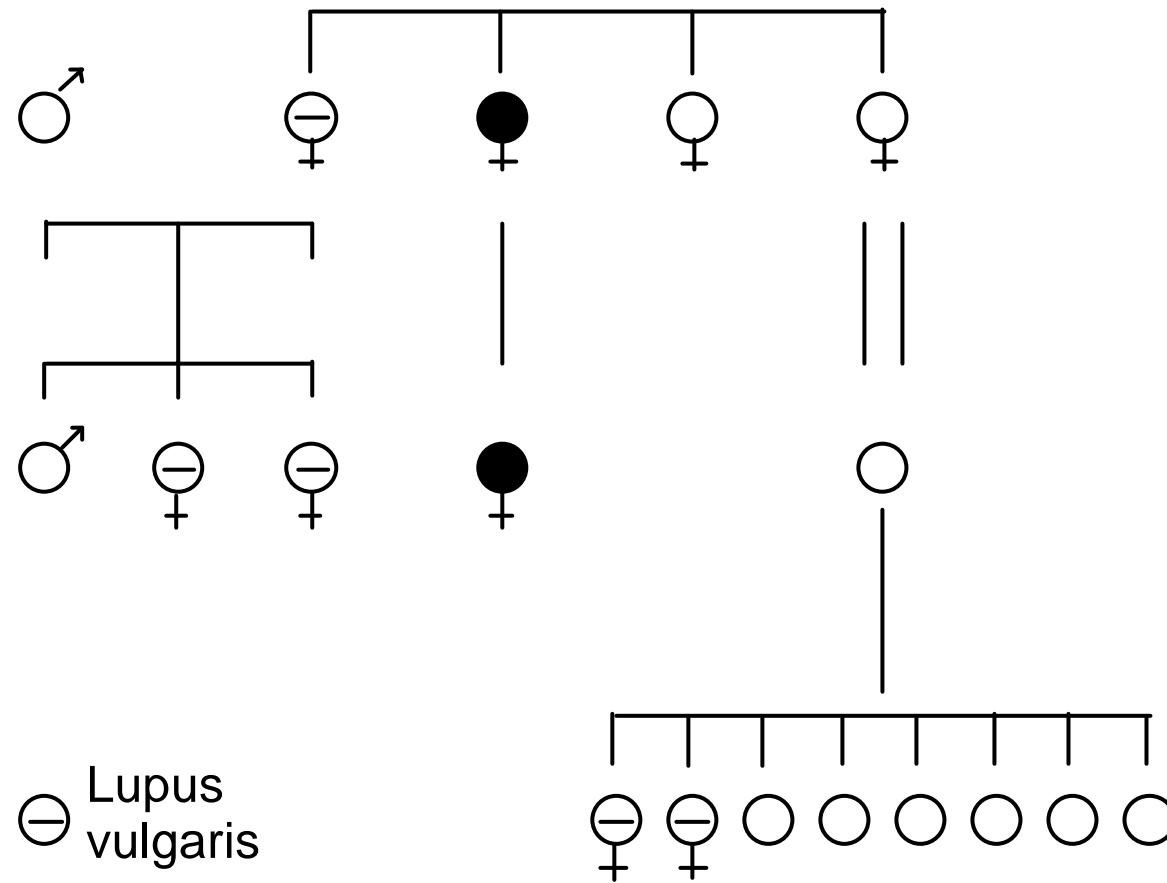


Incidence of Infectious Tuberculosis by (Age-Adjusted) Body Mass Index, 15+ Years Old, by Sex, Norway, 1963 - 1975



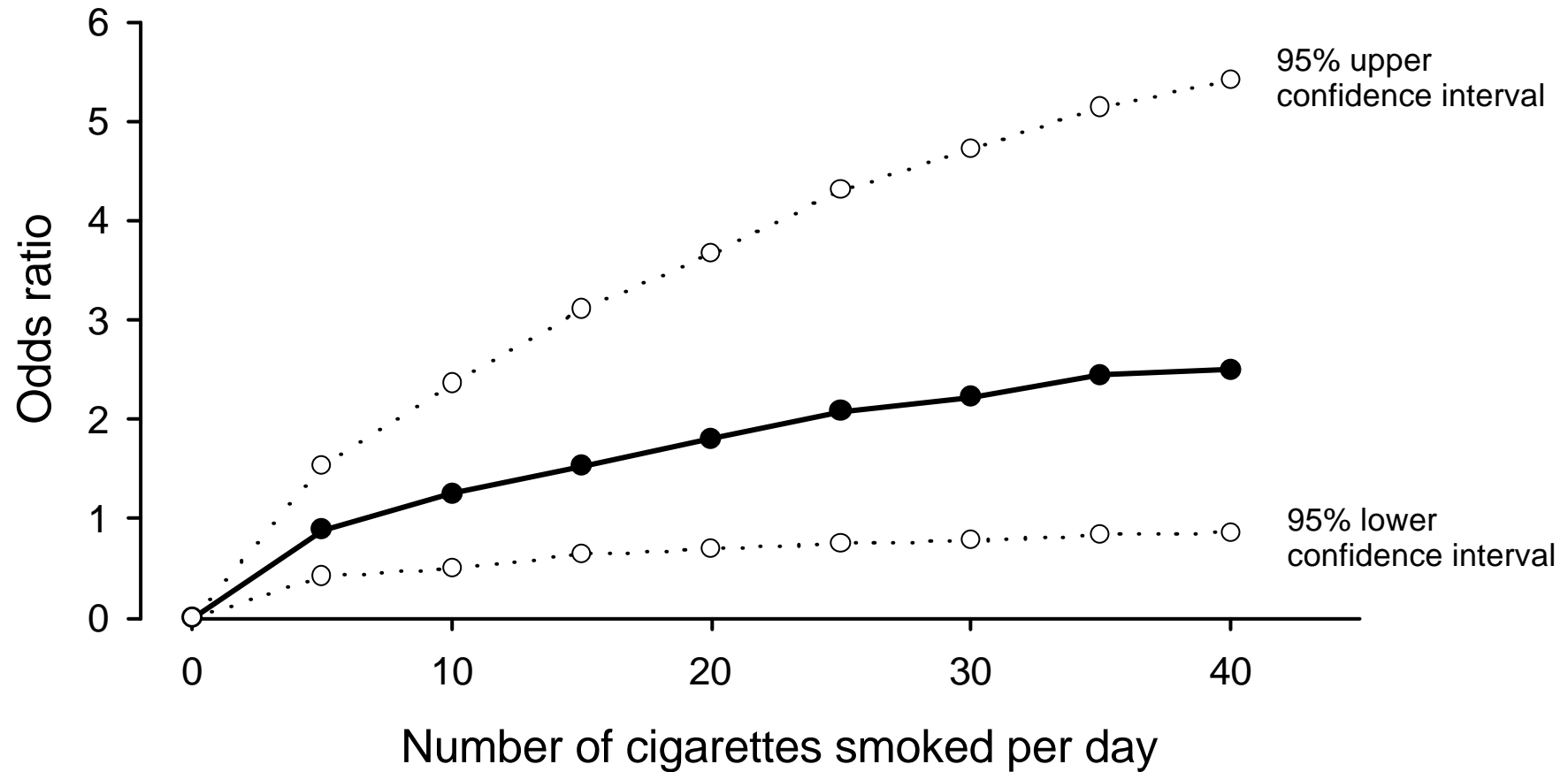
Tverdal A. Eur J Respir Dis 1986;69:355-62

Lupus vulgaris in a German Family, 1920ies



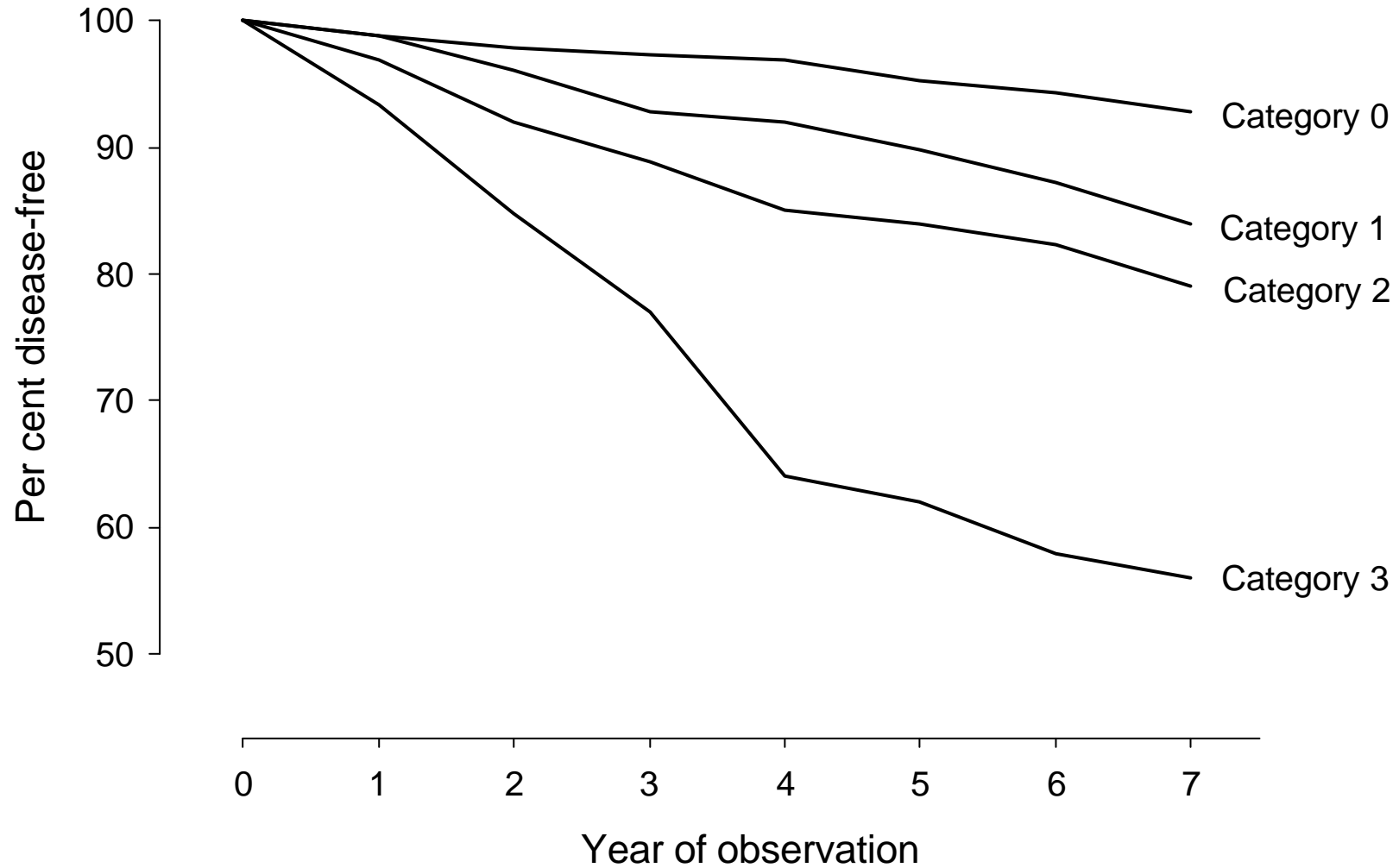
Berghaus W. Zeitschrift Hyg 1936;117:757-67

Relative Odds for Tuberculosis Among Male Smokers, Aged 30 Years and Older, Great Britain

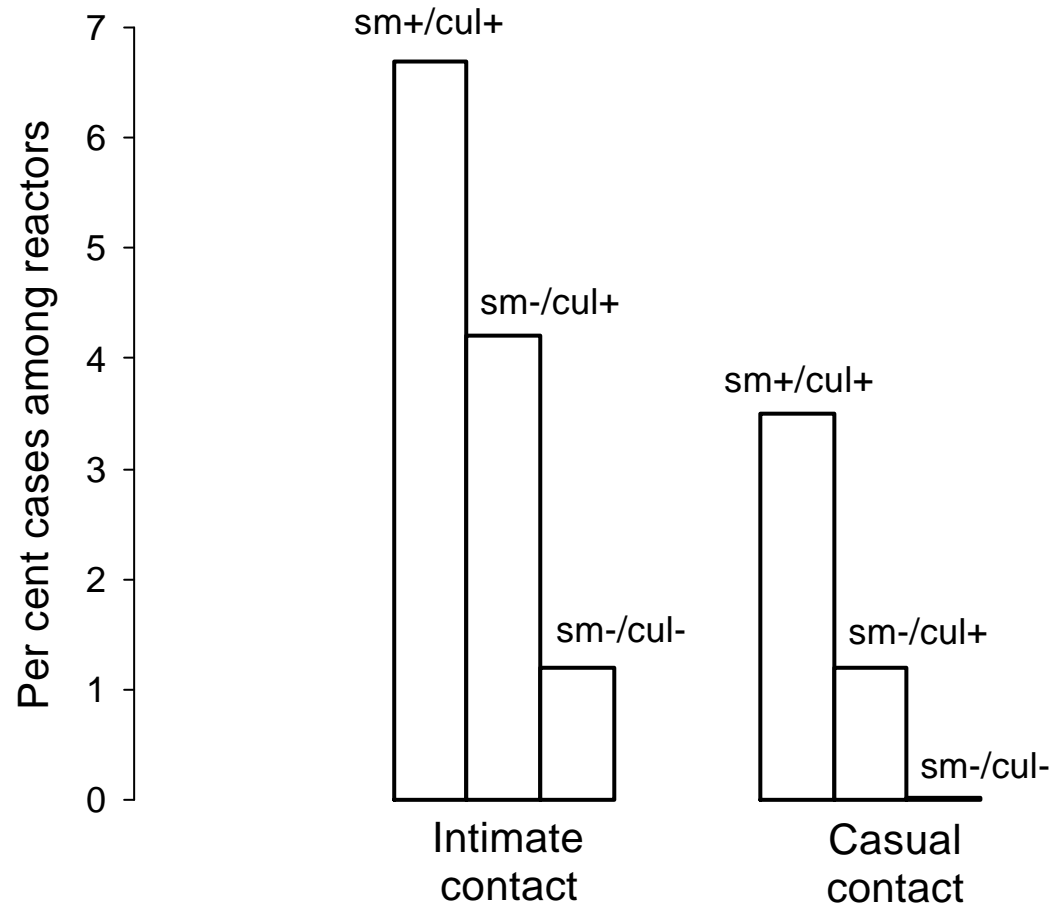


Edwards JH. Br J Prev Soc Med 1957;11:10-11

Cumulative Percentage Tuberculosis-Free by Category of Silicosis Among Gold Miners, South Africa



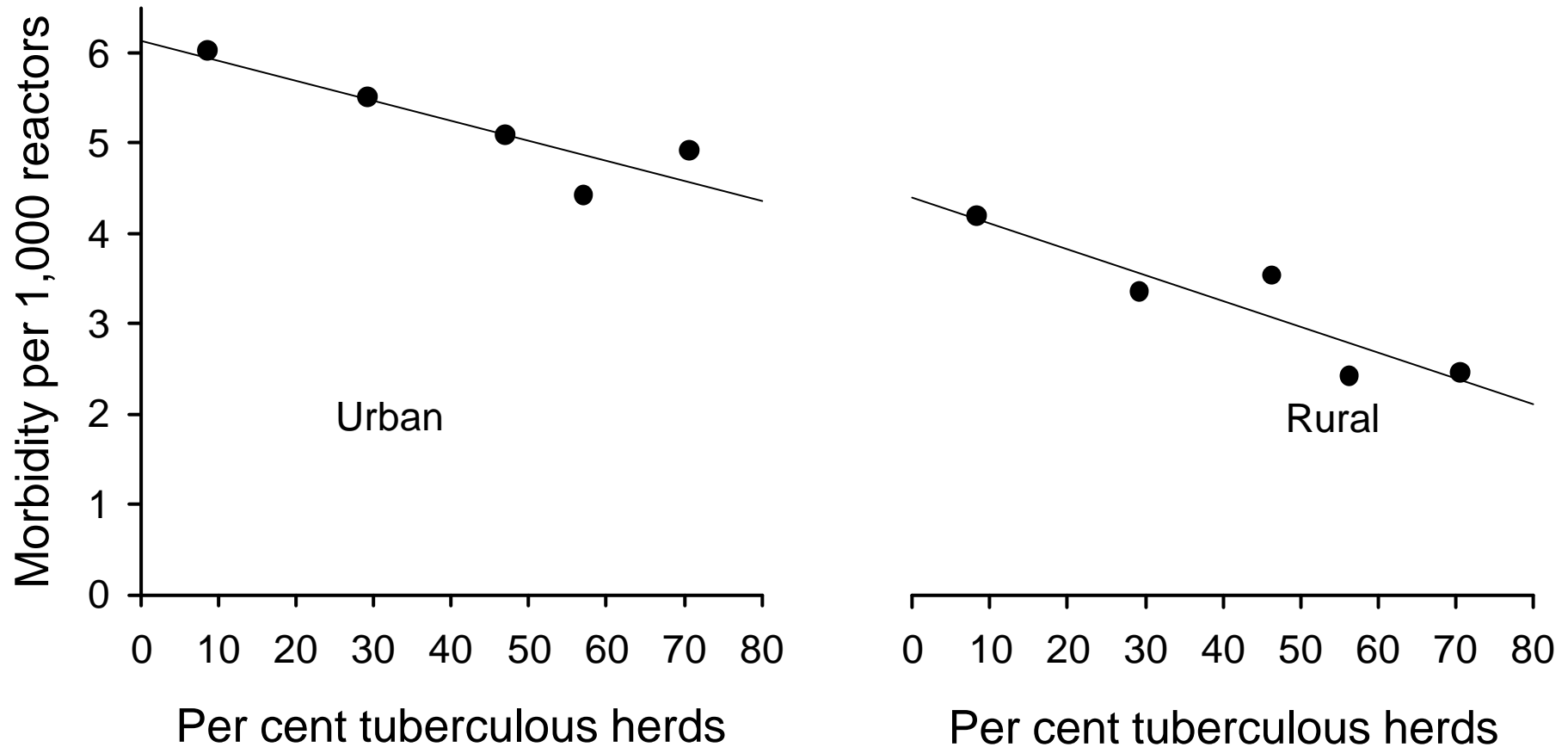
Percentage of Secondary Cases Among Tuberculin-Positive Contacts, by Type of Source Case, Canada, 1966 - 1971



Grzybowski S, et al. *Bull Int Union Tuberc* 1975;50:90-106

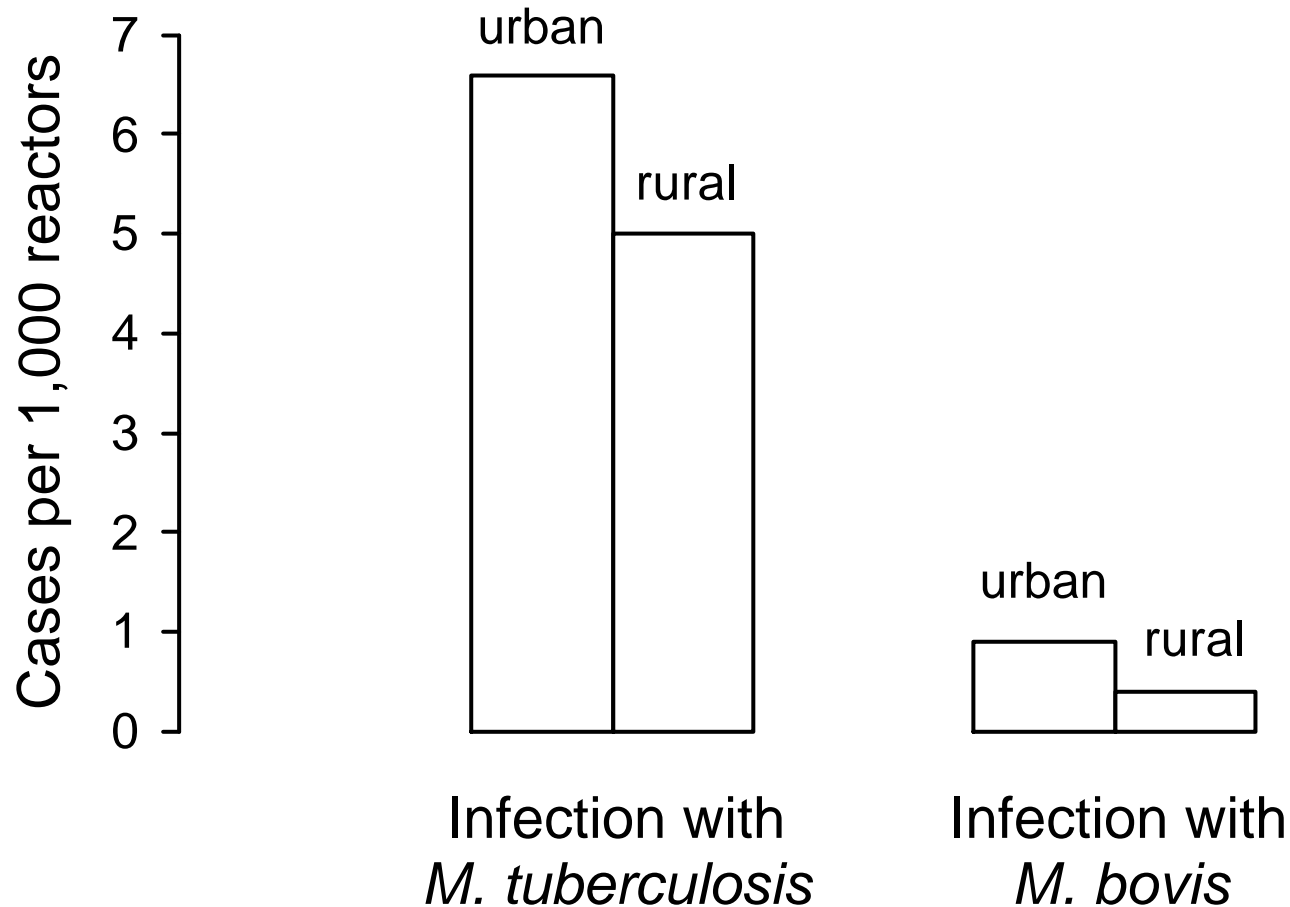
Rieder HL, et al. *Epidemiol Rev* 1989;11:79-98

Correlation Between Tuberculous Herds (1937 - 1939) and Human Morbidity per 1,000 Skin Test Reactors (1950 - 1952), Denmark



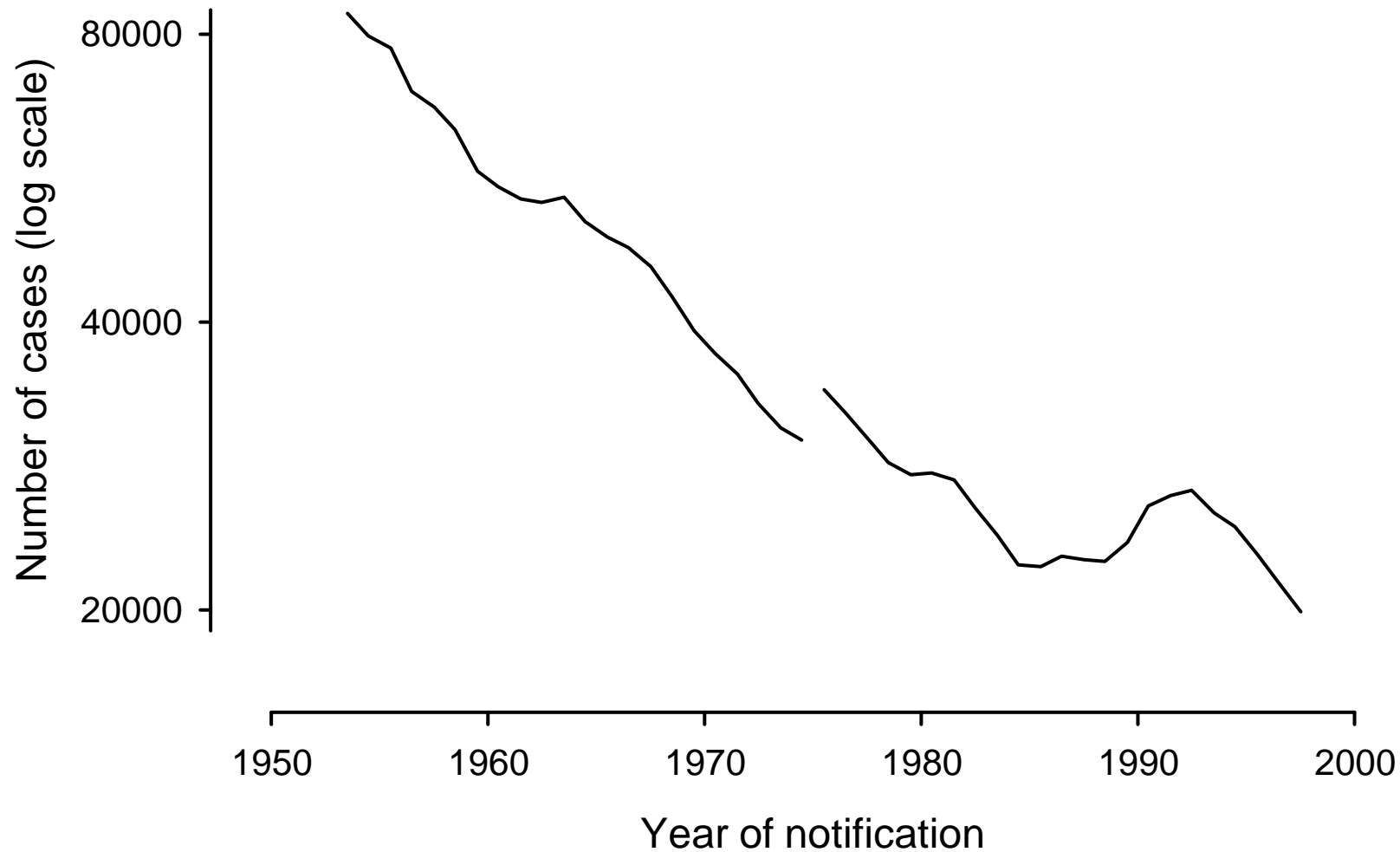
Magnus K. *Bull World Health Organ* 1966;35:483-508

Estimated Morbidity Rates Following Infection with *M. bovis* or *M. tuberculosis*, Denmark



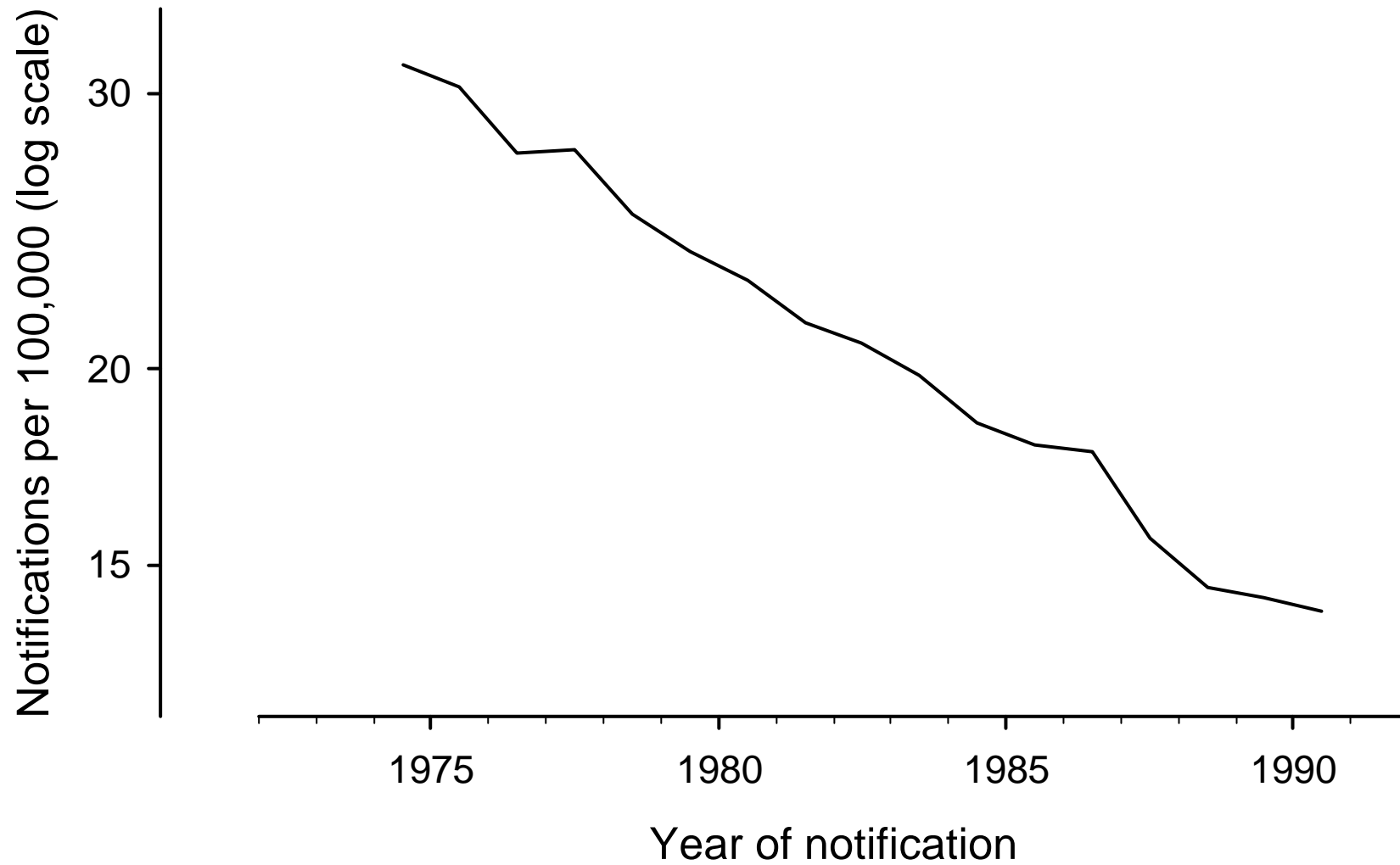
Magnus K. Bull World Health Organ 1966;35:483-508

Reported Tuberculosis Cases in the United States, 1953 - 1997



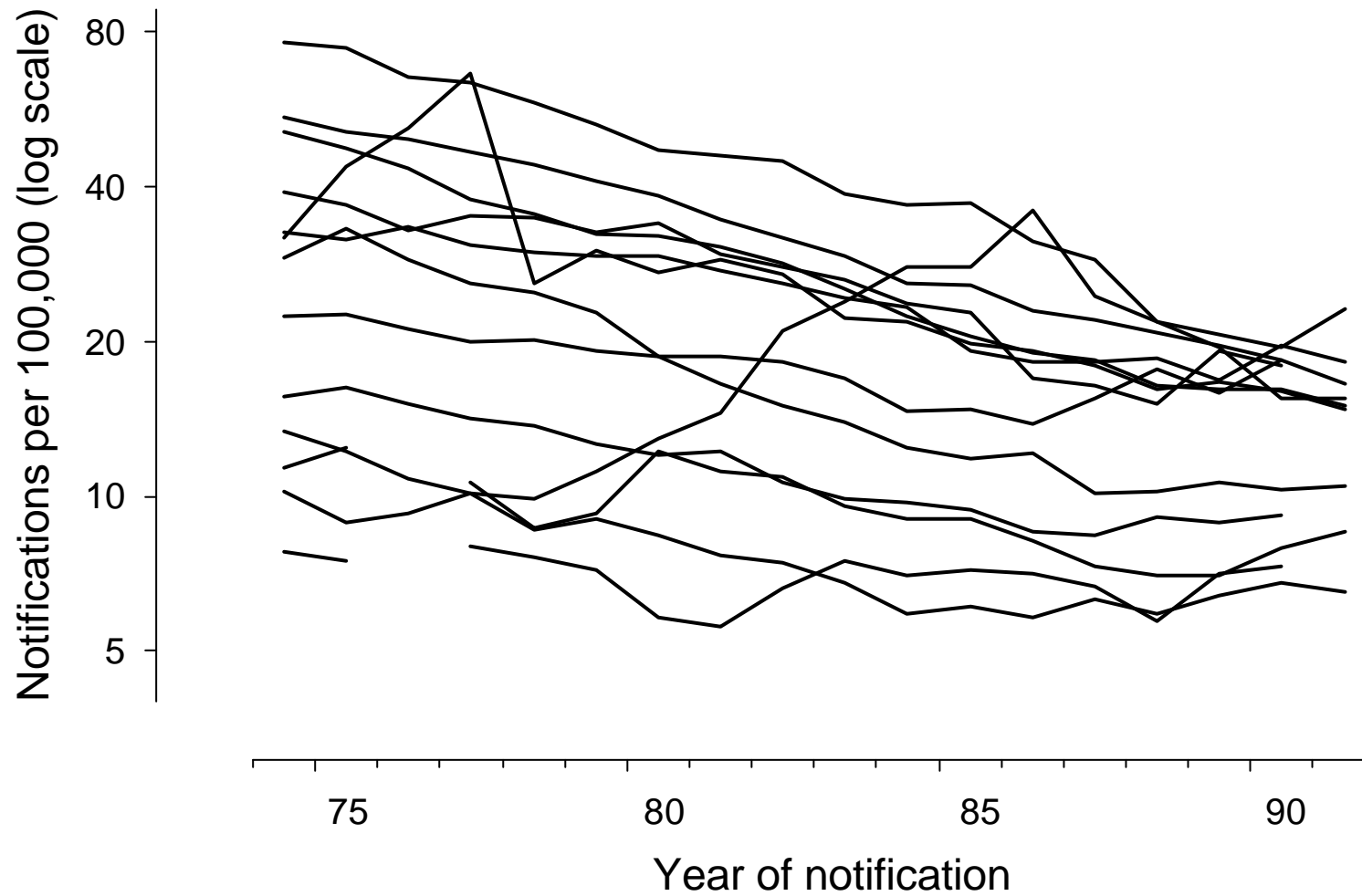
*Centers for Disease Control and Prevention. Reported Tuberculosis in the United States 1996:1997:5
Centers for Disease Control and Prevention. MMWR 1998;47:253-7*

Reported Tuberculosis Cases, Western Europe, 1974 - 1990



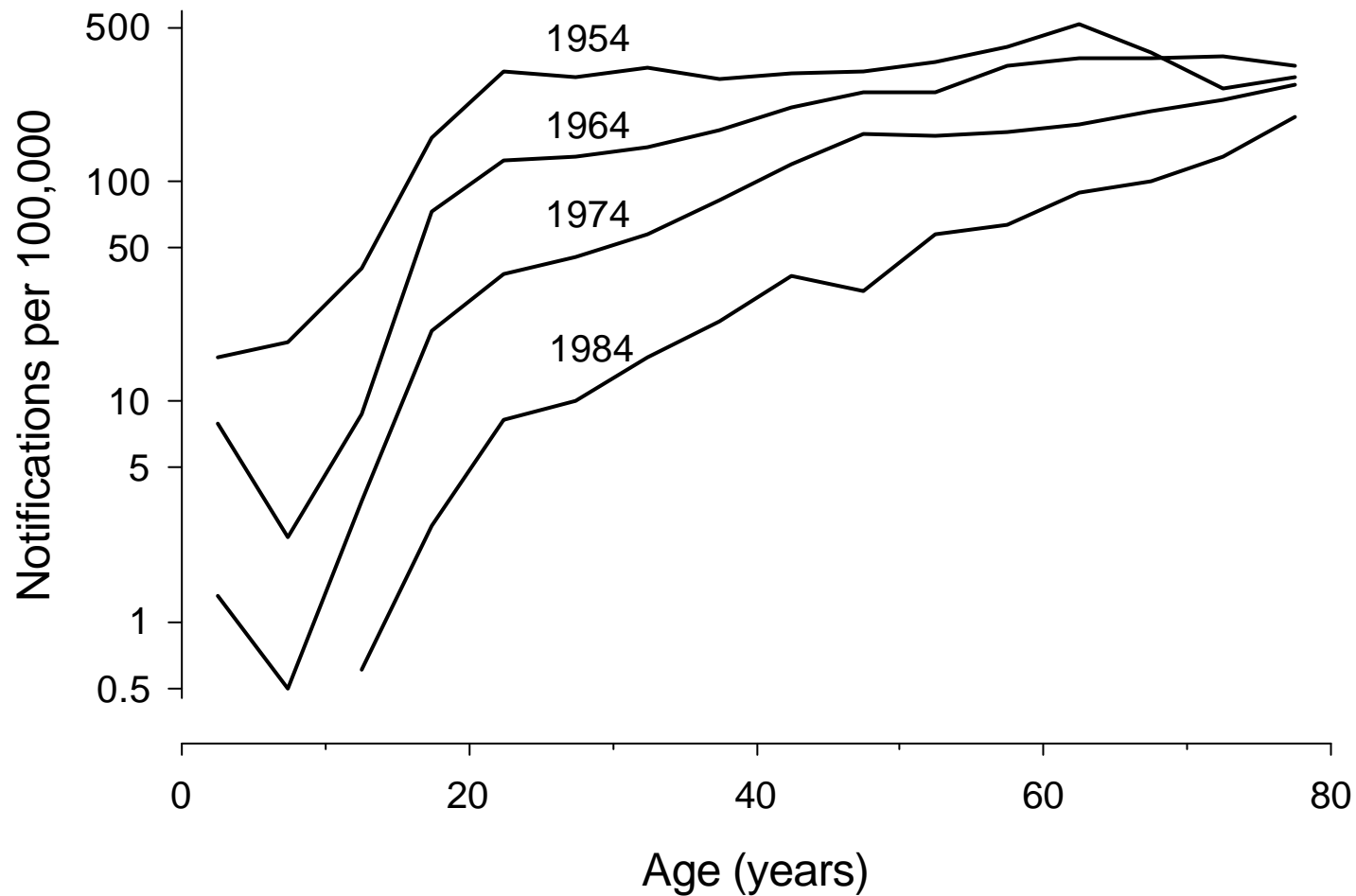
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Reported Tuberculosis Cases, Western Europe, 1974 - 1990

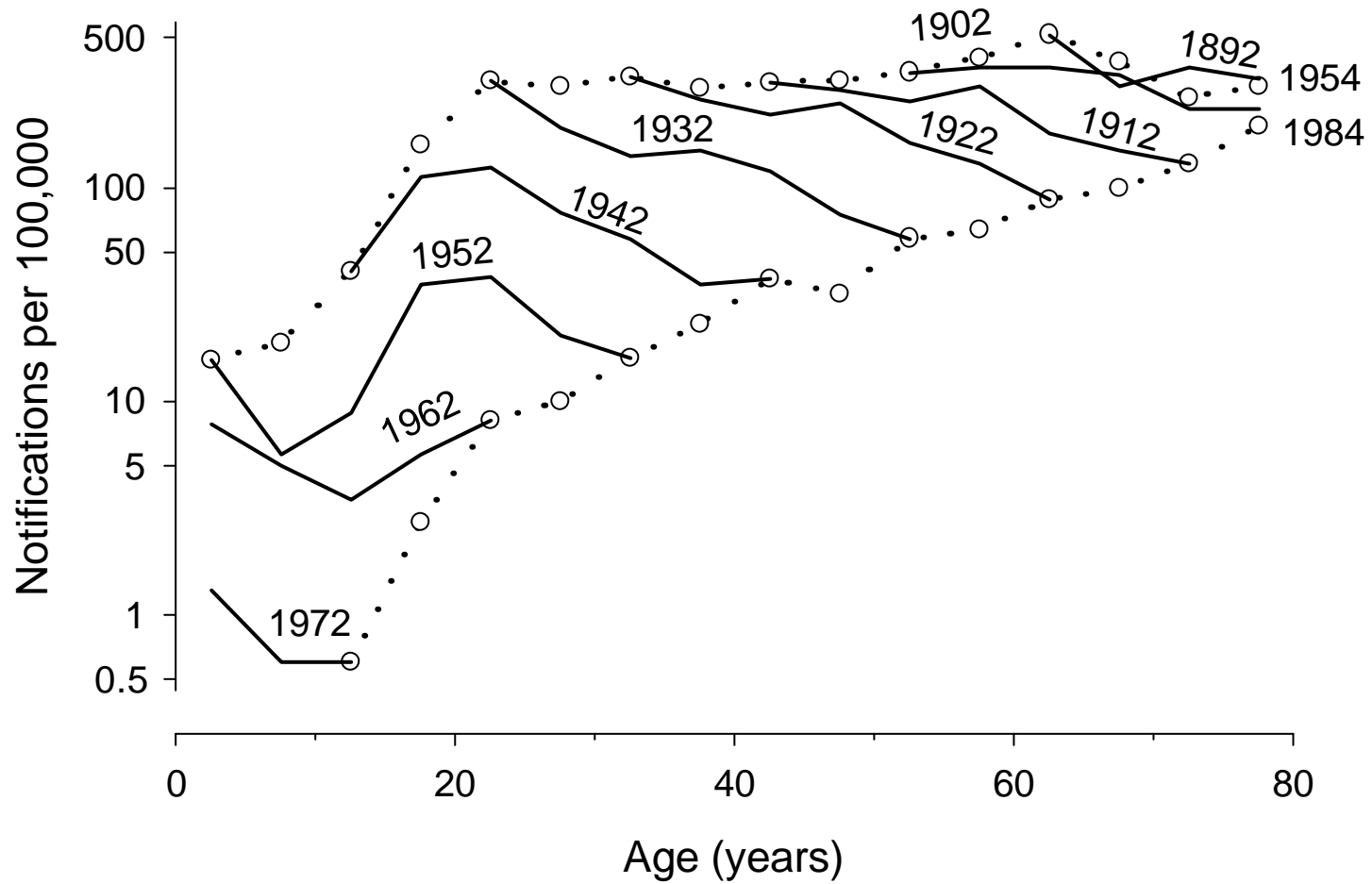


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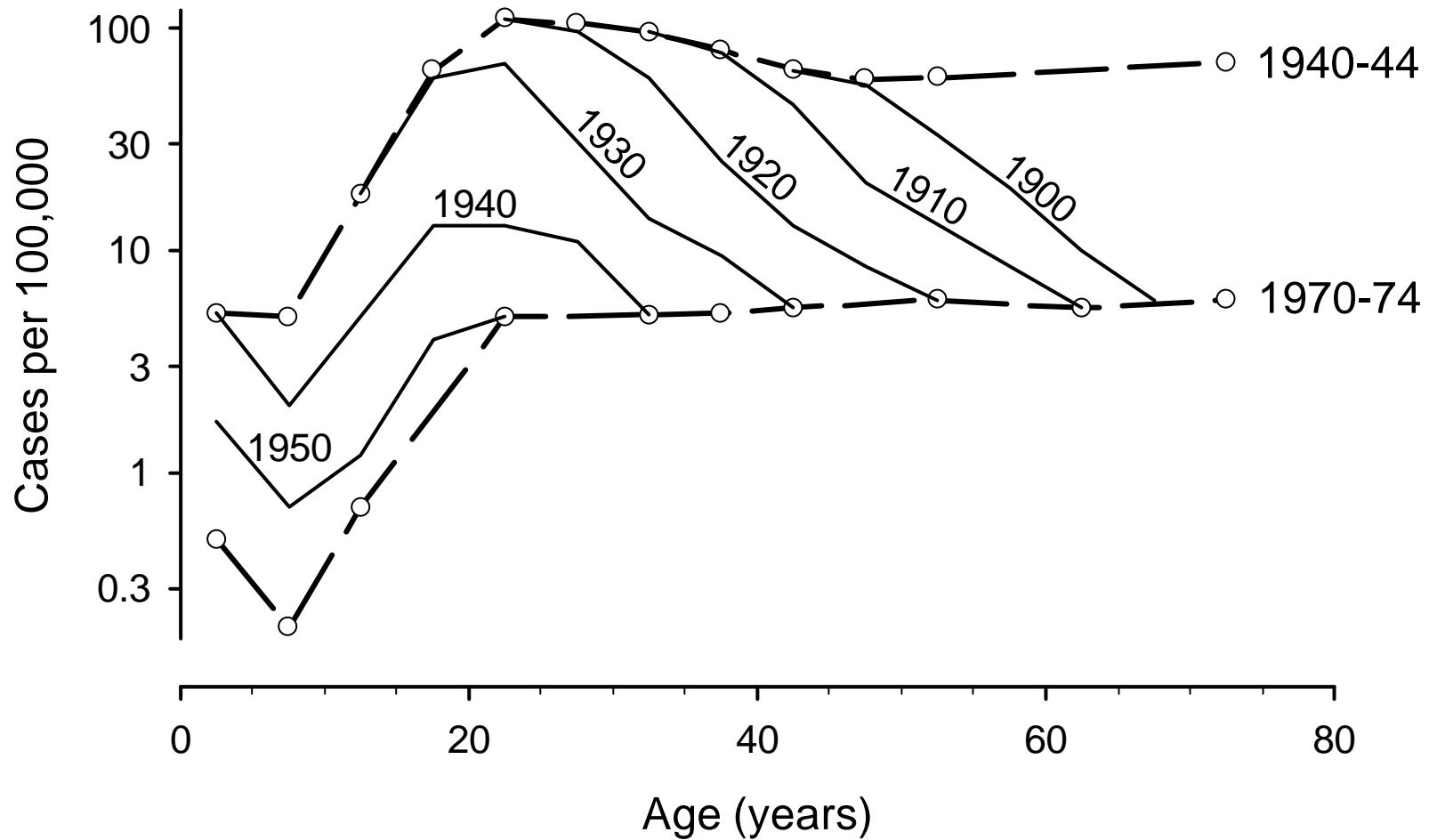
Tuberculosis Notification Rates Among Males, Cross-Sectional Observations, Finland 1954 -1984



Tuberculosis Notification Rates Among Males, by Birth Cohort, Finland 1954 -1984

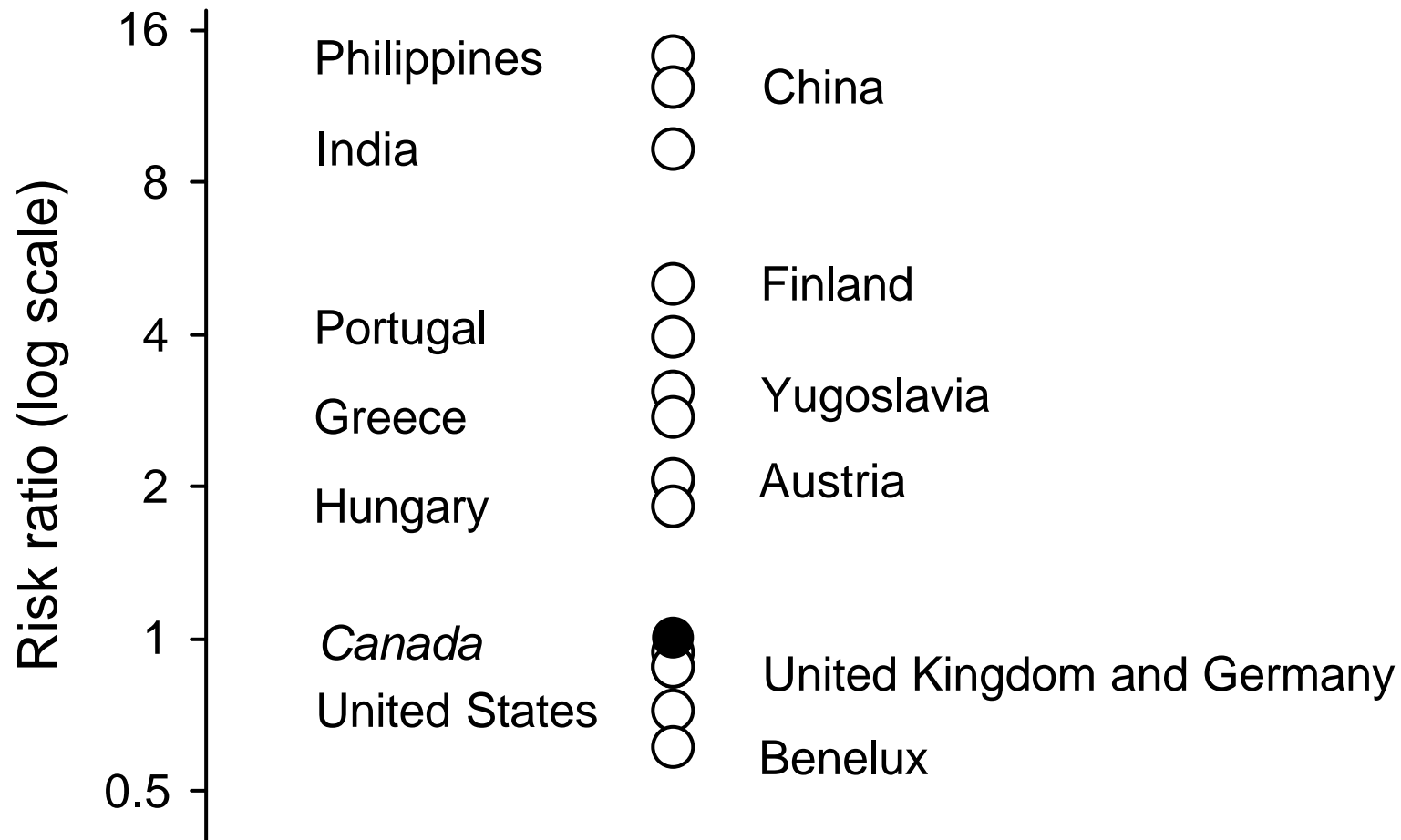


Average Annual Incidence of Tuberculosis Among Women, Cross-Sectionally and by Birth Cohort, Upstate New York



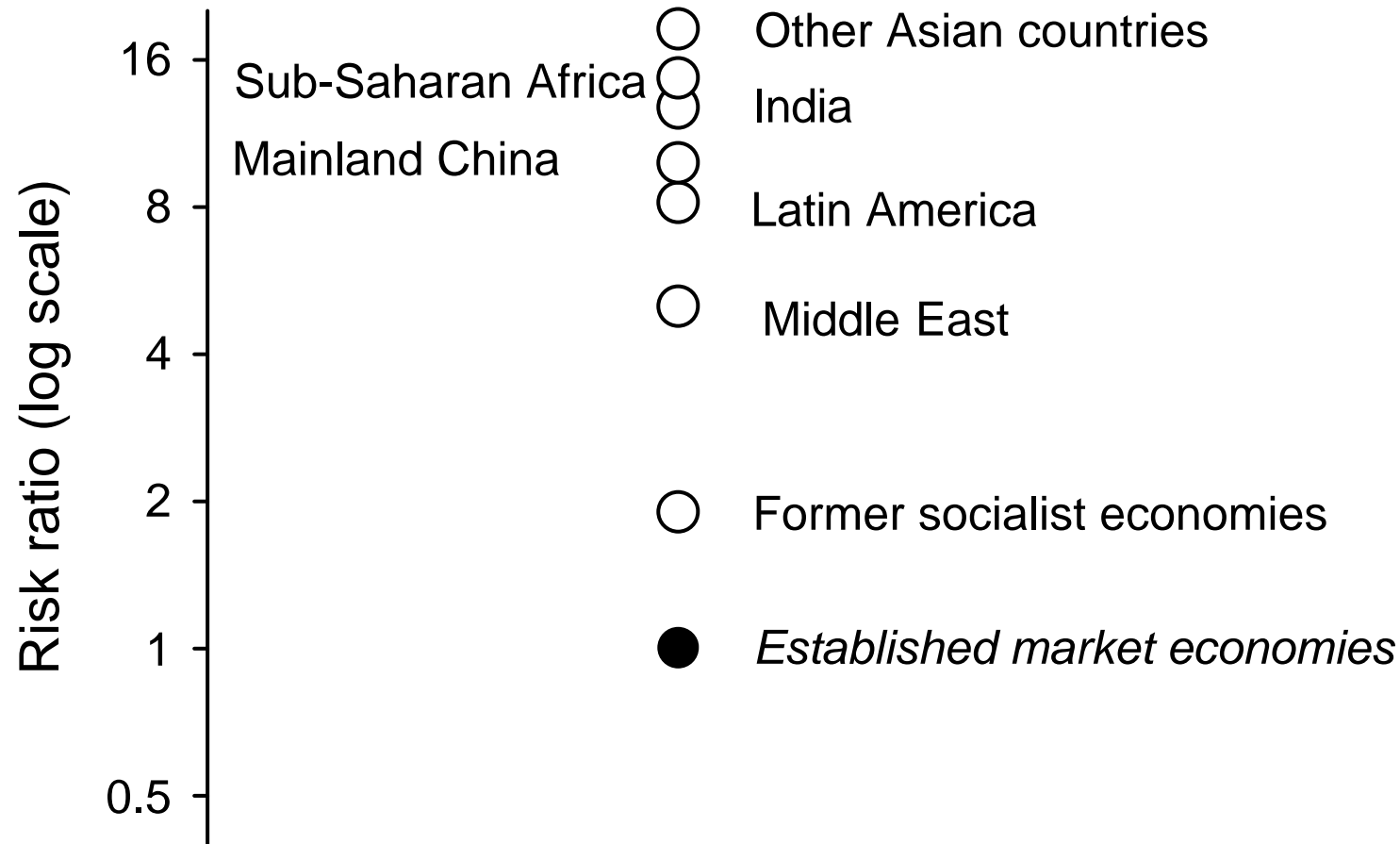
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Foreign Born-to-Canada Born Risk Ratios for Tuberculosis in Canada, 1970 - 1972



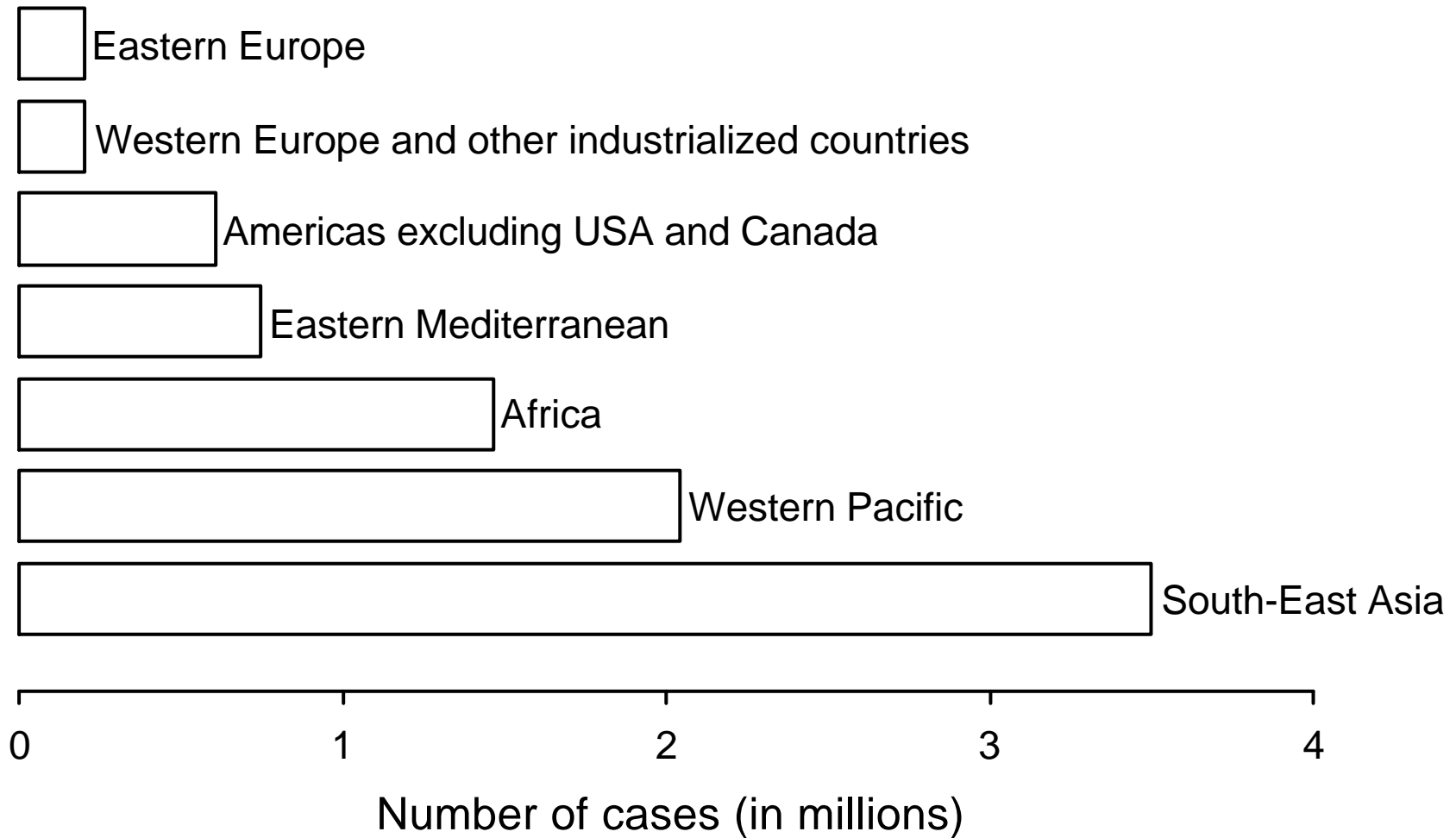
Enarson D, et al. Am Rev Respri Dis 1979;119:11-8

Age-Adjusted Rate Ratios for Tuberculosis among Foreign-Born Persons, United States, 1986 - 1993

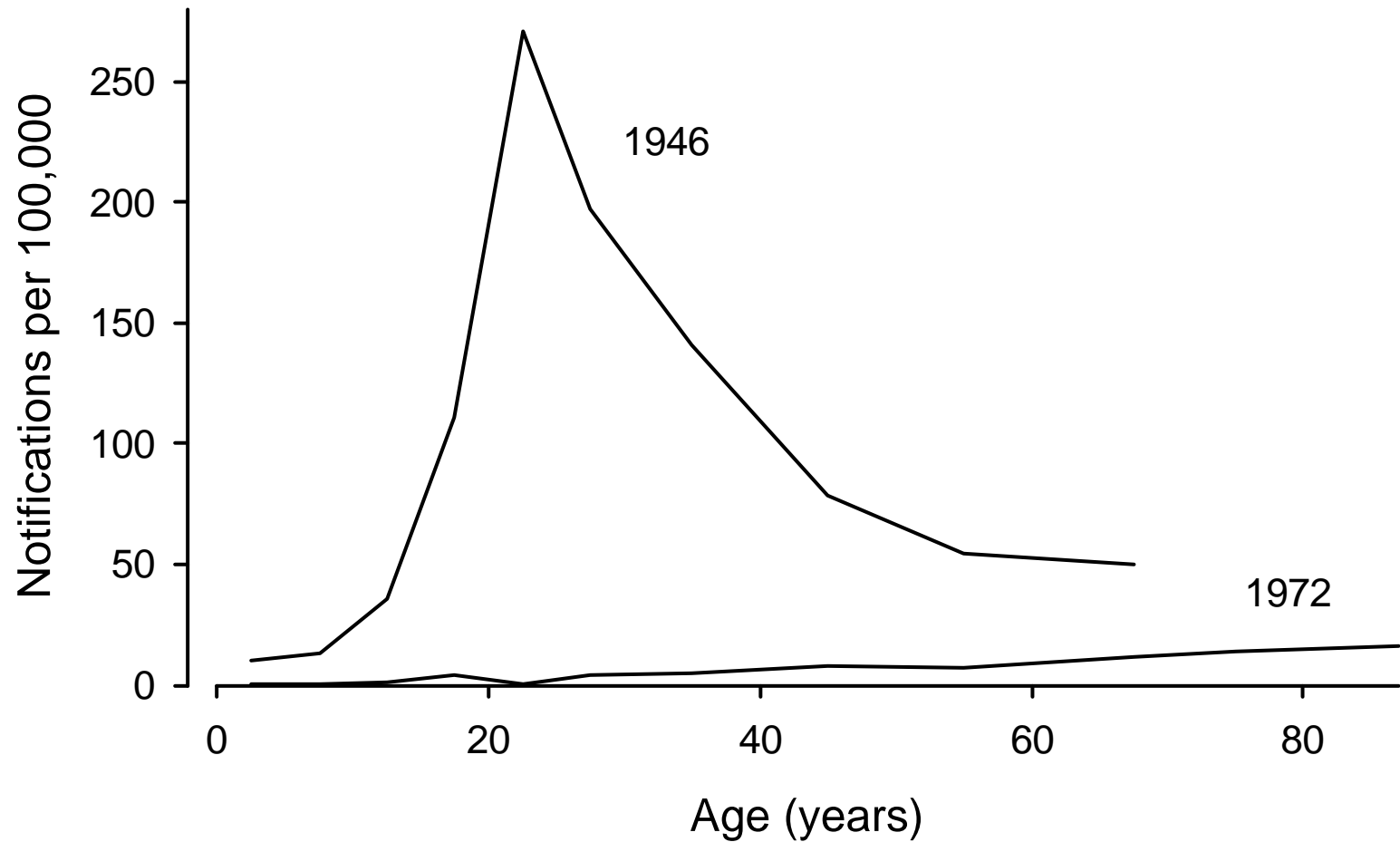


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Estimated Incidence of Tuberculosis in the World in 1995

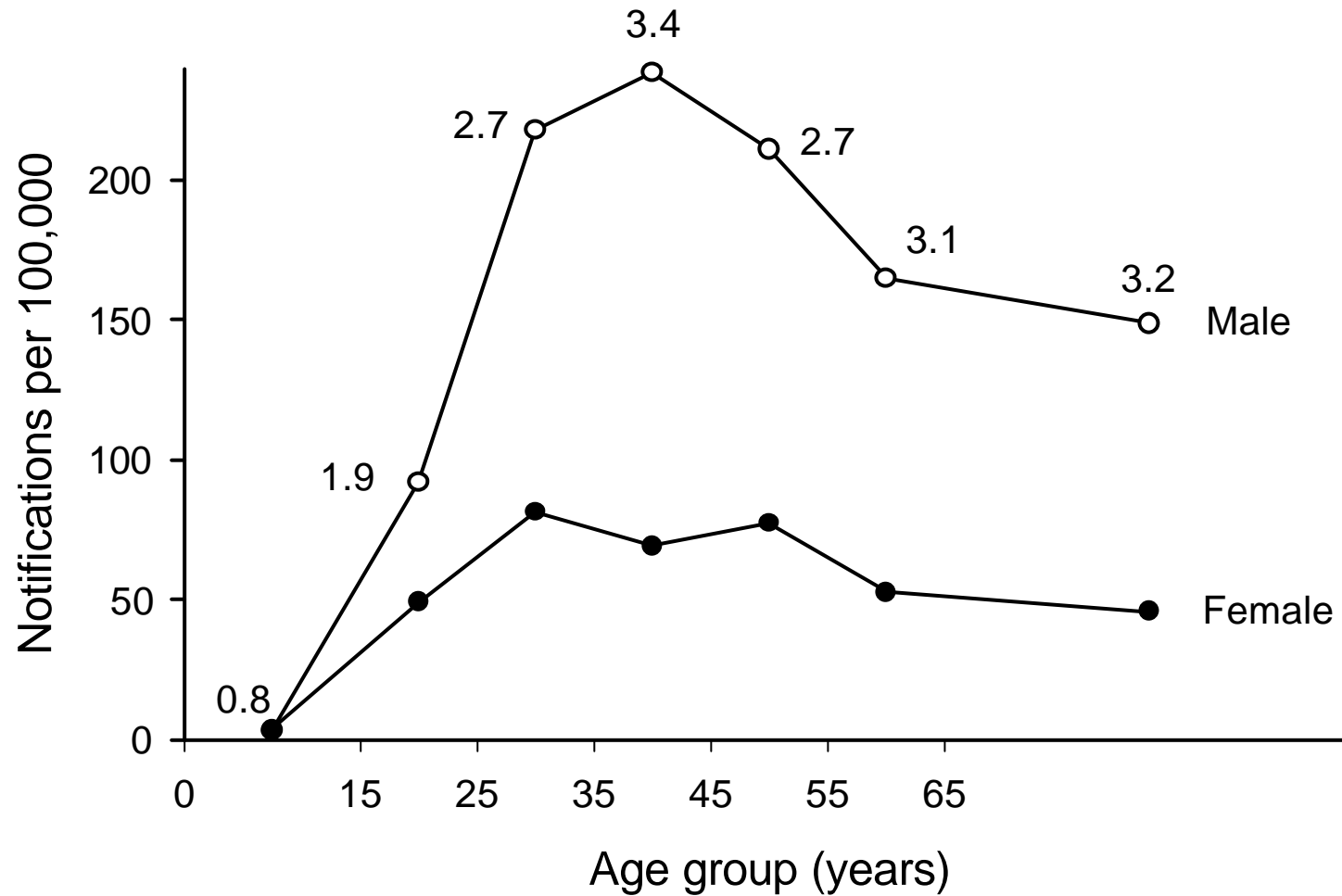


Age-Specific Notification Rates of Infectious Tuberculosis among Females, Norway, 1946 and 1972

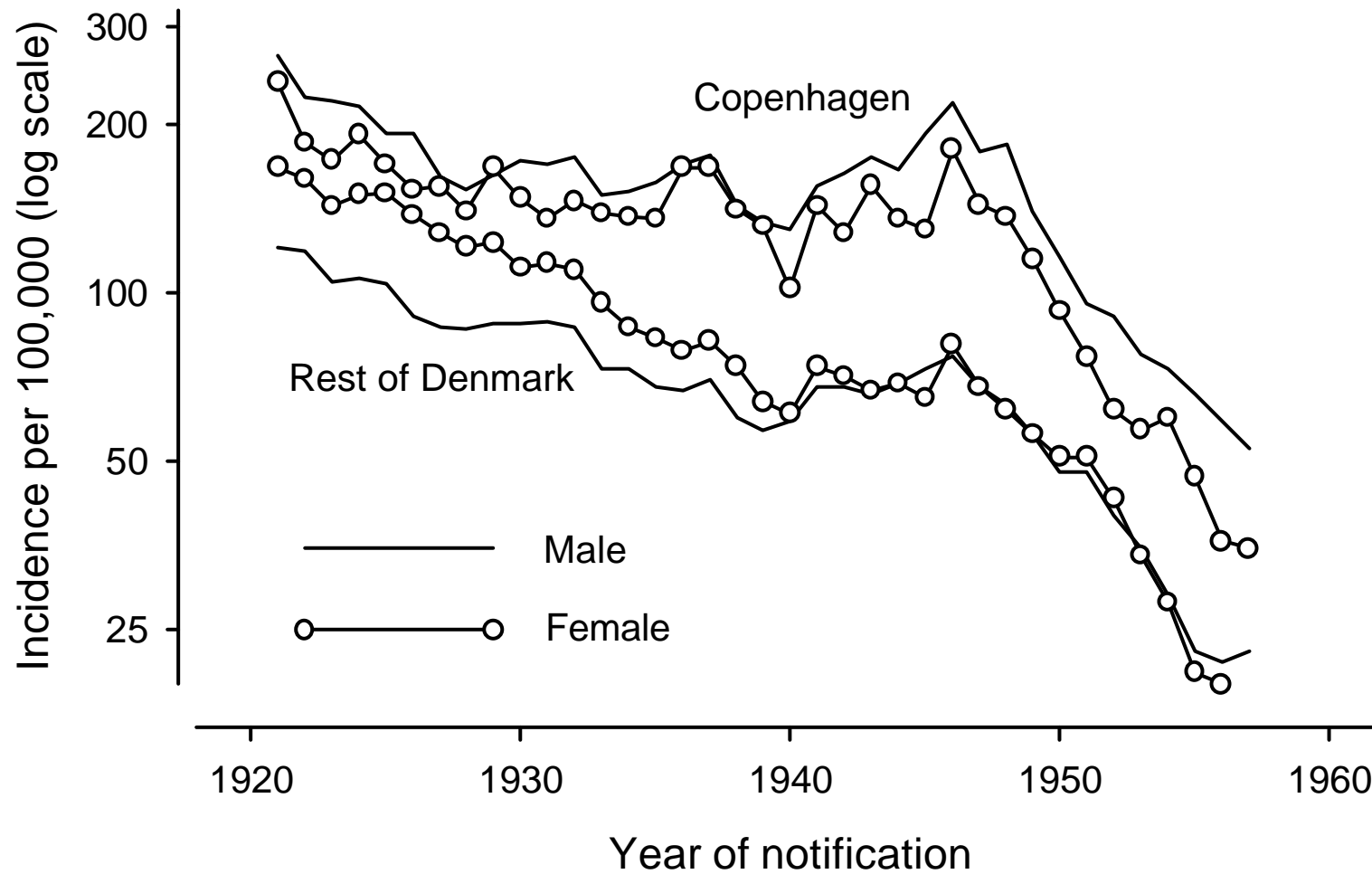


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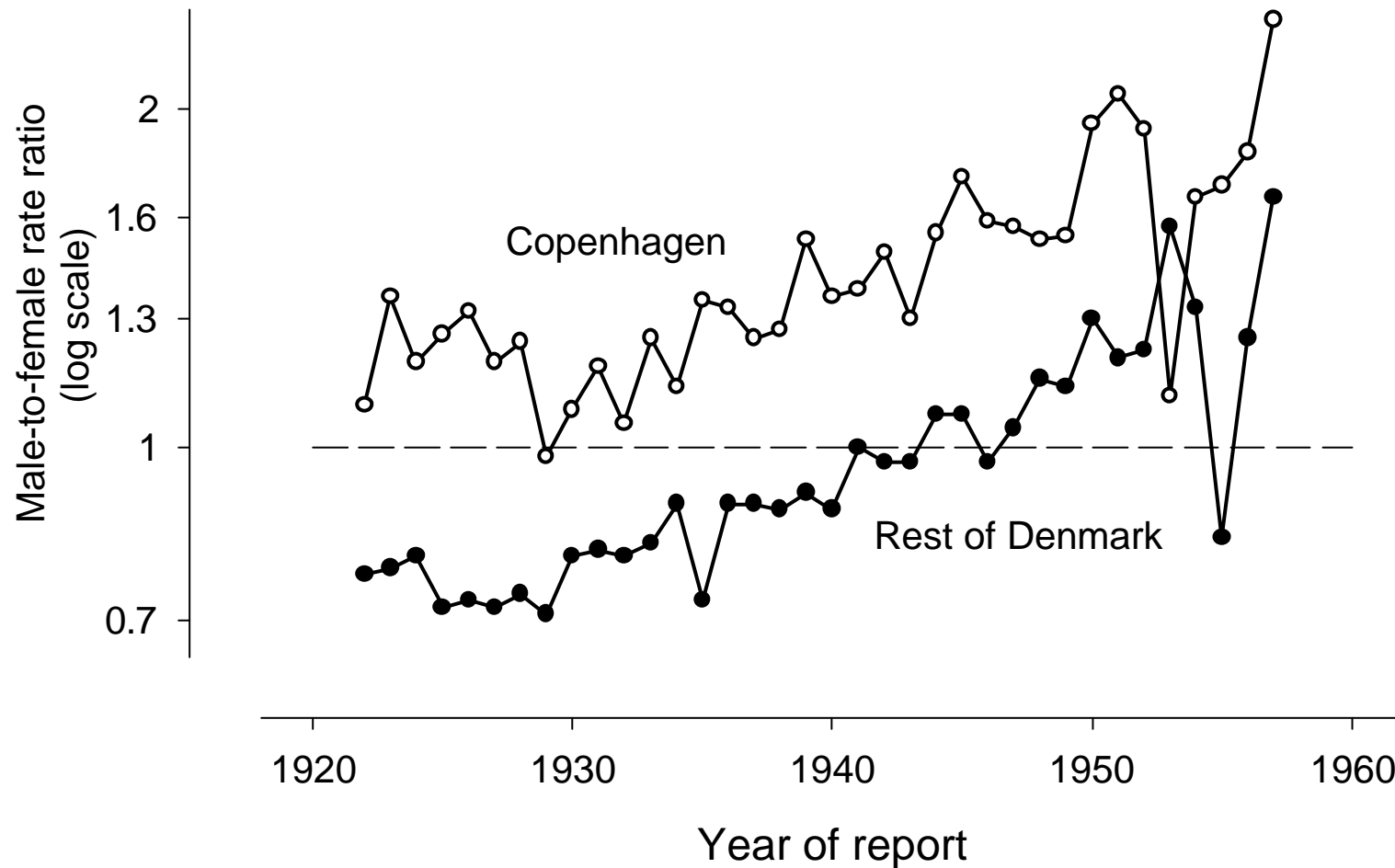
Age-Specific Notification Rates of Smear-Positive Tuberculosis, by Sex, Senegal, 1997



Incidence of Pulmonary Tuberculosis, by Sex, Denmark 1921 - 1957

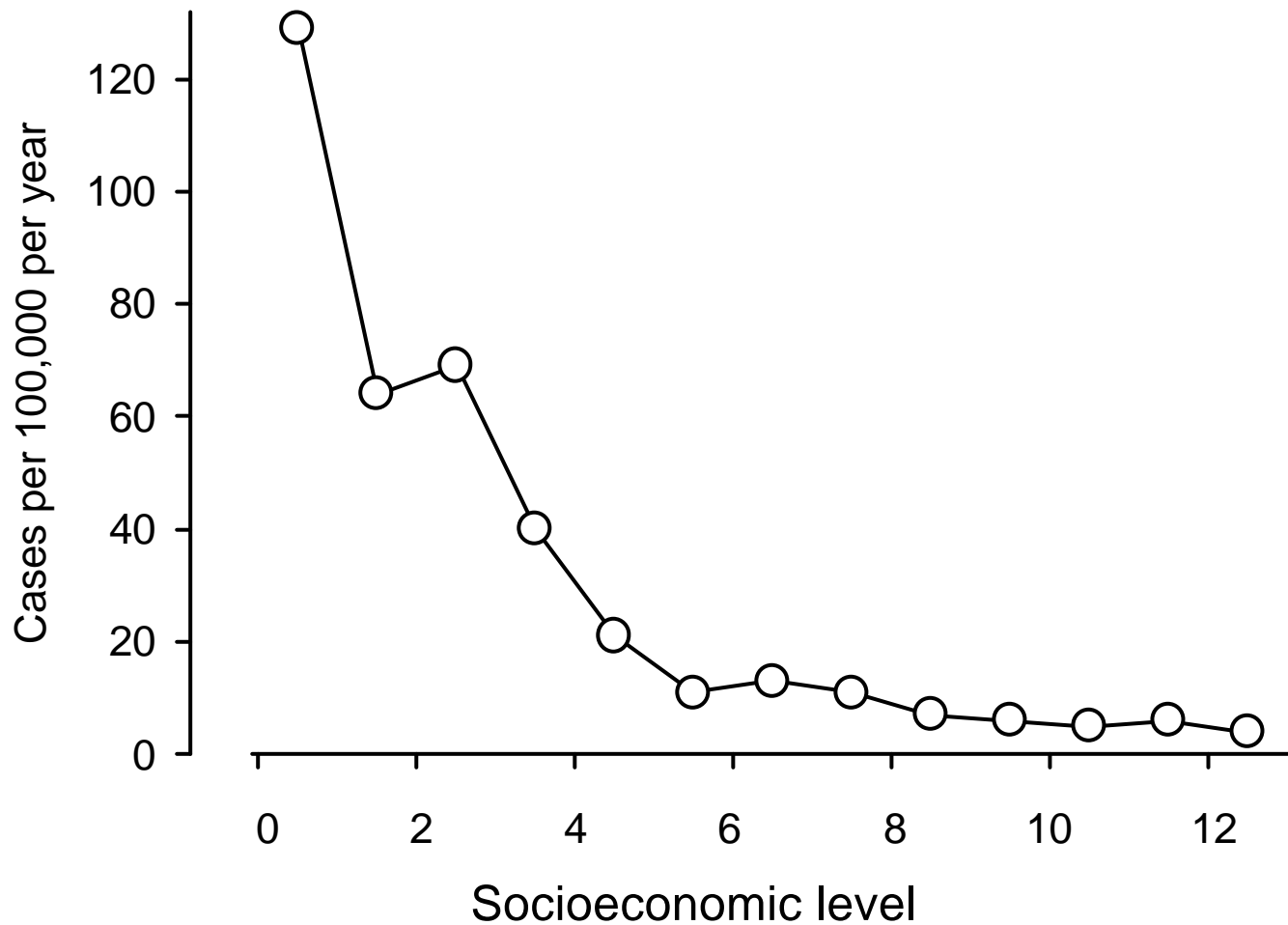


Male-to-Female Rate Ratio in the Incidence of Pulmonary Tuberculosis, Denmark, 1921 - 1957



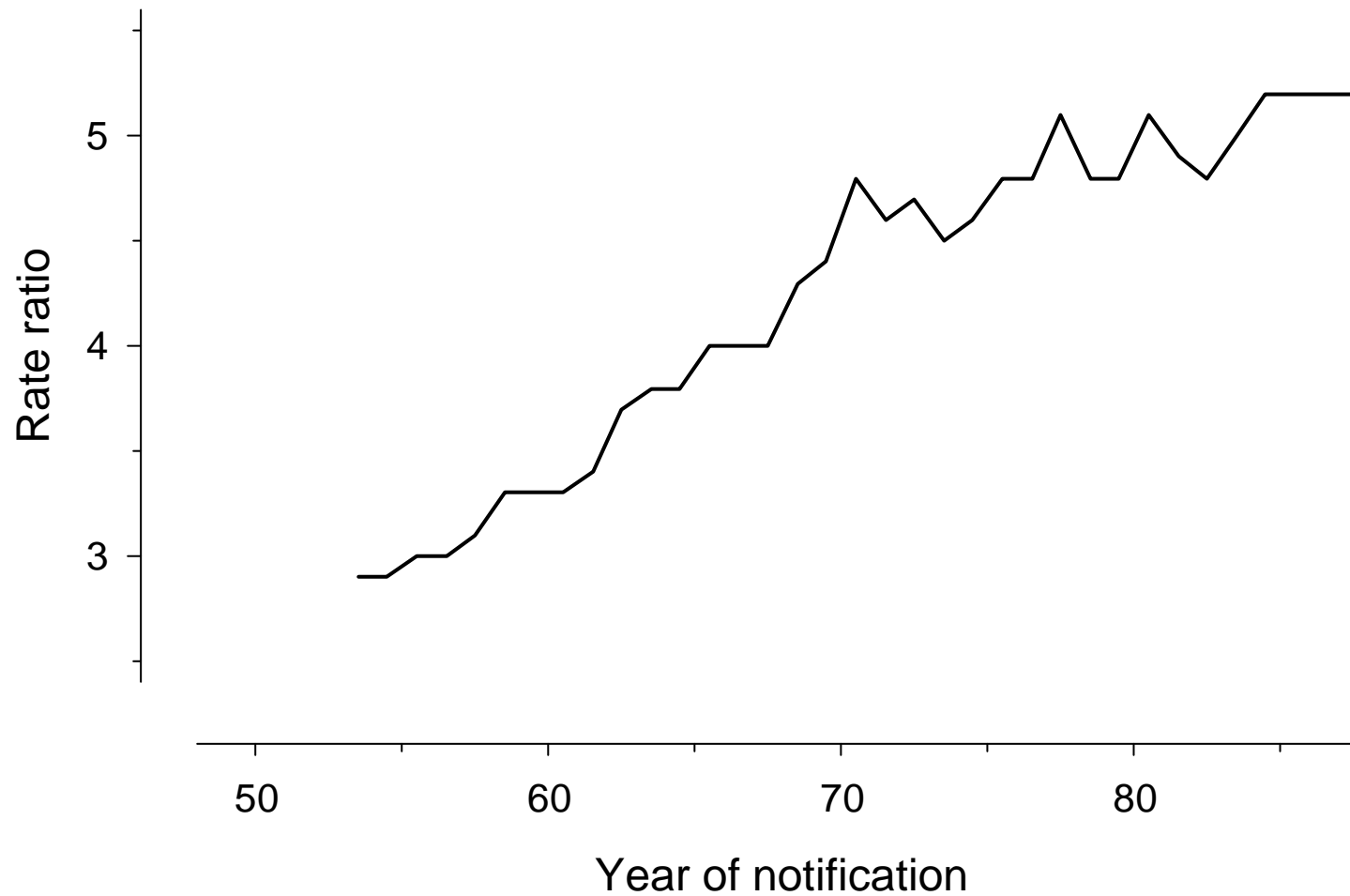
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Incidence Rates of New Cases of Tuberculosis by Socioeconomic Level, Upstate New York, 1973



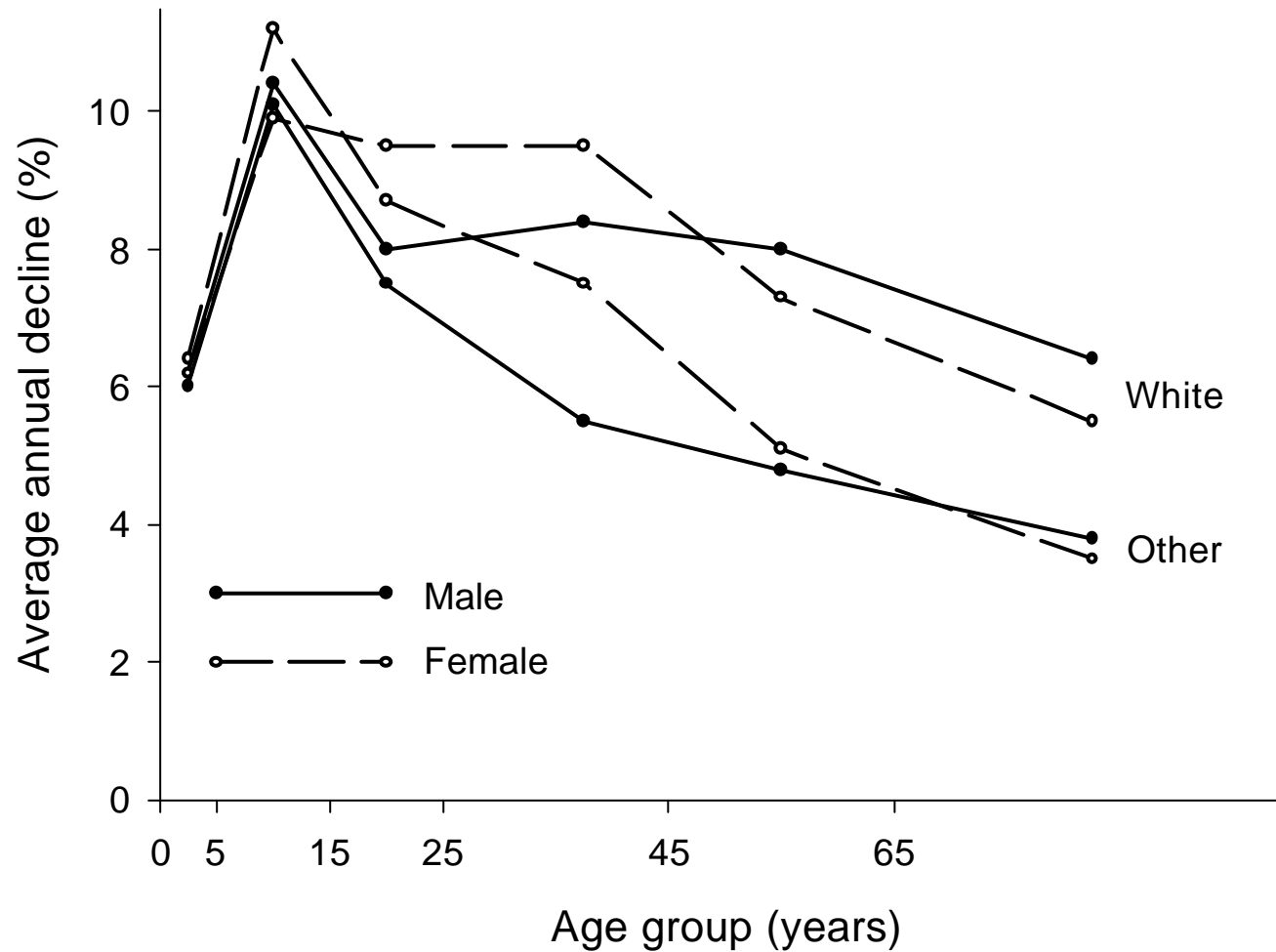
Hinman AR, et al. Am J Epidemiol 1976;103:486-97

White-to-Nonwhite Tuberculosis Case Rate Ratios, United States, 1953 - 1987

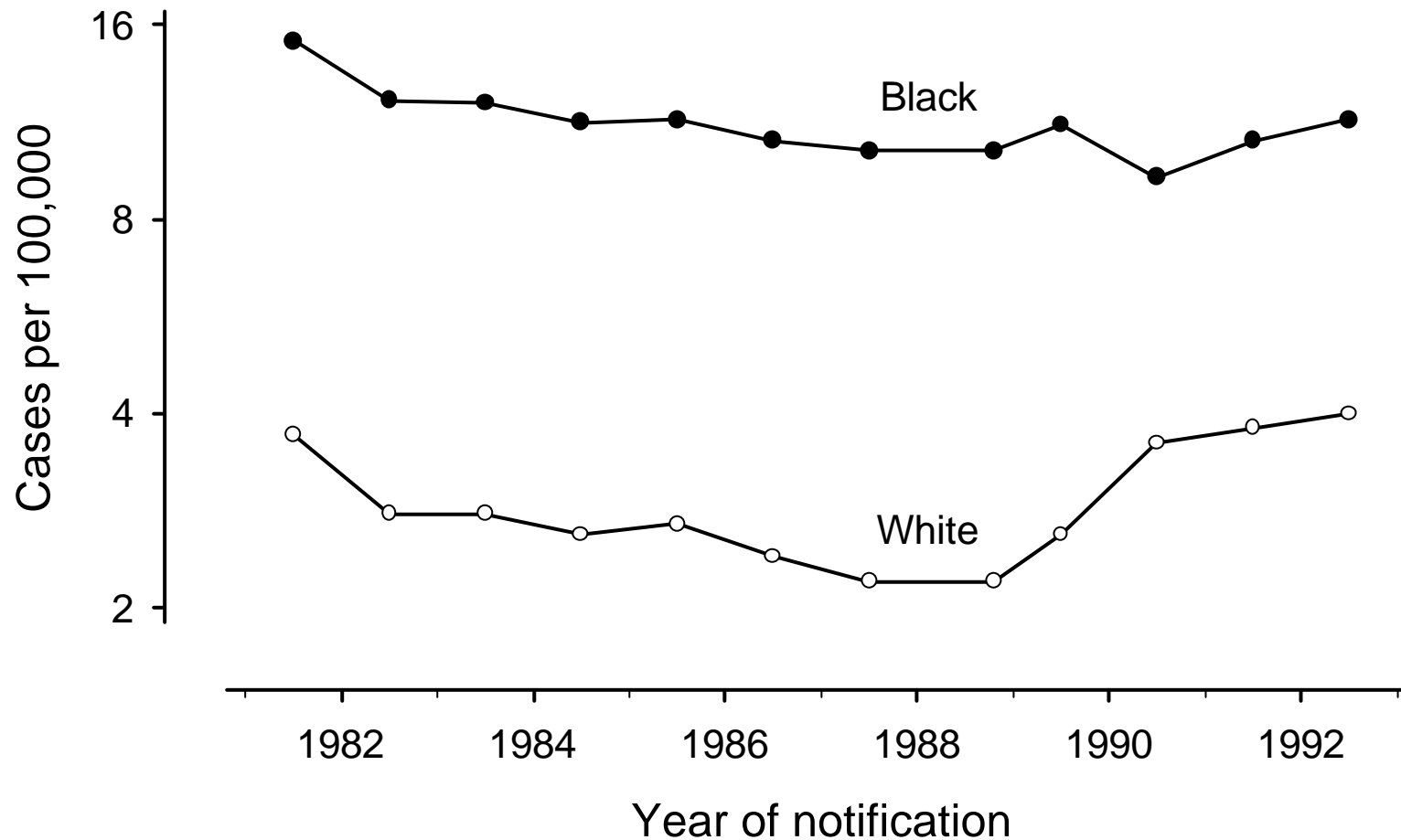


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Average Annual Decline in Tuberculosis Incidence, by Age, Race, and Sex, United States, 1963 - 1984

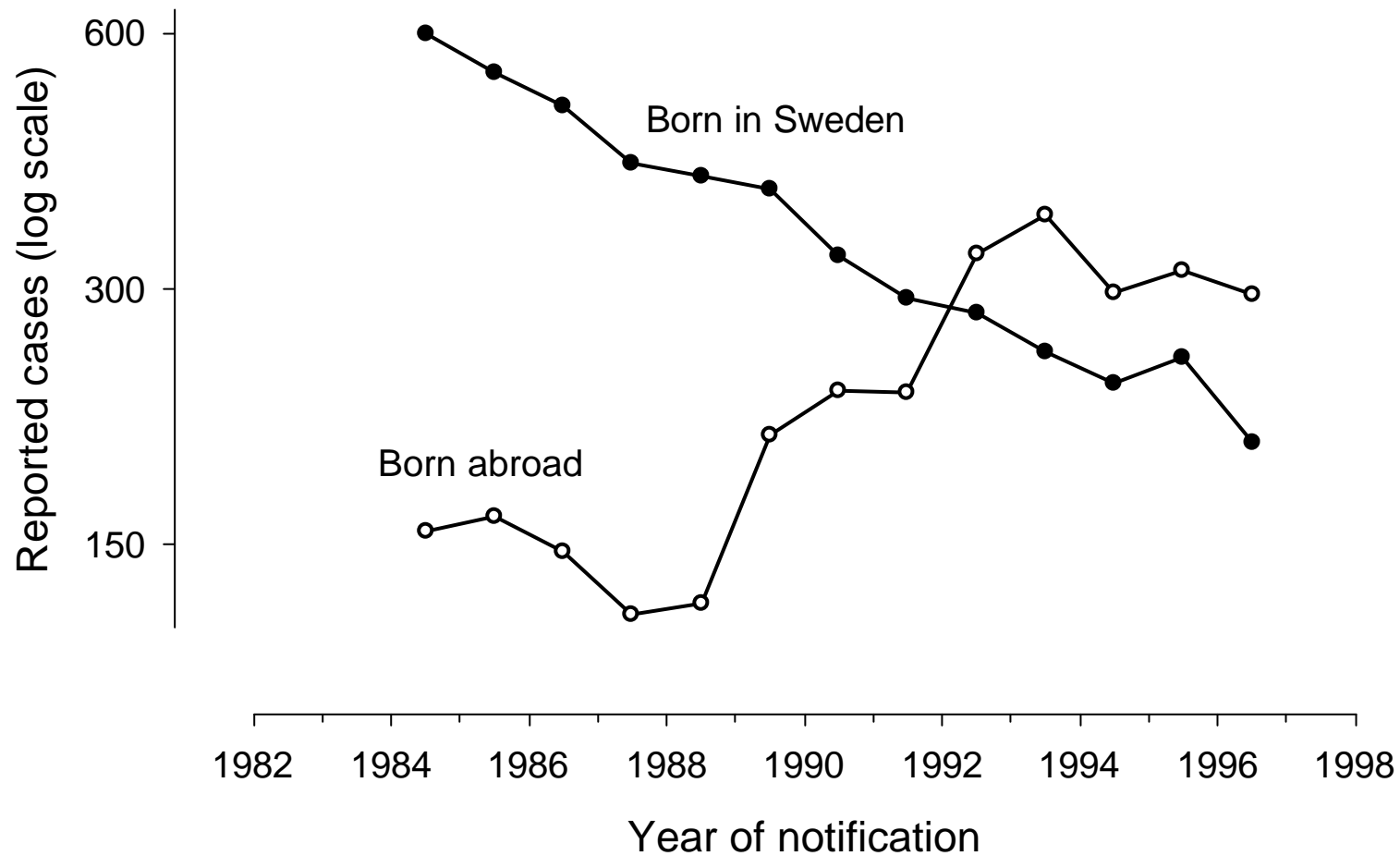


Tuberculosis Cases Rates Among Children Aged less than Five Years, by Race, United States, 1981 - 1992



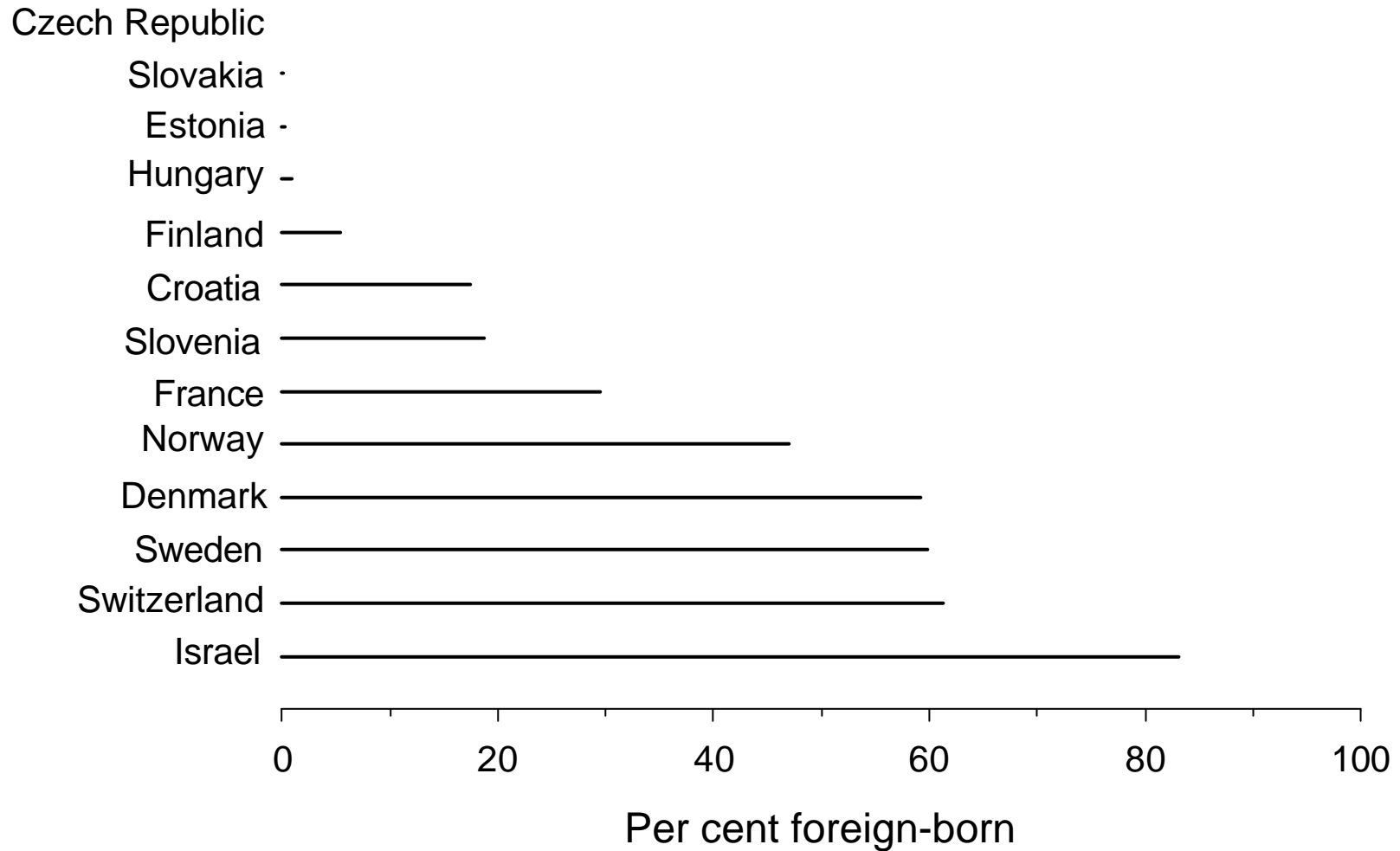
*Centers for Disease Control and Prevention
Tuberculosis Statistics in the United States, 1991 and 1992*

Reported Tuberculosis Cases in Sweden, by Country of Origin, 1984 - 1996

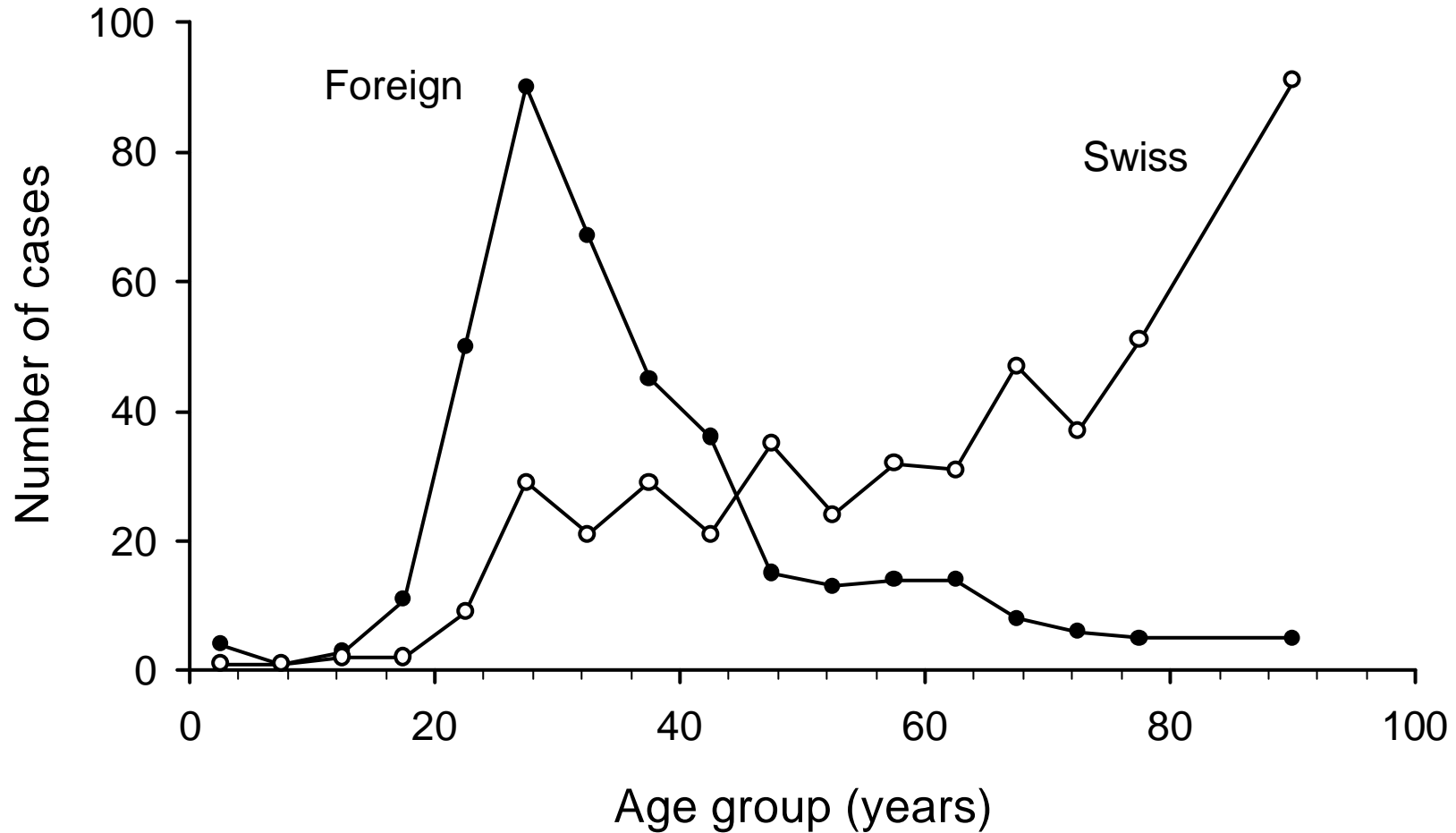


*Data courtesy: Romanus V. Swedish Institute for Infectious Disease Control, 1997
EuroTB. Surveillance of Tuberculosis in Europe, 1998*

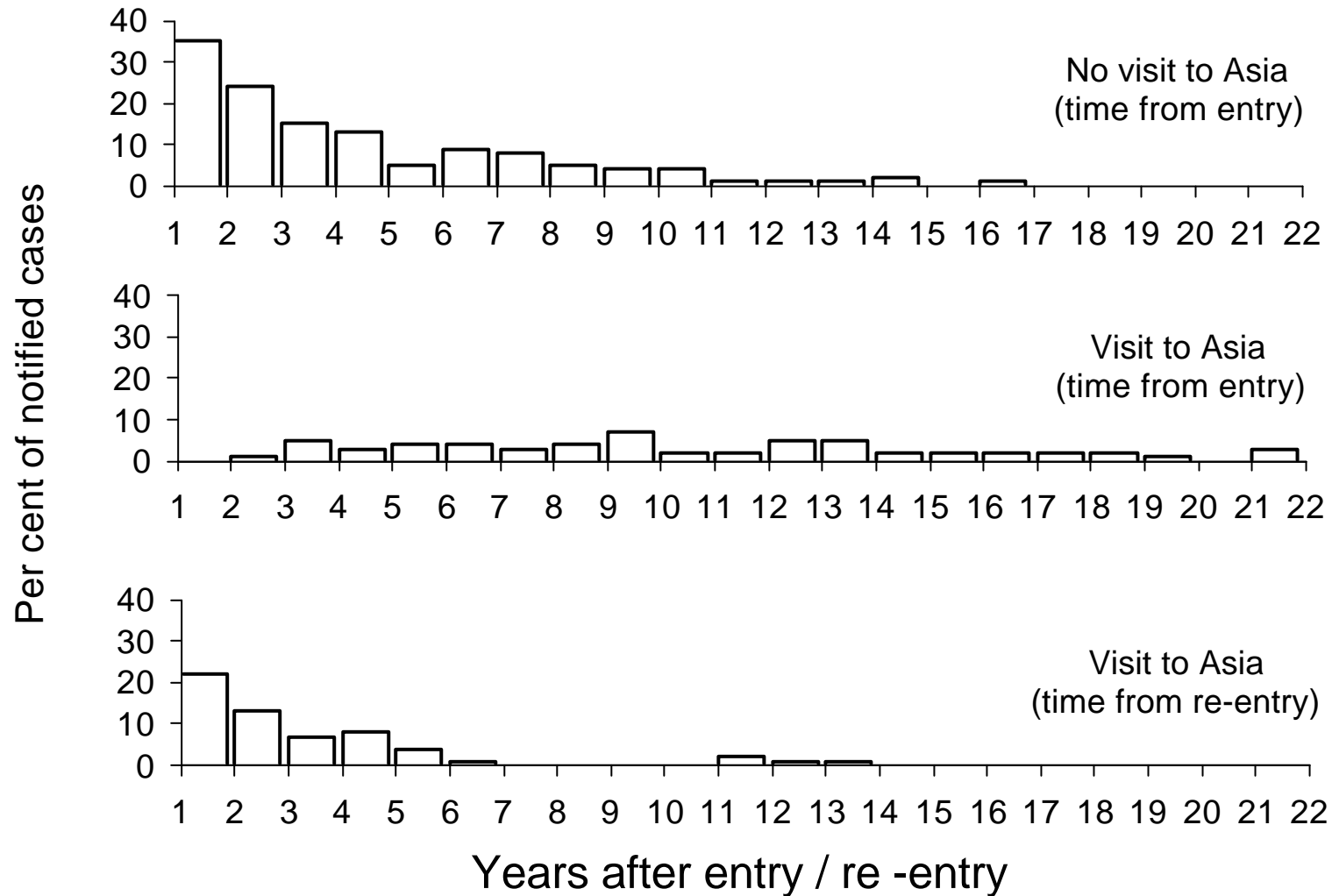
Proportion of Tuberculosis Cases Who Were Foreign-Born, WHO Europe Region, 1996



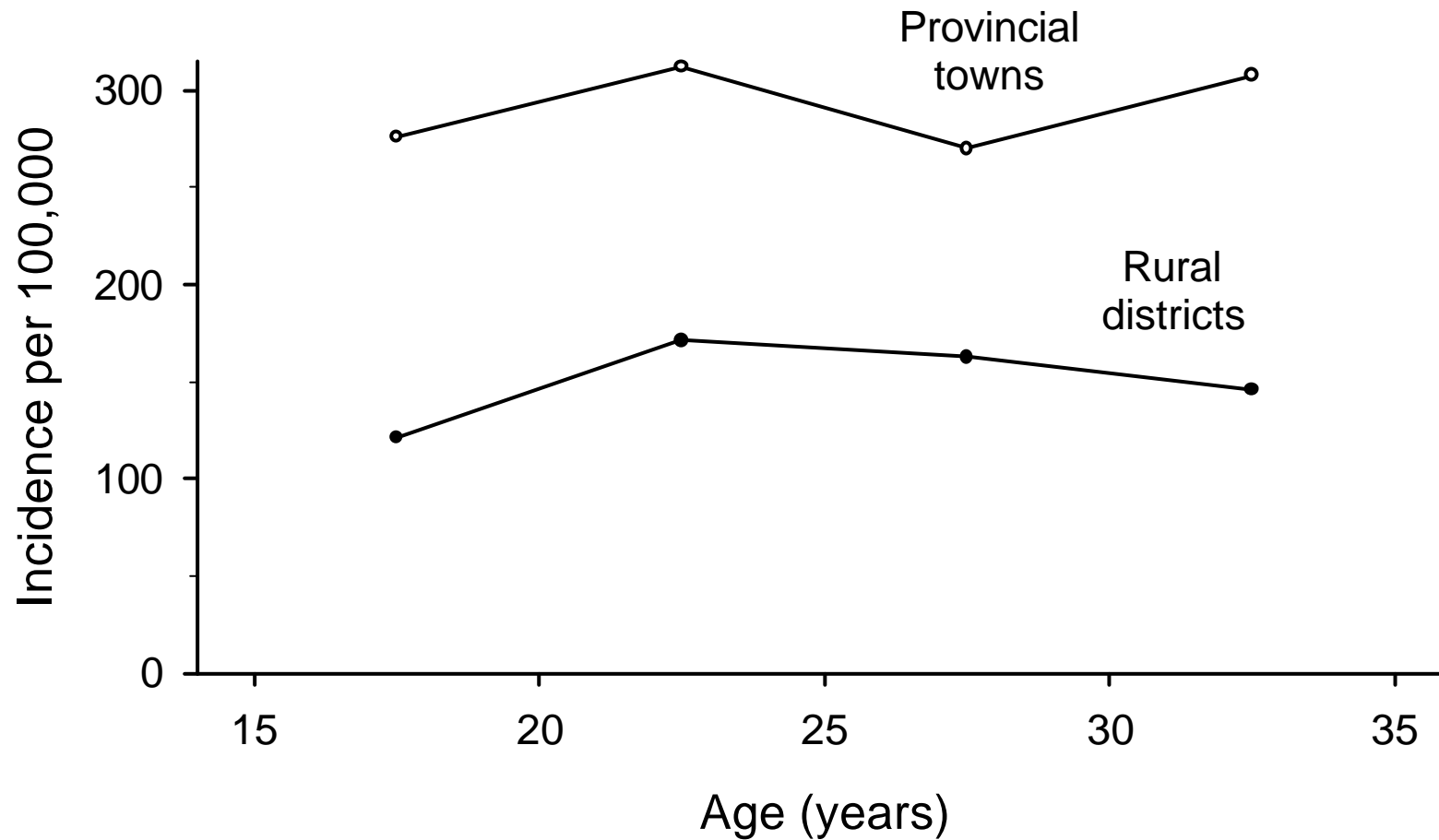
Reported Cases of Tuberculosis by Citizenship, Switzerland, 1990



Interval Between Entry or Re-Entry to Britain and Notification of Tuberculosis Among Asians in London

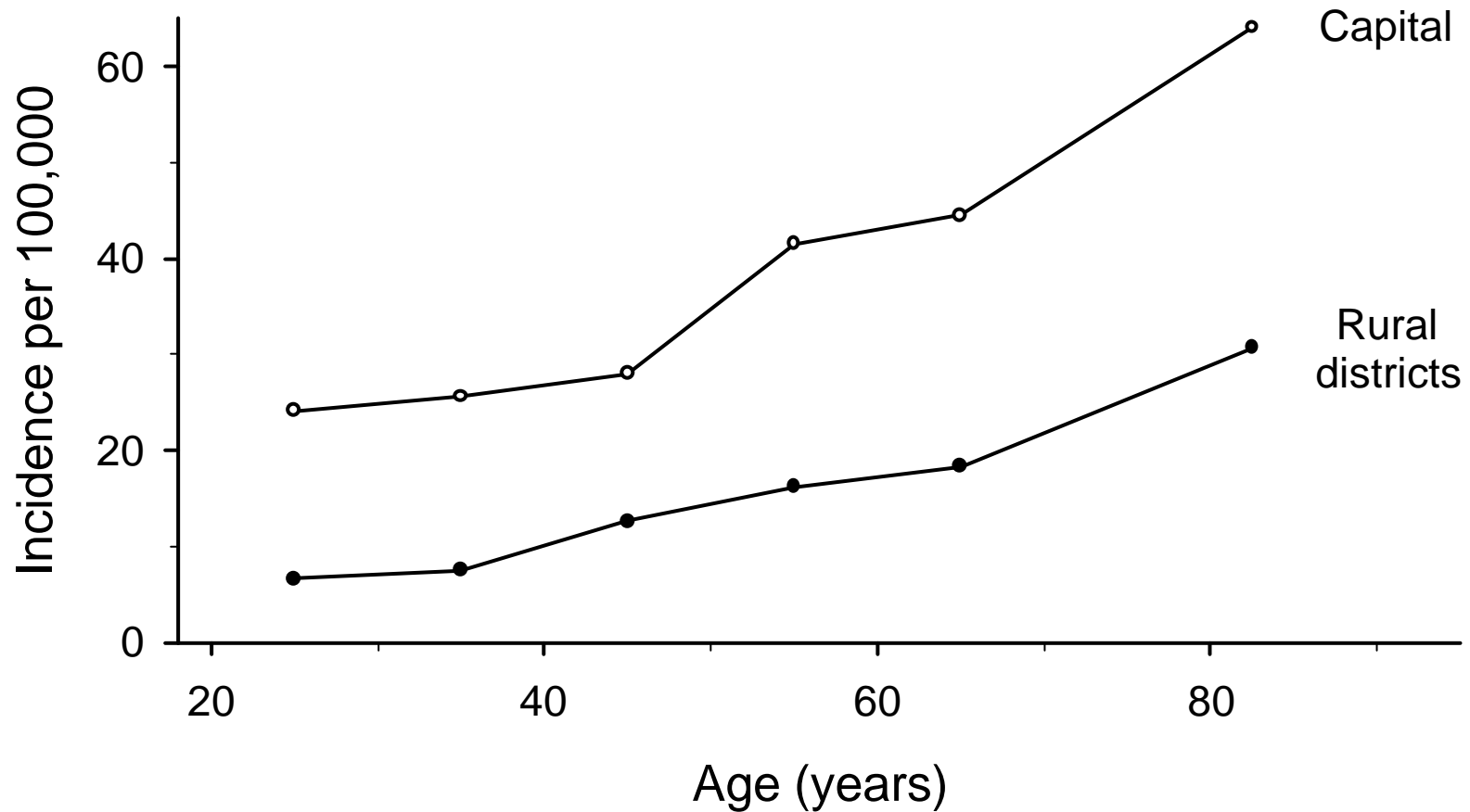


Incidence of pulmonary tuberculosis Among Males by Residence, Denmark, 1950 - 1952



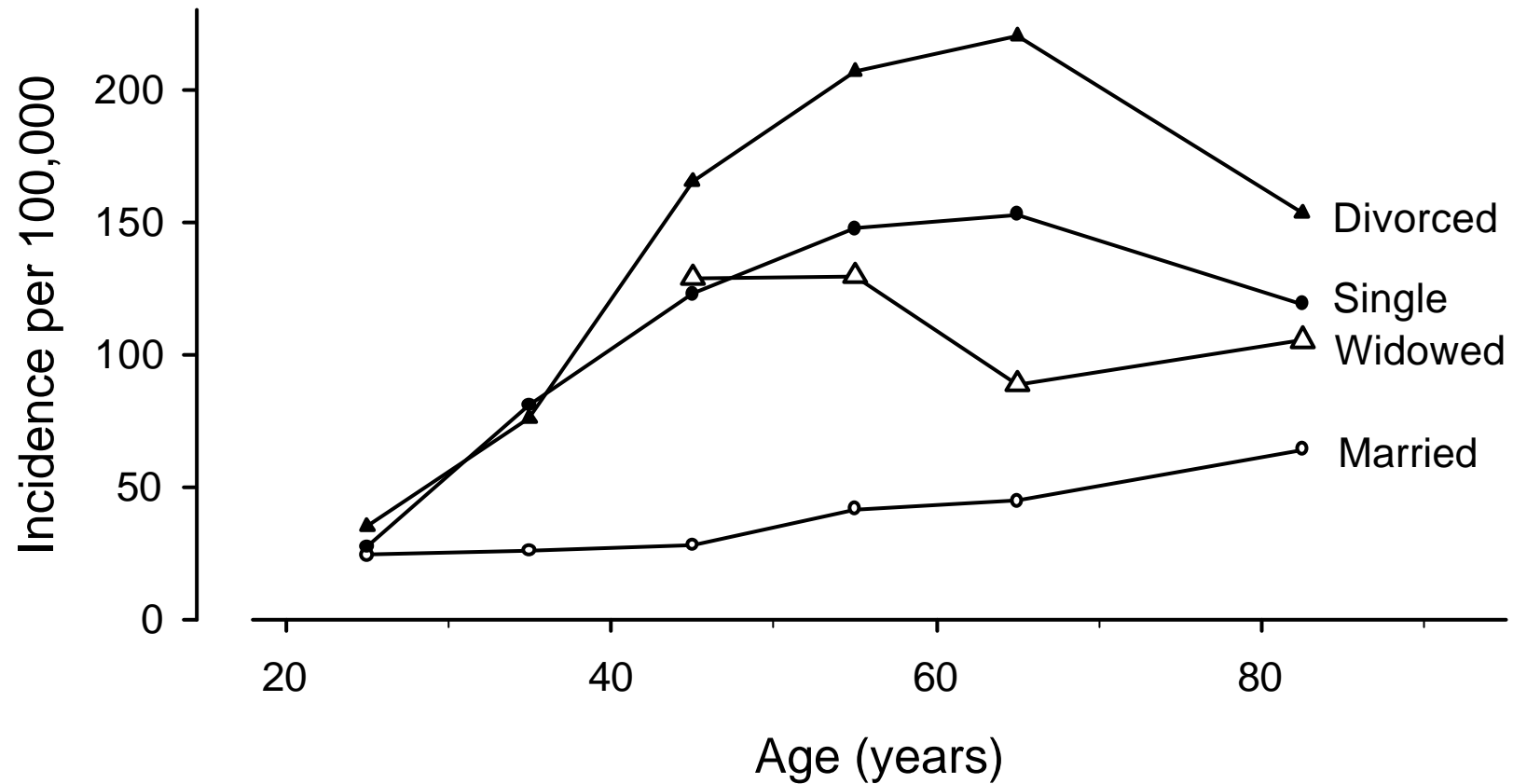
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Incidence of Pulmonary Tuberculosis Among Married Men, by Residence, Denmark, 1960 - 1968



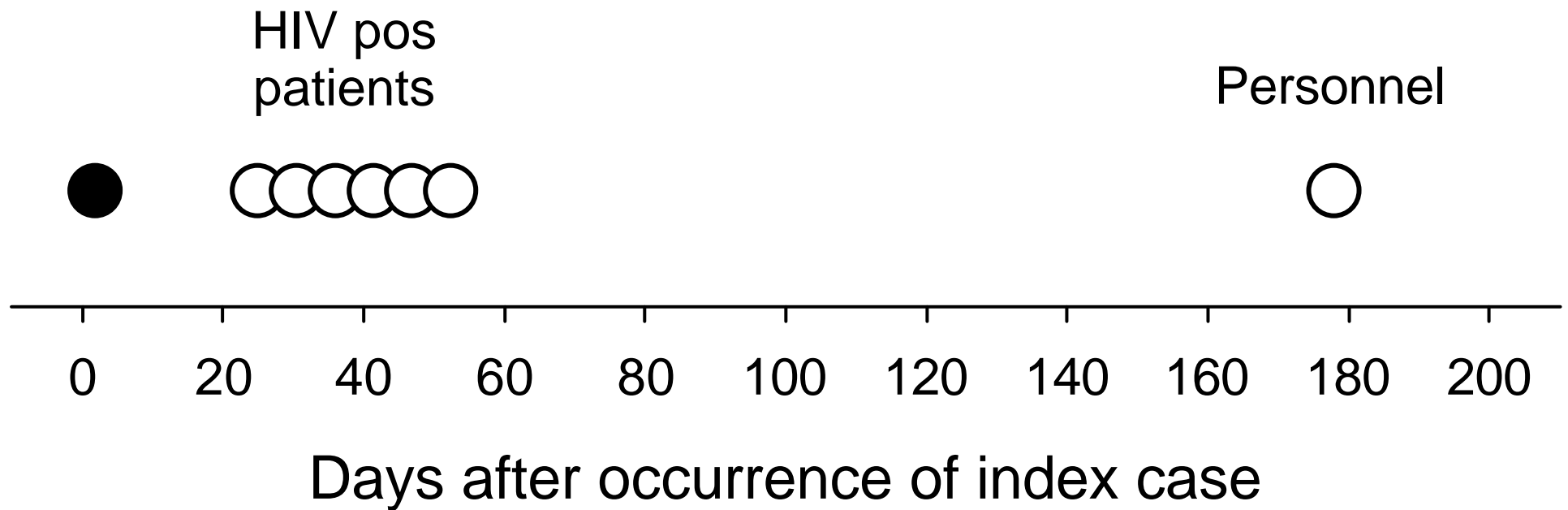
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Incidence of pulmonary tuberculosis Among Males by Marital Status in Copenhagen, Denmark, 1960 - 1968



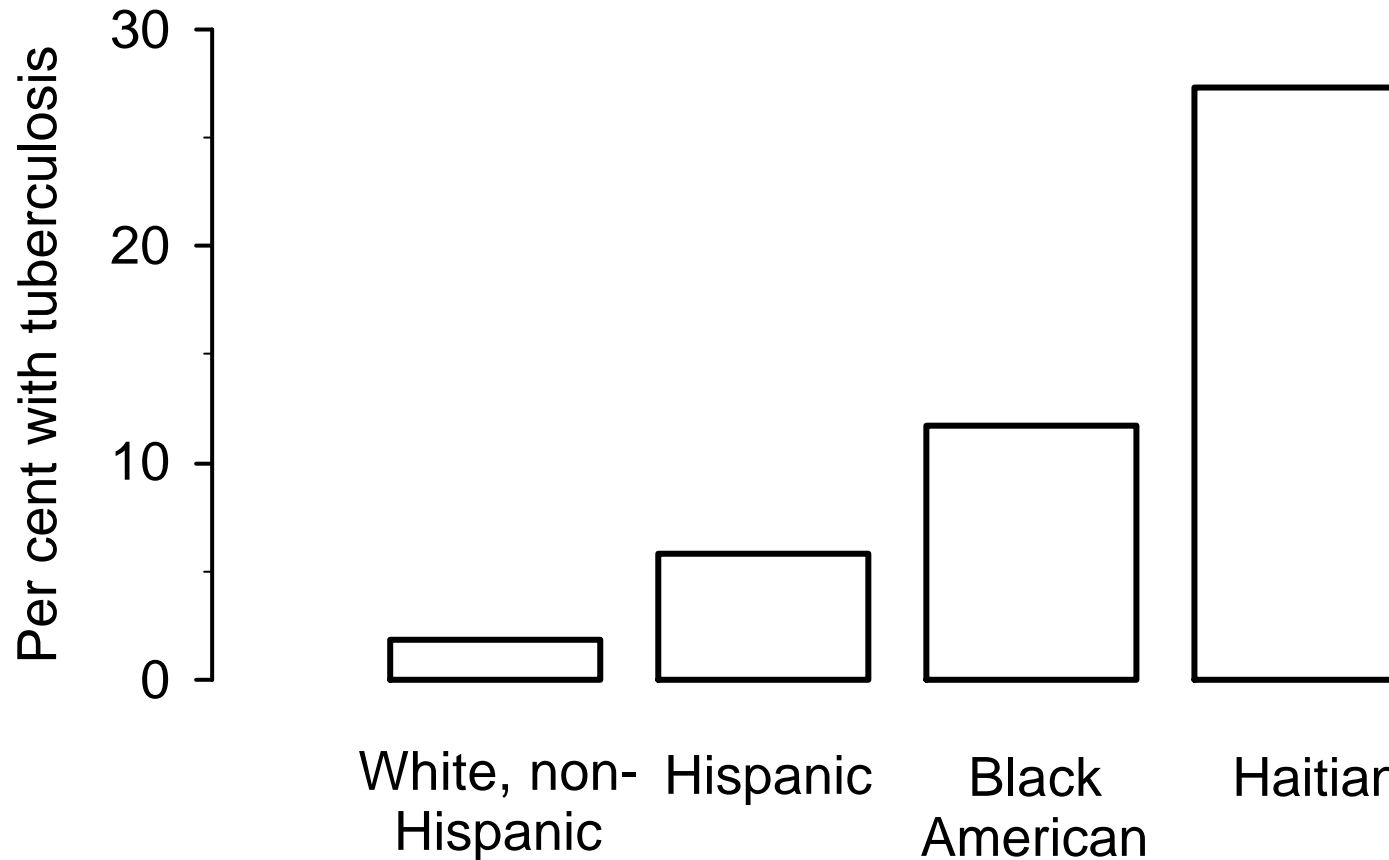
Christensen O. Scand J Respir Dis 1978(suppl):21-7

Nosocomial Tuberculosis Outbreak in a Hospital in Verona, Italy



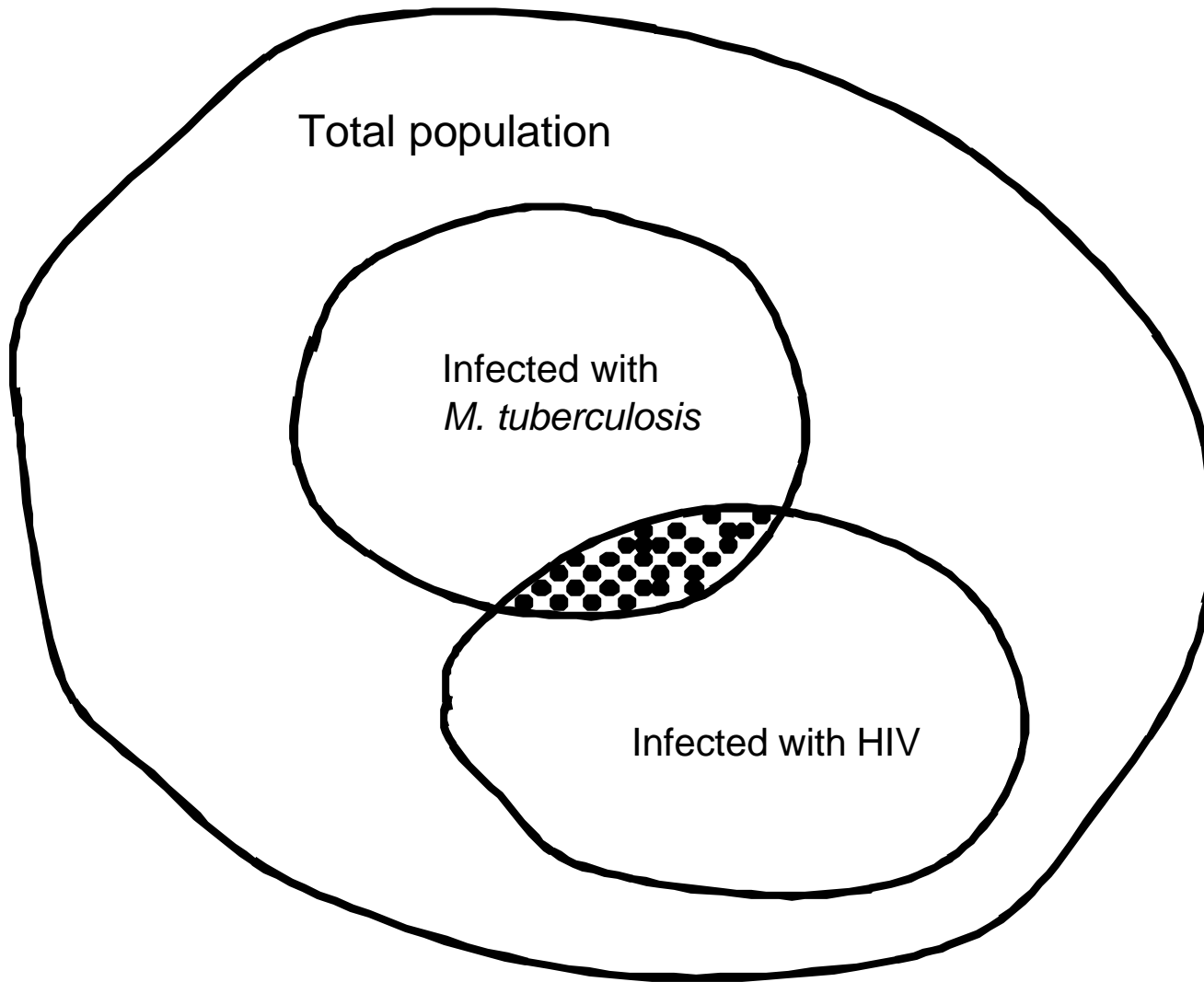
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Tuberculosis among AIDS Patients, by Race / Ethnicity, Florida, United States, 1981 - 1986



Rieder HL, et al. Arch Intern Med 1989;149:1268-73

Determinants for the Frequency of HIV-Associated Tuberculosis in a Community

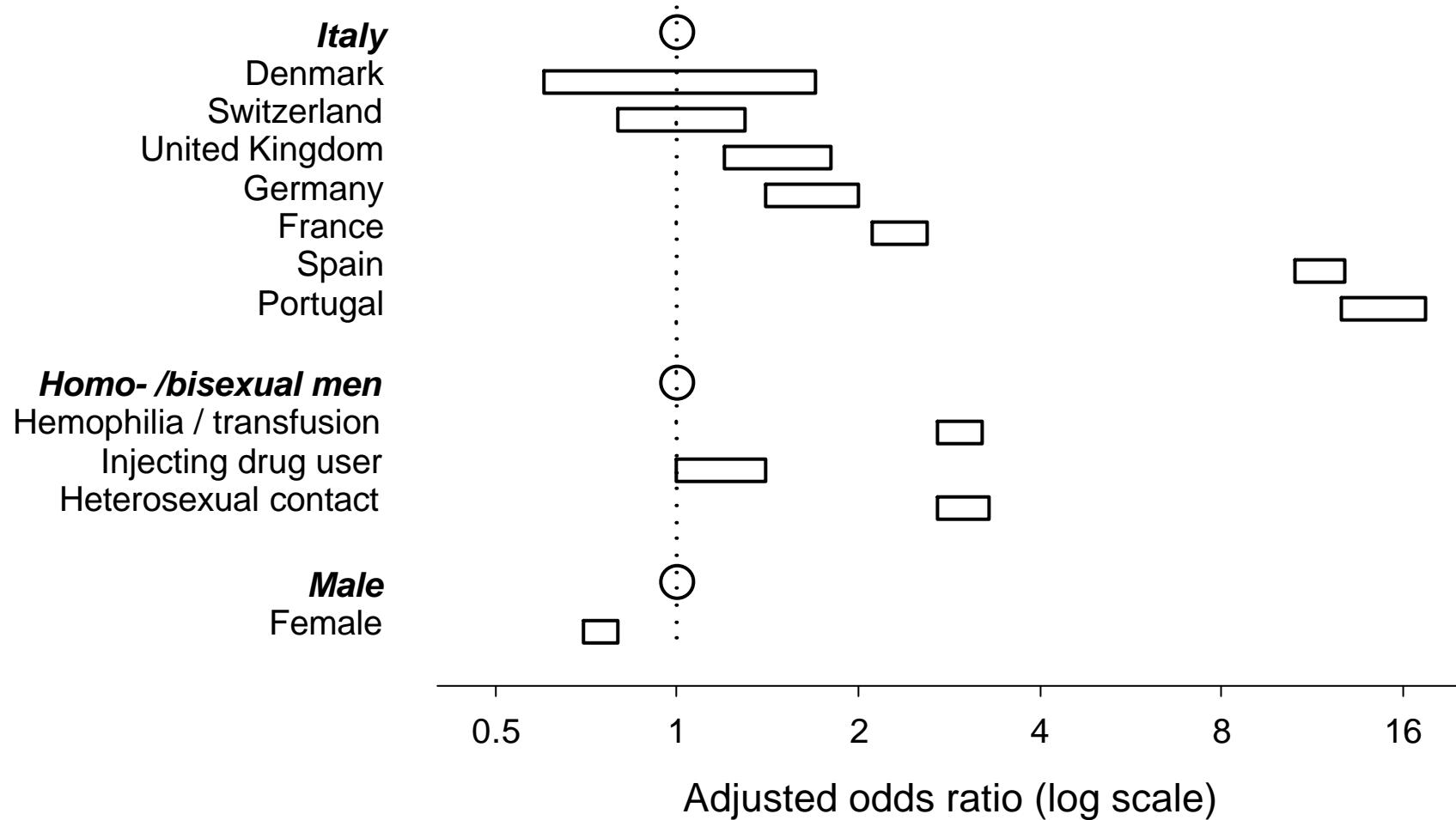


Prevalence of infection with
M. tuberculosis

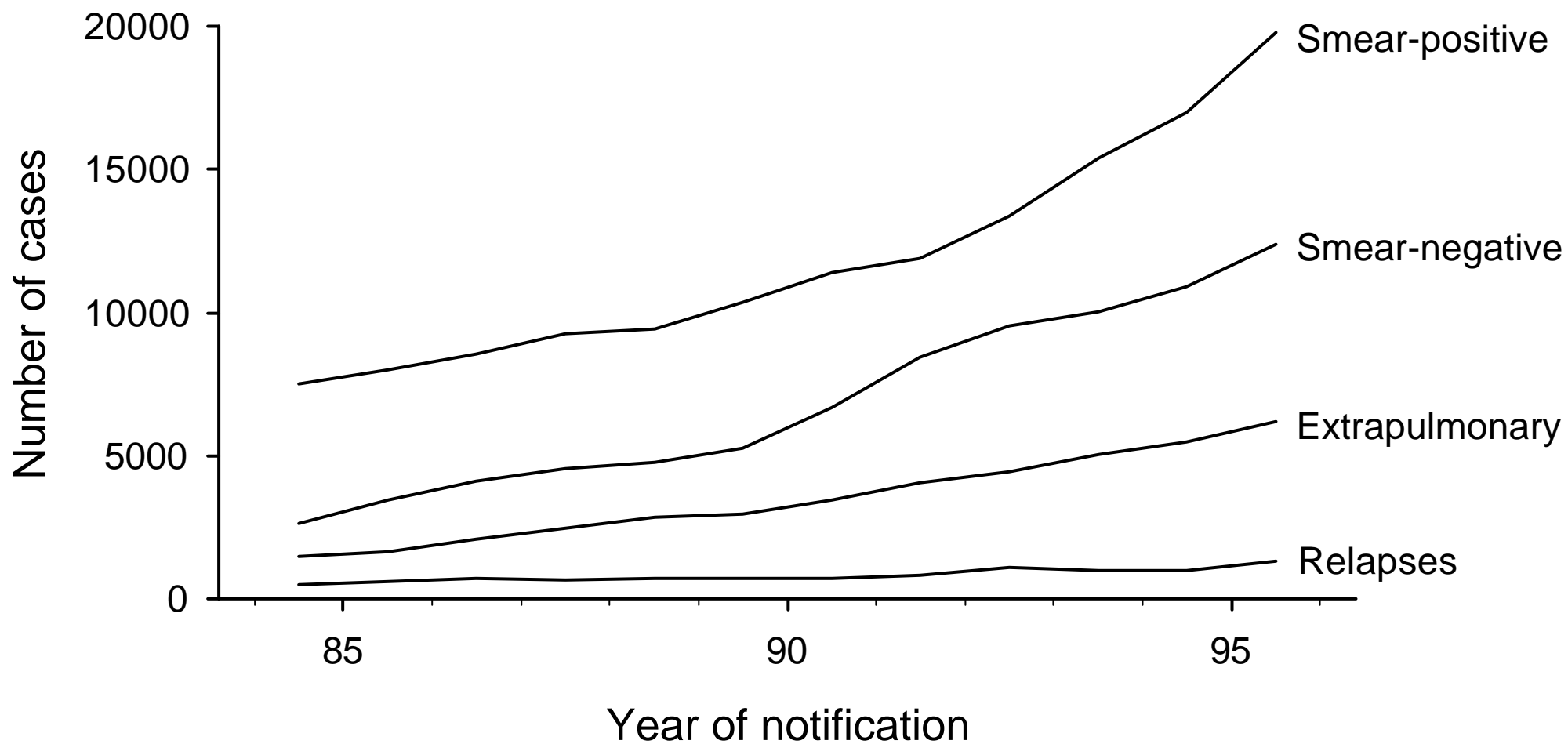
Prevalence and incidence
of HIV infection

Overlap of the two respective
population segments

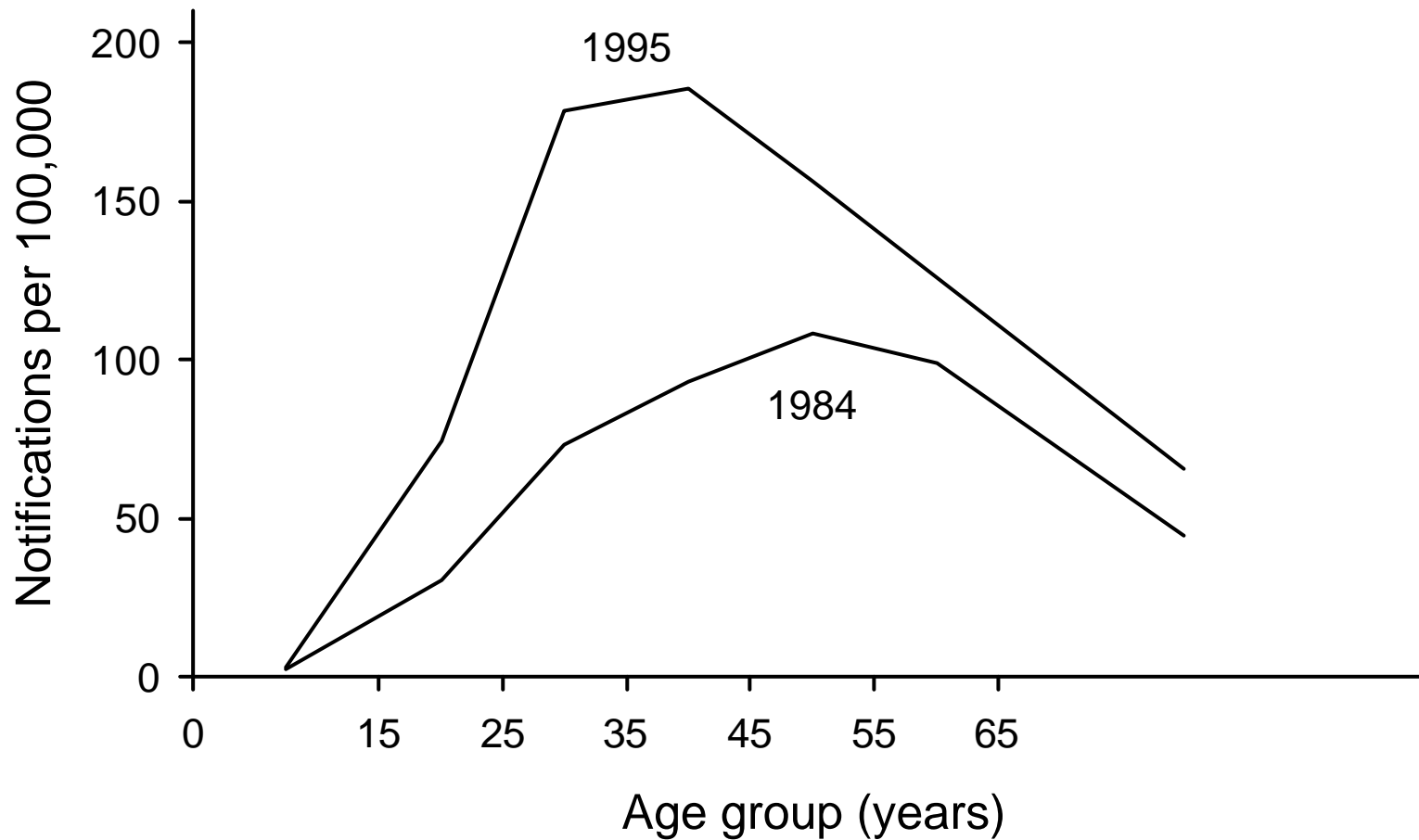
Factors Associated with Extrapulmonary Tuberculosis at AIDS Diagnosis, Selected European Countries



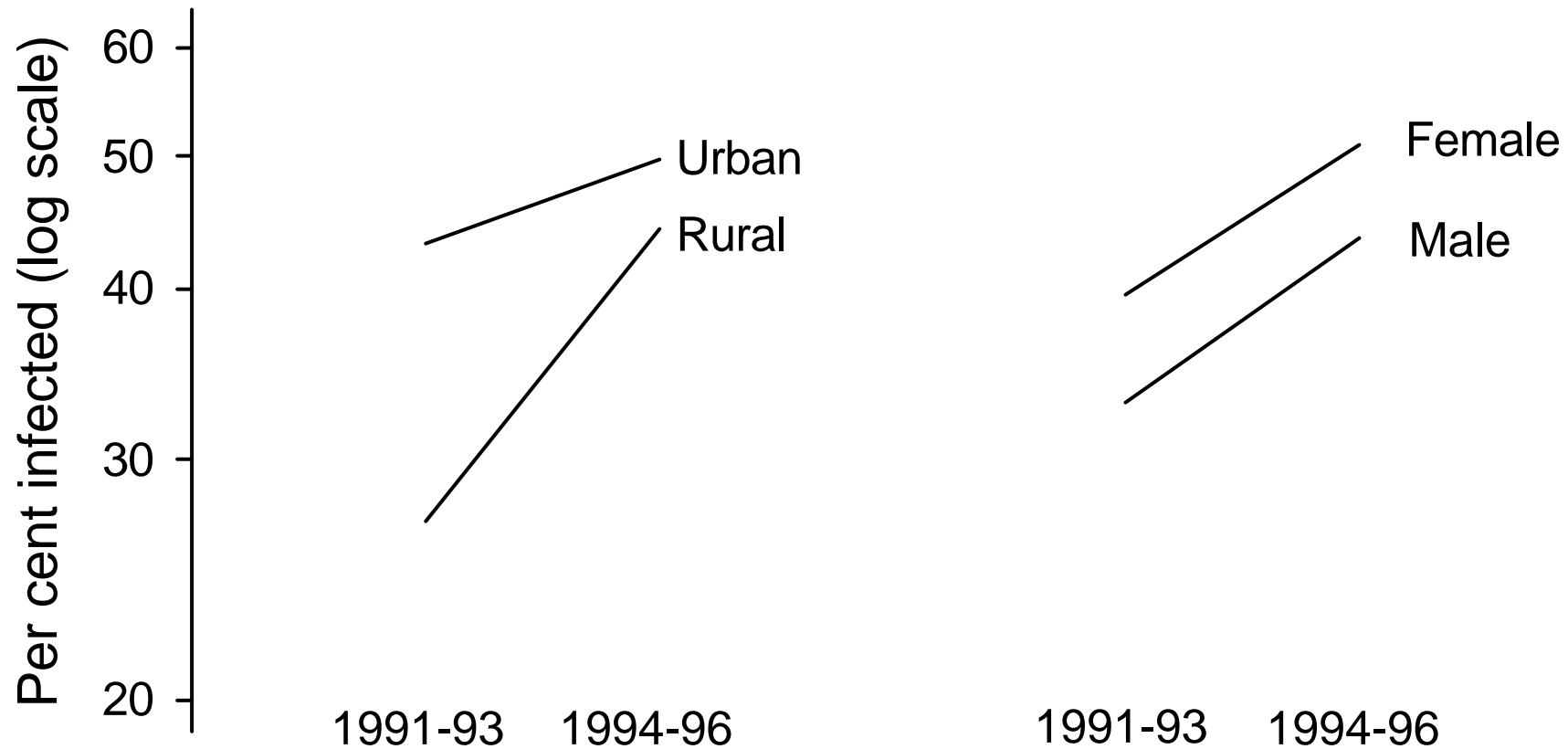
Notifications of Tuberculosis, by Type of Disease, Tanzania Mainland, 1984 - 1995



Notification Rates of Sputum Smear-Positive Tuberculosis, by Age, Tanzania Mainland, 1984 and 1995

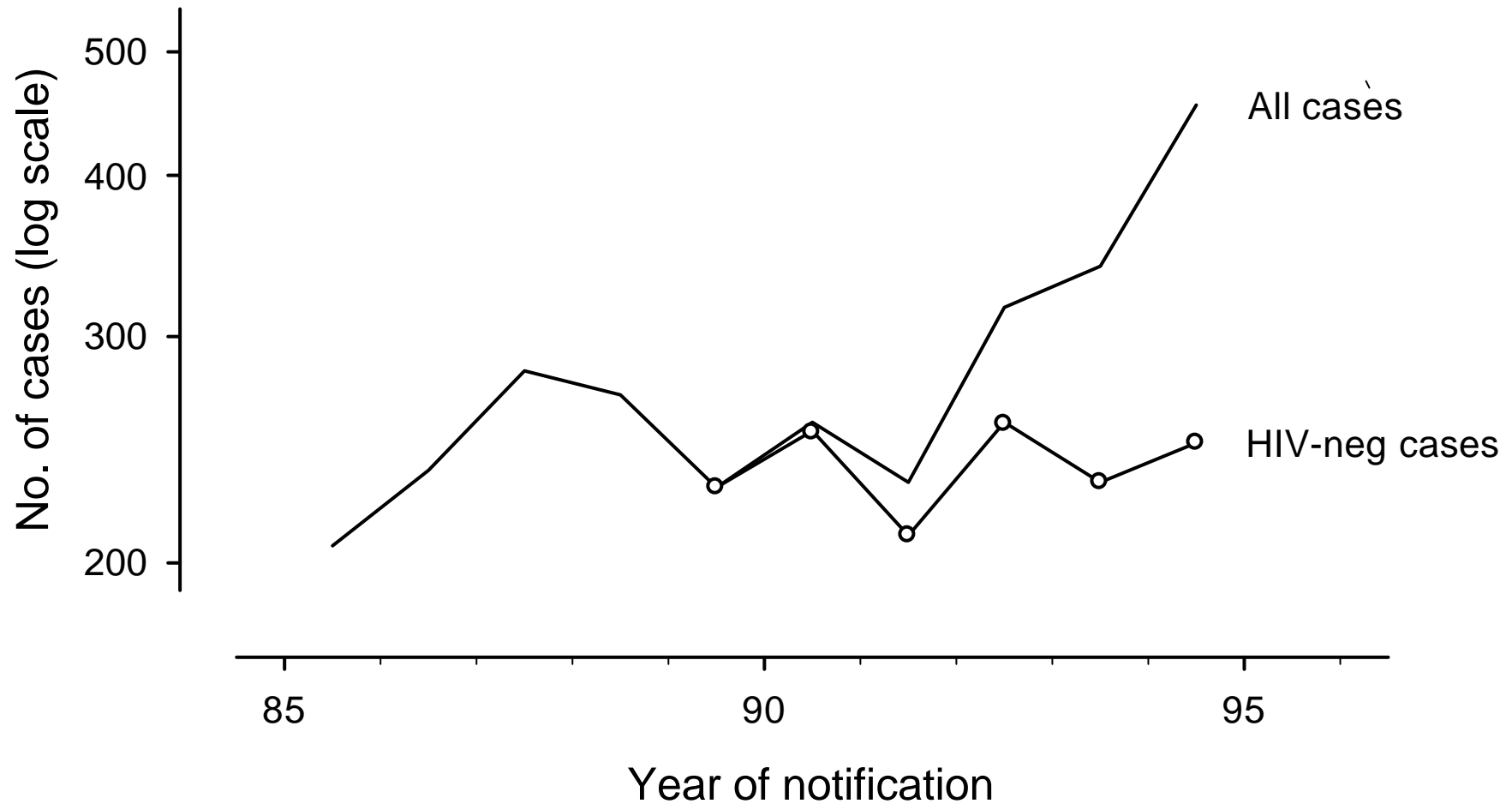


Change in HIV-Seroprevalence among Tuberculosis Patients in Tanzania, 1992 and 1995

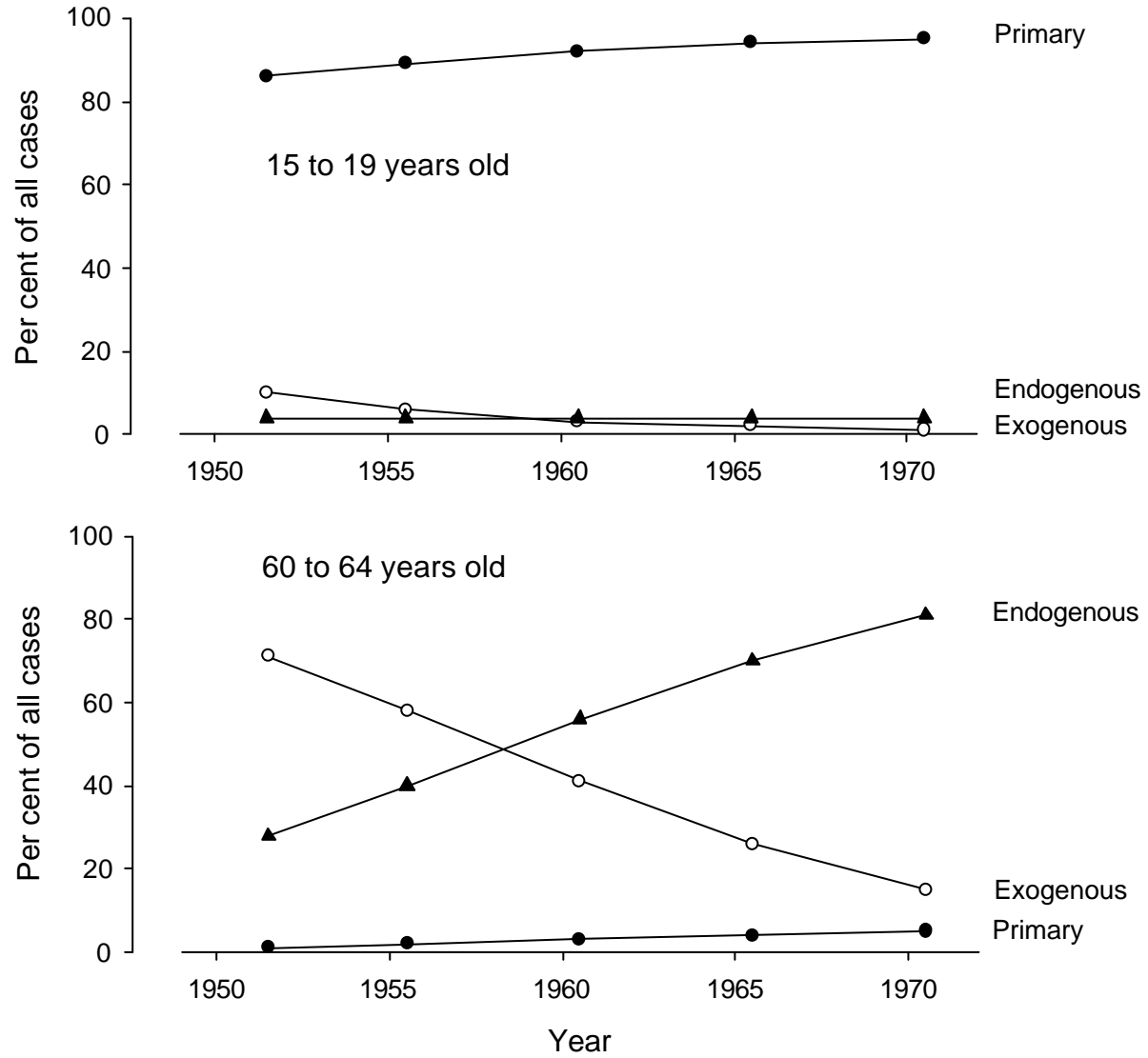


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Impact of HIV Infection on Tuberculosis Notifications in Chiang Rai, Thailand, 1985 - 1994



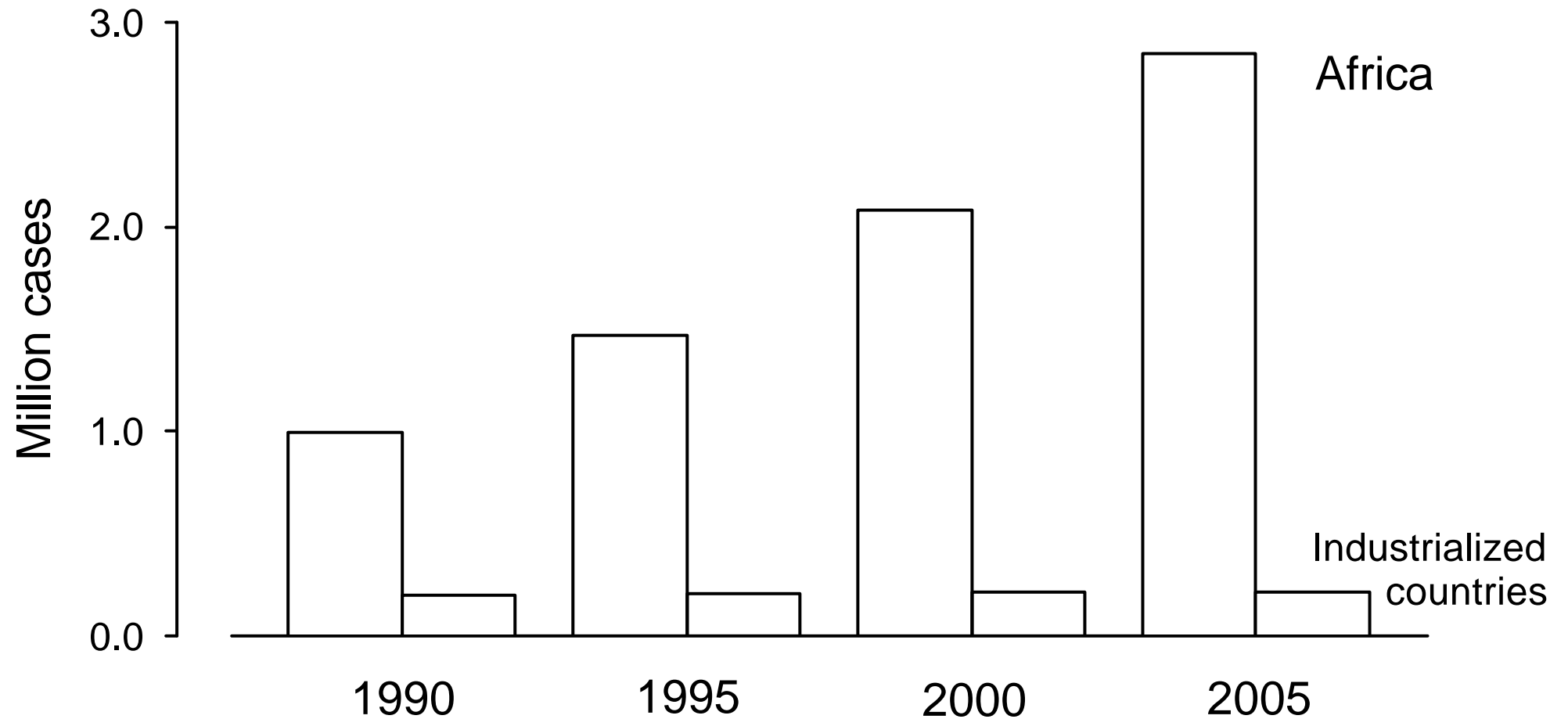
Proportion of Tuberculosis Cases Attributable to Primary Infection, Exogenous Reinfection, or Endogenous Reactivation, Among Males, by Age, Netherlands



Projected Tuberculosis Incidence among Males in Finland, Years 2000 and 2010

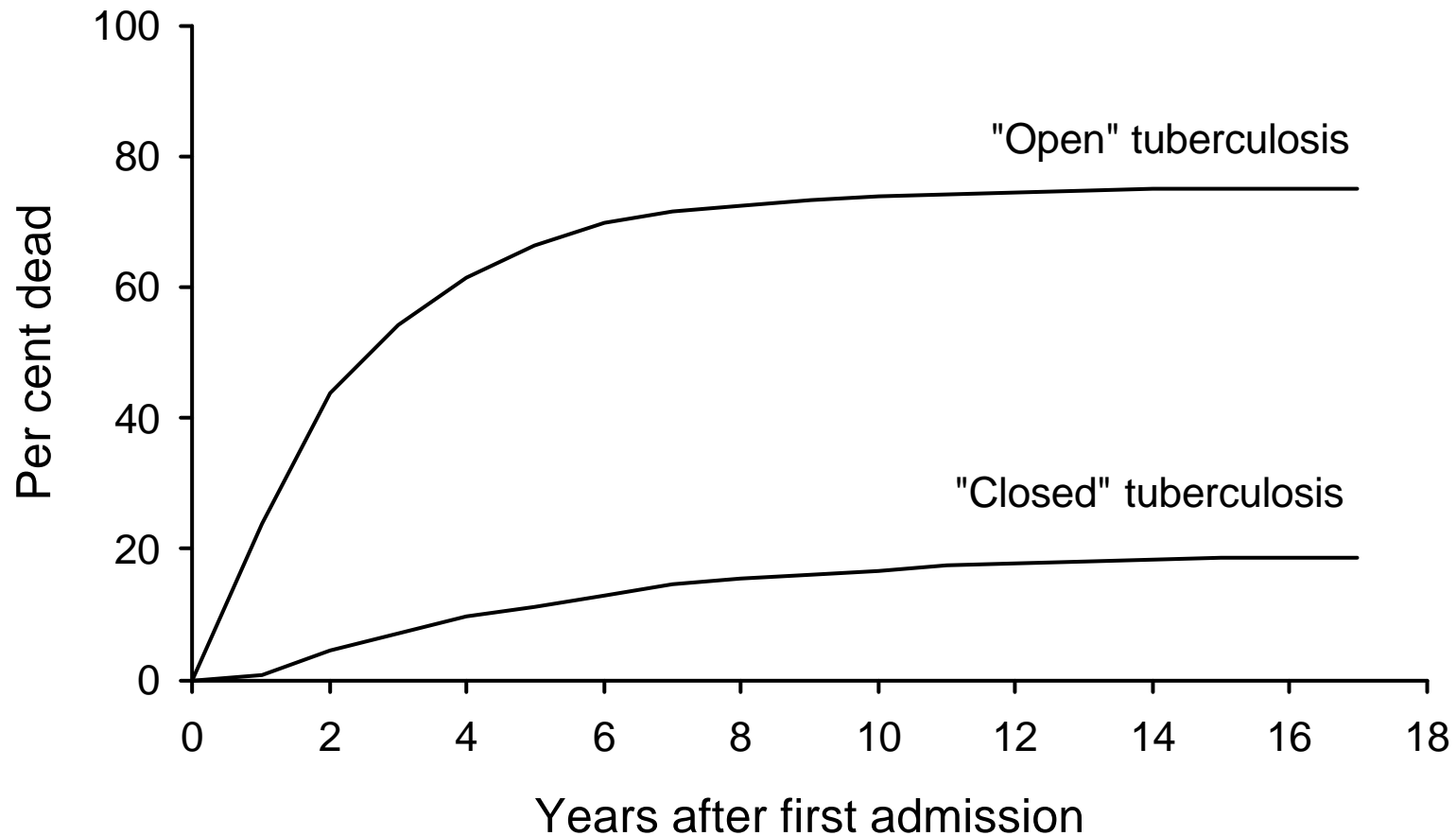


WHO Forecasts for Tuberculosis Incidence, 1990 - 2005



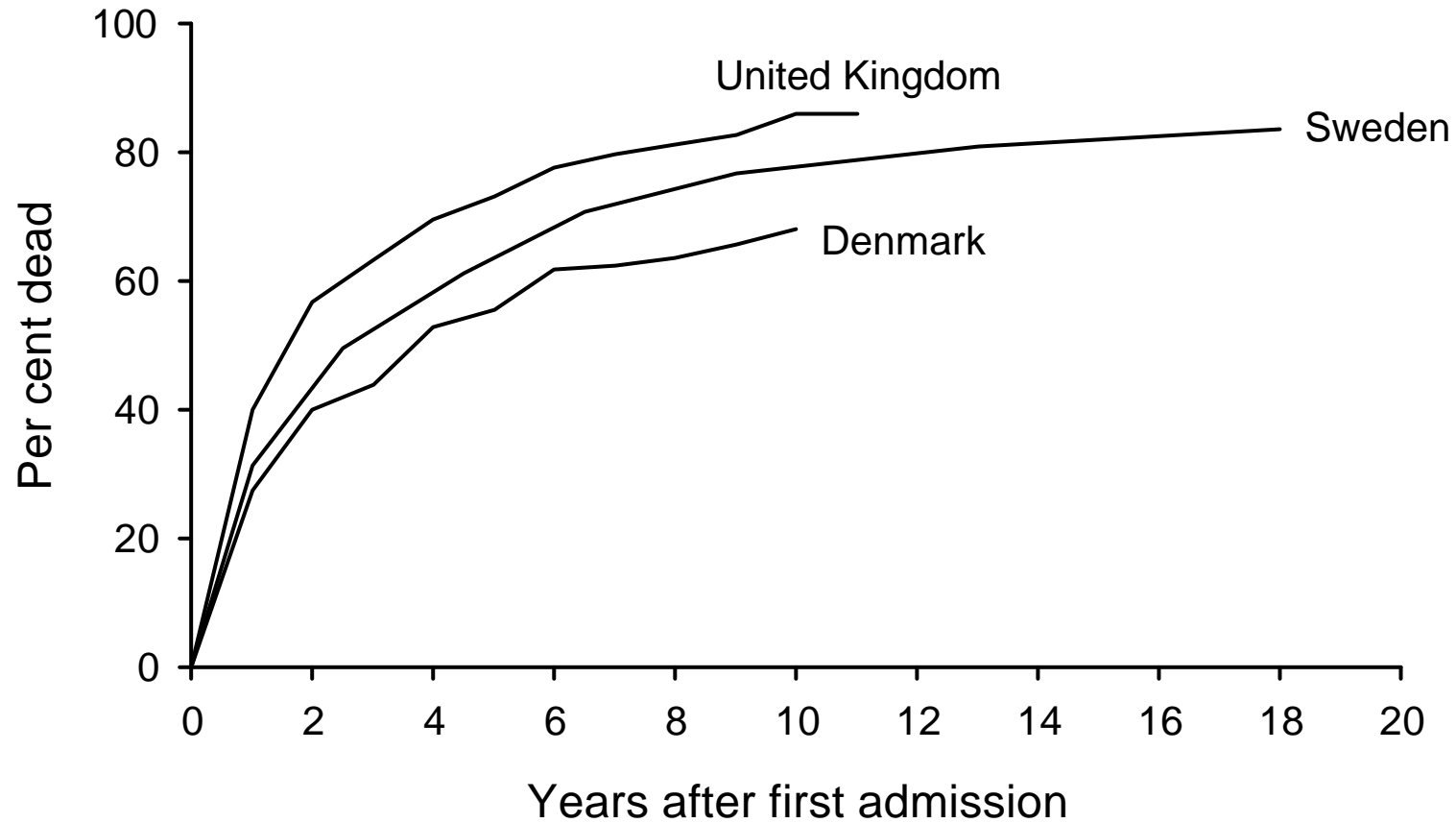
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Fate of Untreated Pulmonary Tuberculosis in Sanatorium Patients, Long-Term Follow-Up, Barmelweid, Switzerland



Krebs W. Beitr Klin Tbk 1930;74:345-79

Cumulative Case Fatality from Untreated Sputum Smear-Positive Pulmonary Tuberculosis

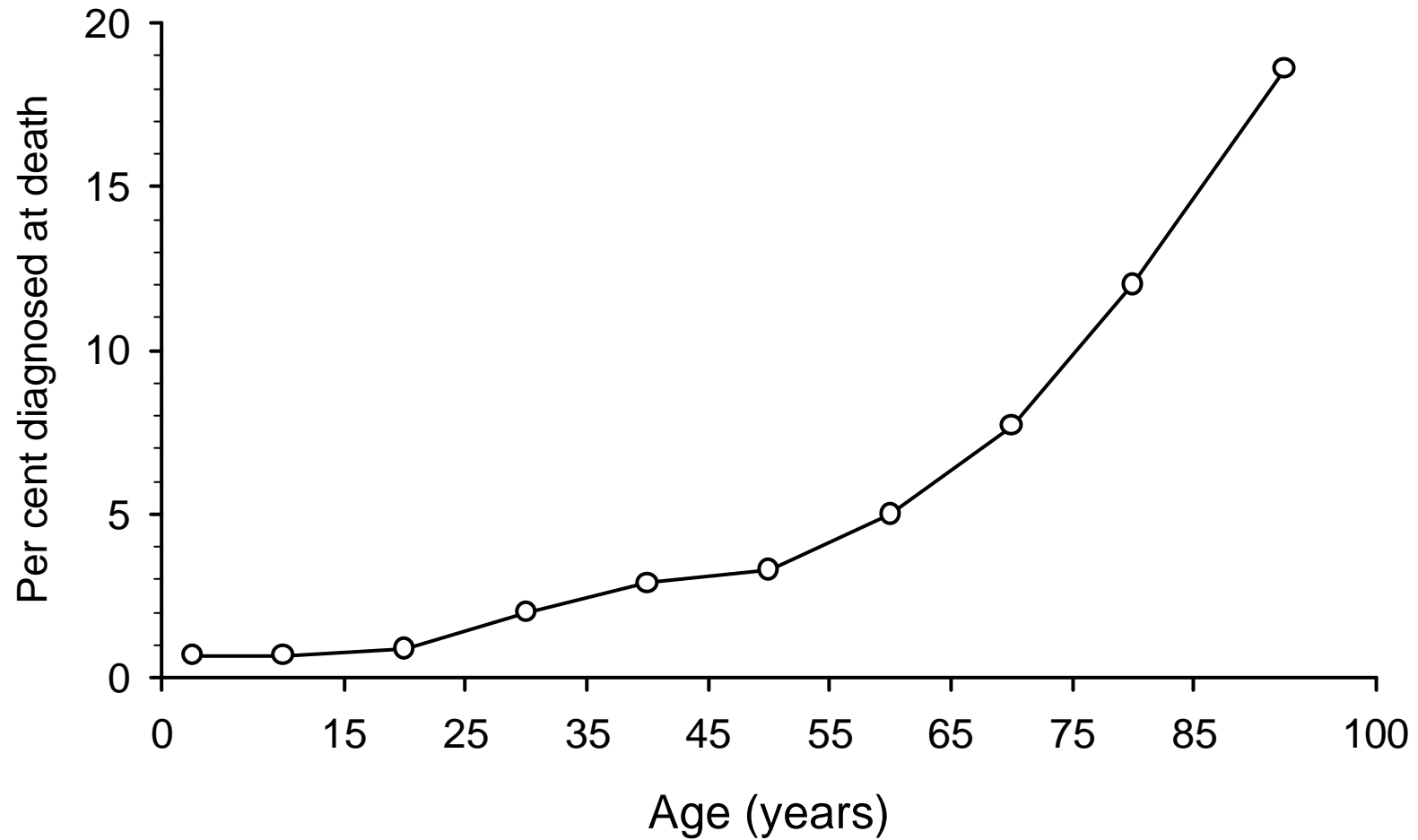


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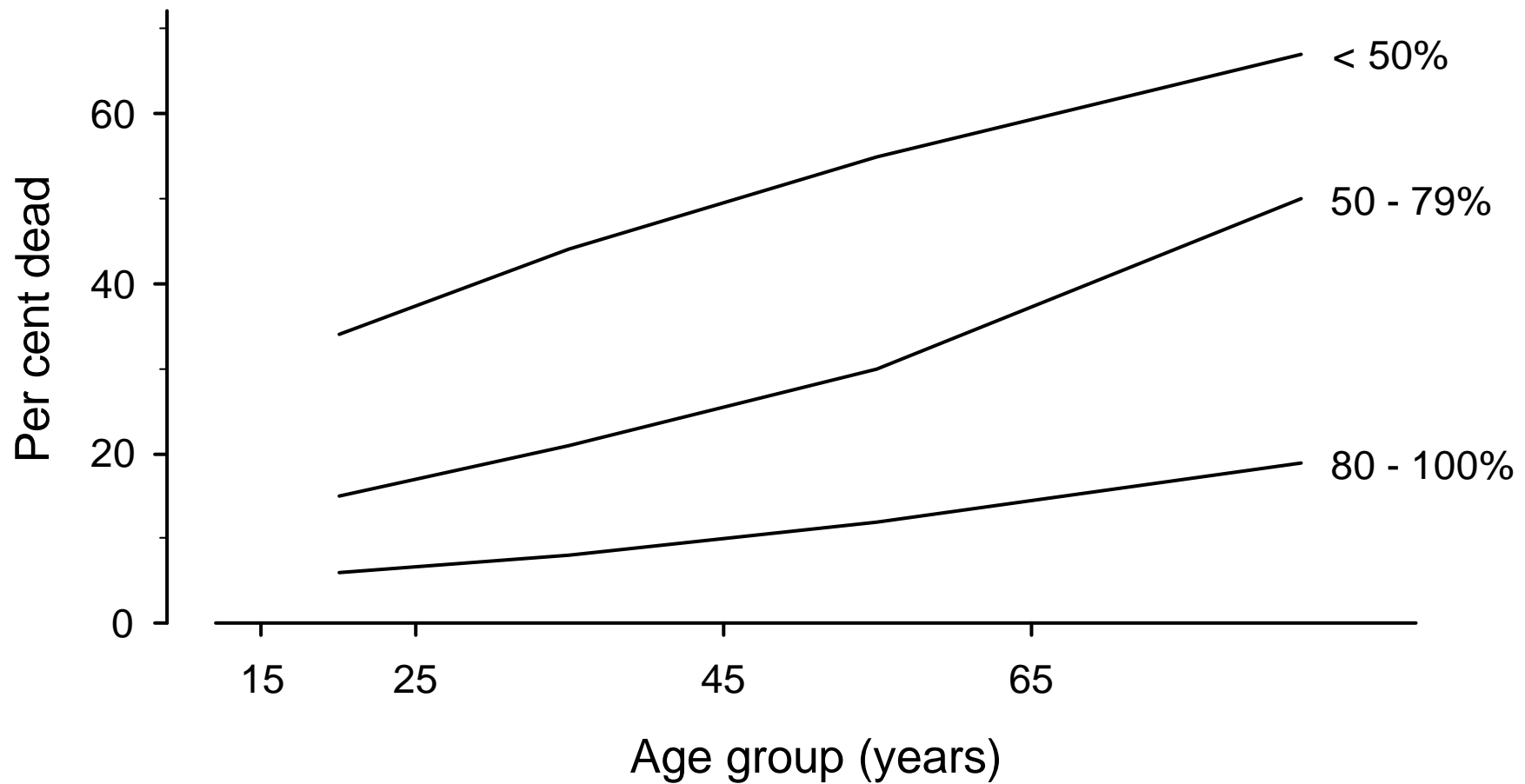
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Proportion of Tuberculosis Cases Diagnosed at Death, by Age, United States, 1985 - 1988



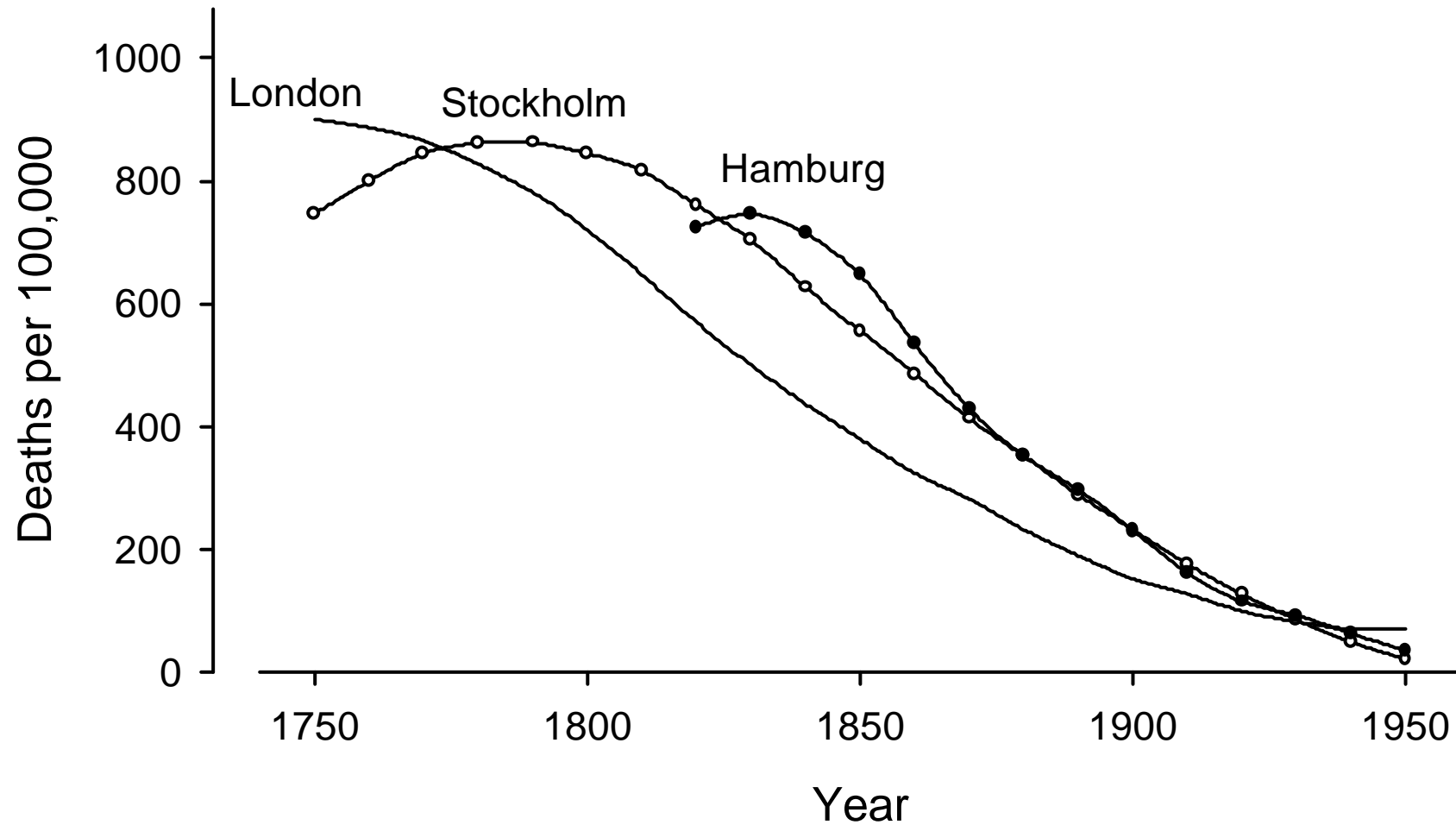
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Age-Specific Frequency of Death from Pulmonary Tuberculosis by Amount of Drugs Taken, North Arcot District, India, 1986 - 1988



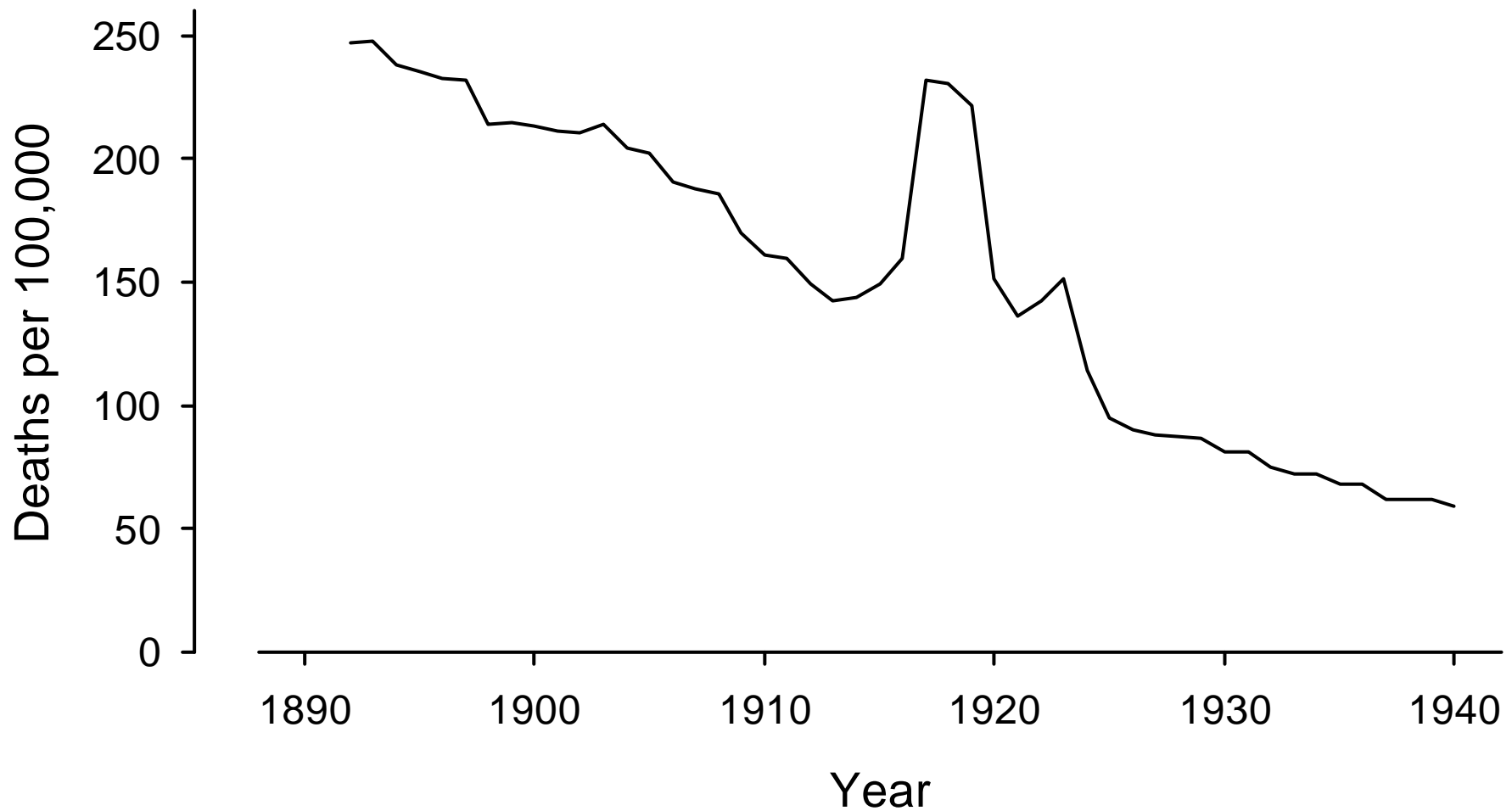
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Tuberculosis Mortality in Three European Cities, Modeled From Available Data, 1750 - 1950



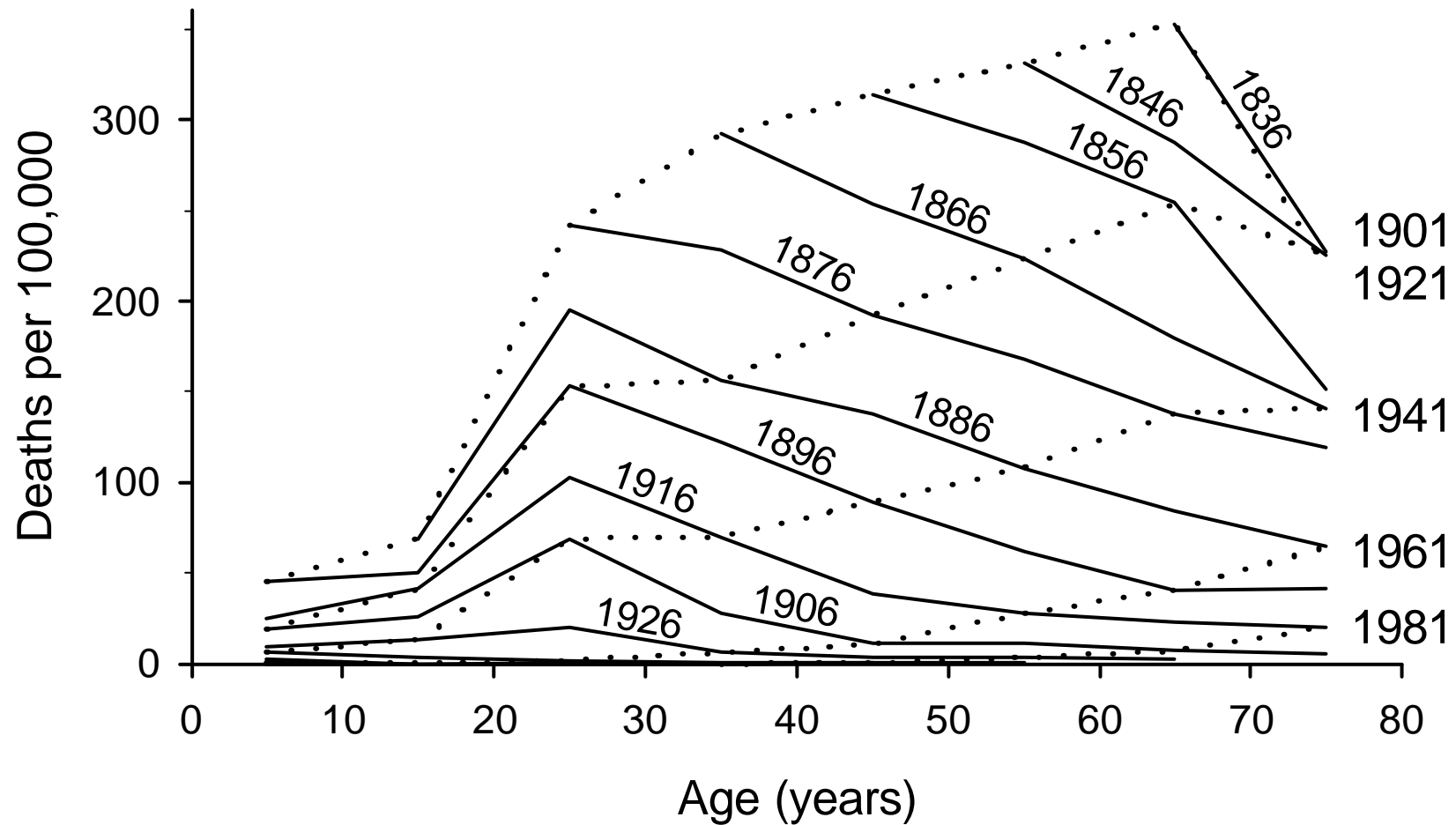
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Tuberculosis Mortality Rates in Germany, 1892 - 1940

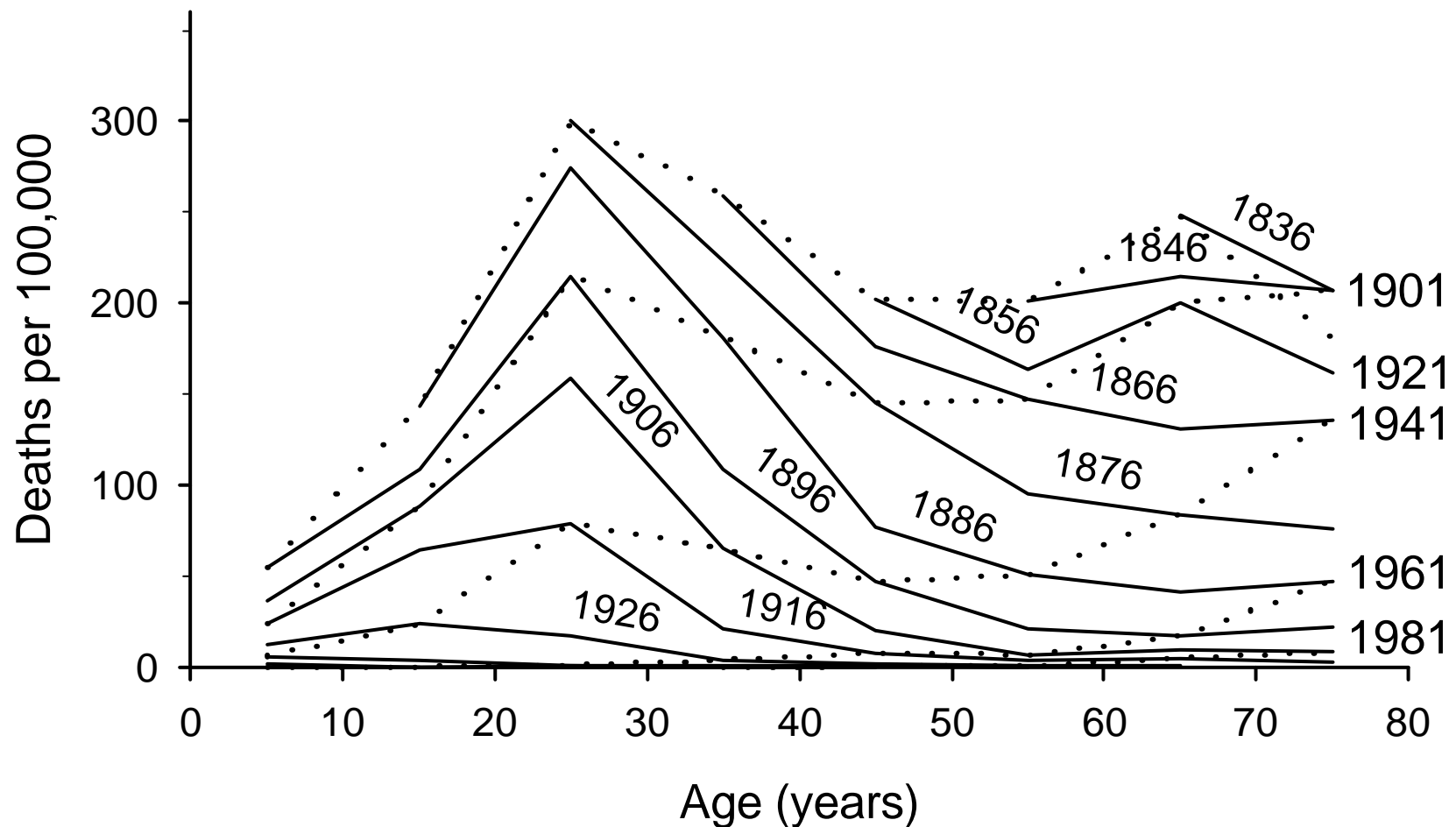


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Mortality from Respiratory Tuberculosis Among Males, Cross-Sectionally and by Birth Cohort, Switzerland



Mortality from Respiratory Tuberculosis Among Females, Cross-Sectionally and by Birth Cohort, Switzerland



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Estimated Number of Tuberculosis Deaths by Region, for the Years 1990 - 2000

