



The New Science of Aging

Genetics

Statistics

Biology

Psychology

Bioinformatics

Economy

Demography

Medicine

Engineering

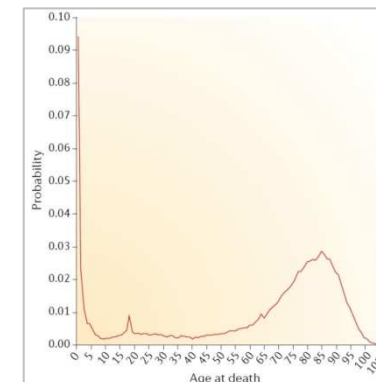
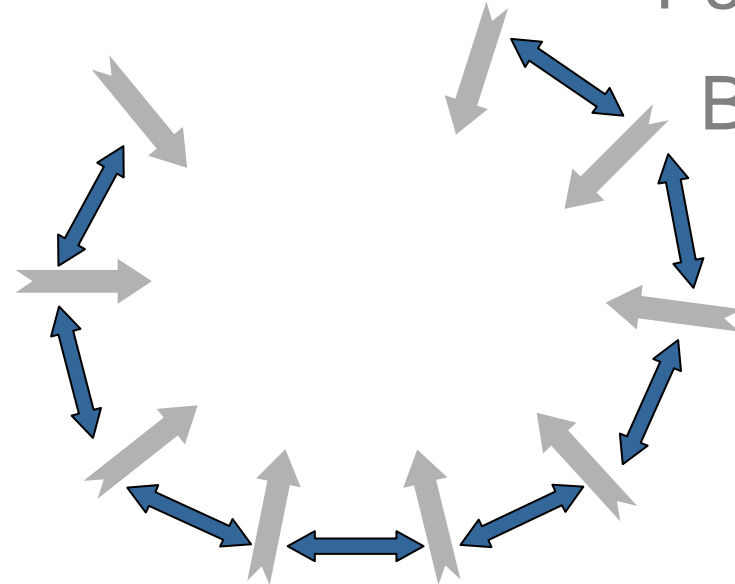
Mathematics

Politics

Computer Science

Sociology

Epidemiology





Danish Aging Research Center

Funded by the Velux Foundation



Tinna Stevnsner

AU



Kirsten Avlund

KU



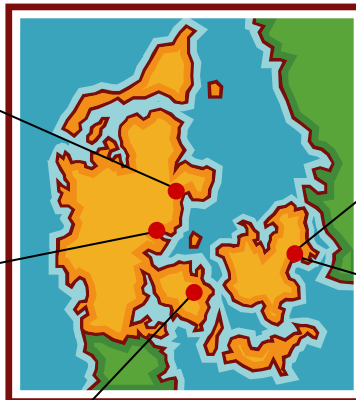
Steen Kolvraa

Vejle



Merete Osler

KU



SDU



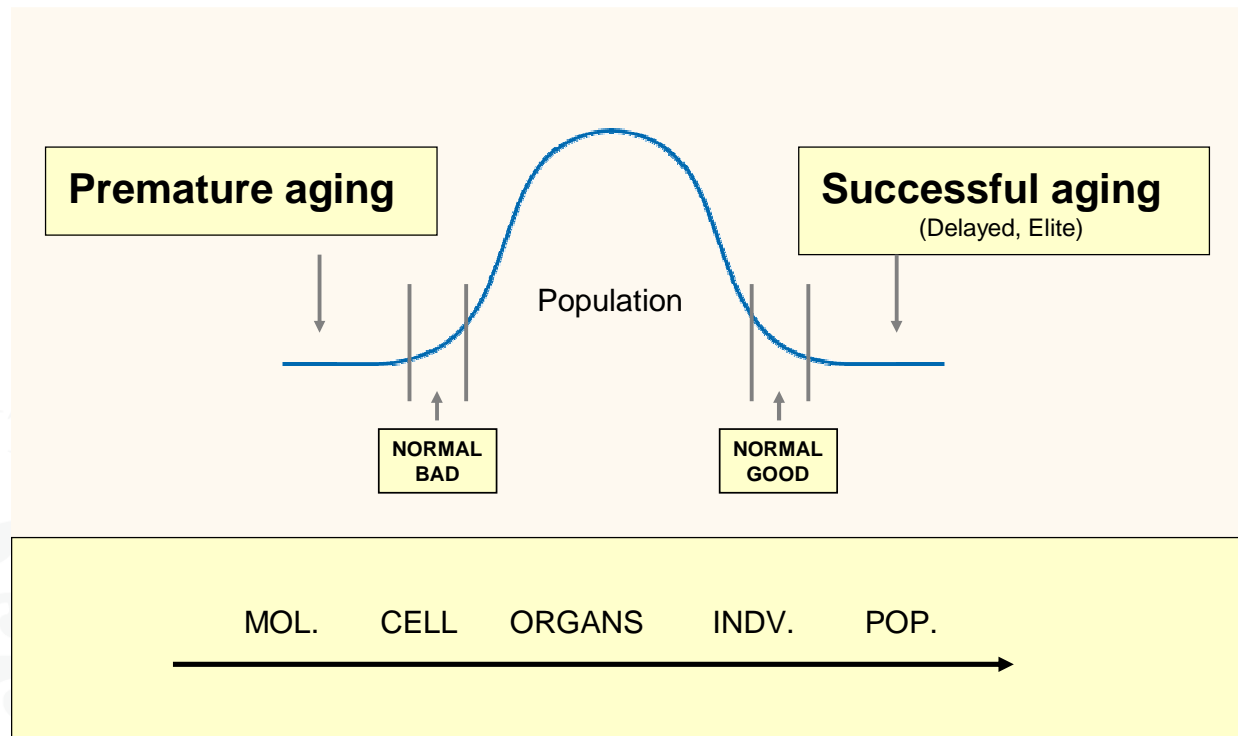
Kaare Christensen

INTERNAL ADVISORY BOARD:

Bernard Jeune, James W. Vaupel,
Vilhelm Bohr, Erik Lykke Mortensen



Danish Aging Research Center





Key topics

The plasticity of aging

Why do we age so differently?

Determinants of healthy longevity
- genetic and non-genetic





The Oldest-Old

Determinants of healthy longevity

Diet ?





The Oldest-Old

Determinants of healthy longevity

Diet ?

When ?





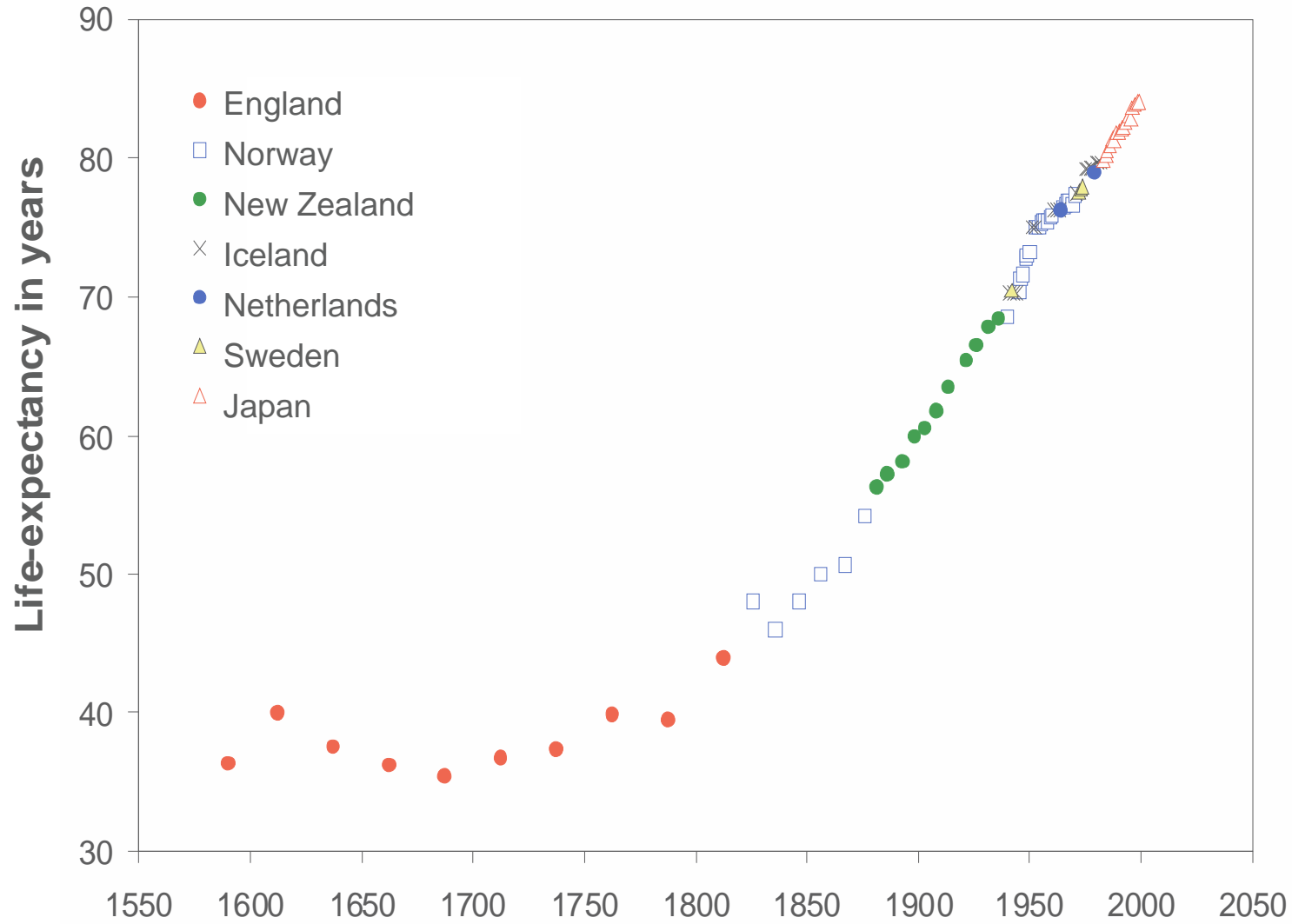
The Oldest-Old

Determinants of healthy longevity

Diet ?

When ?

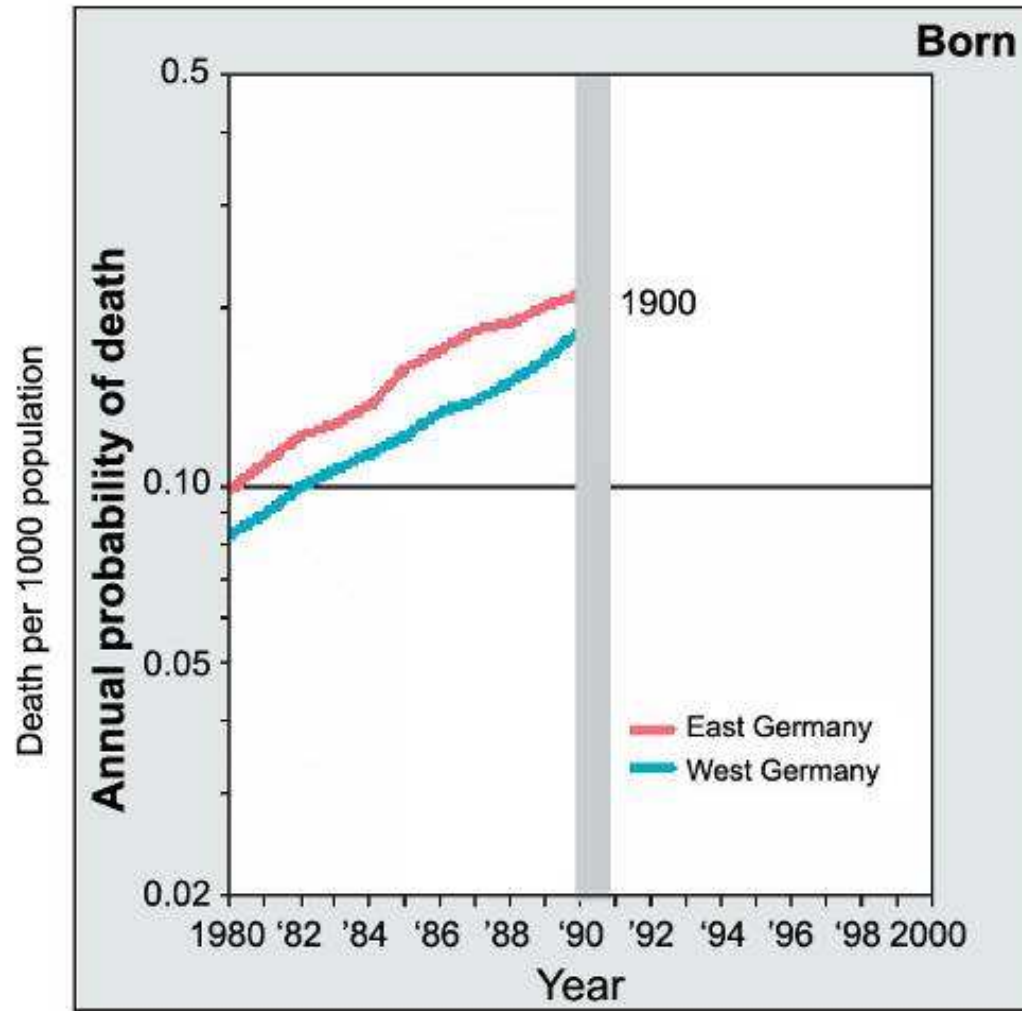
Around WWI, around WWII, now ?





Germany

1980-2000

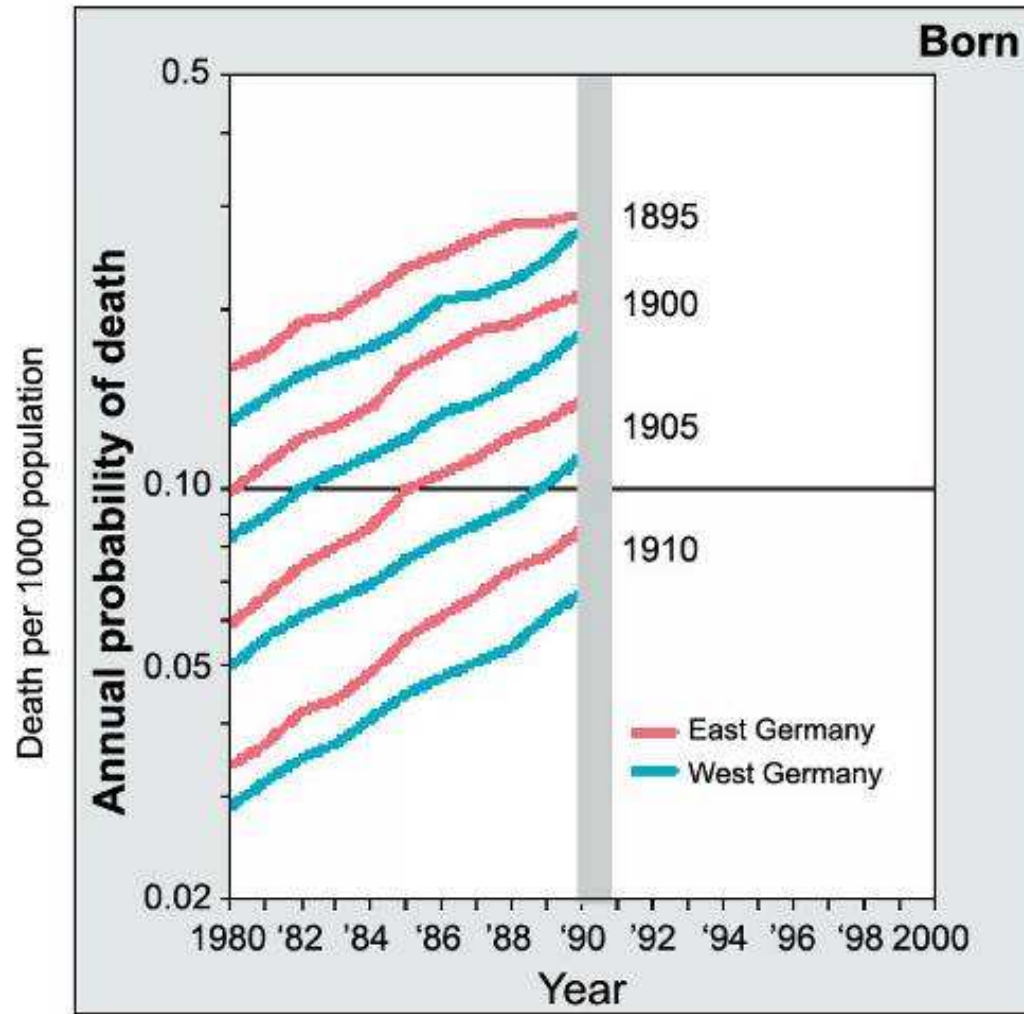


Source: Vaupel, Carey, Christensen. Science 2003



Germany

1980-2000

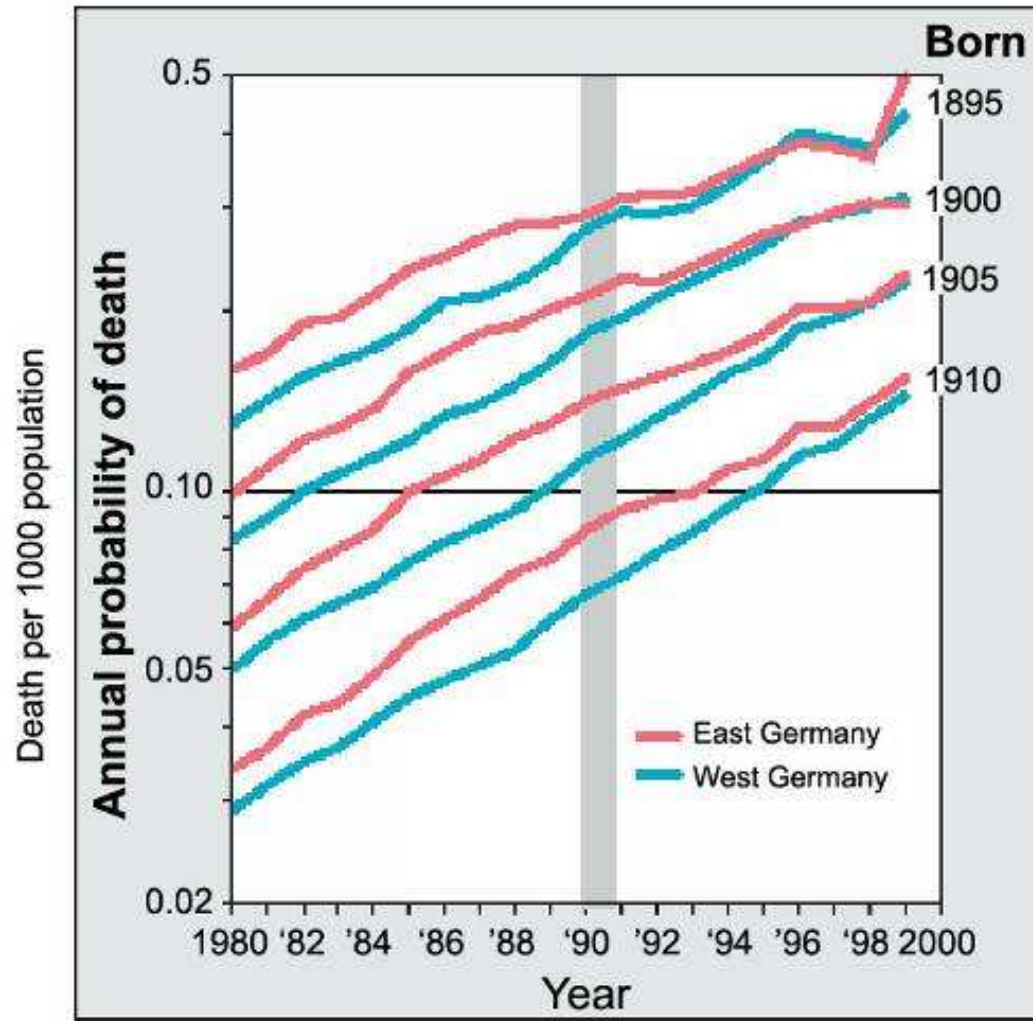


Source: Vaupel, Carey, Christensen. Science 2003



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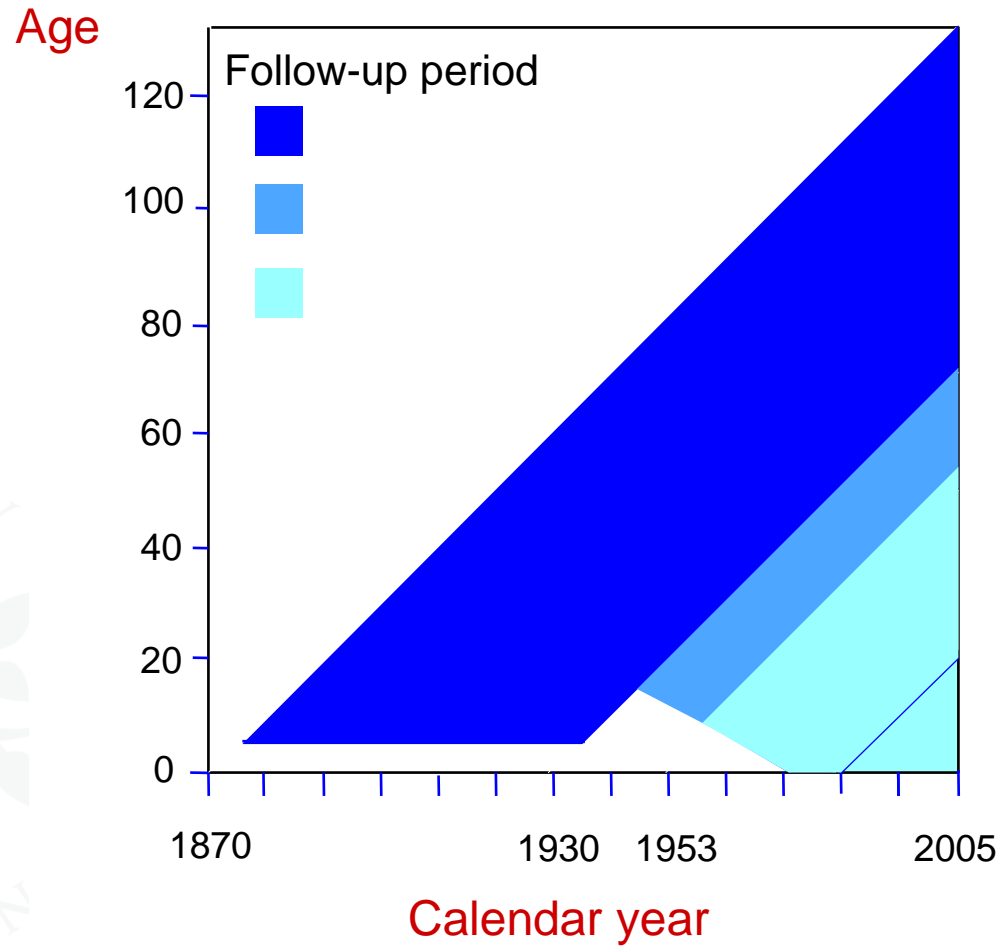


Source: Vaupel, Carey, Christensen. Science 2003





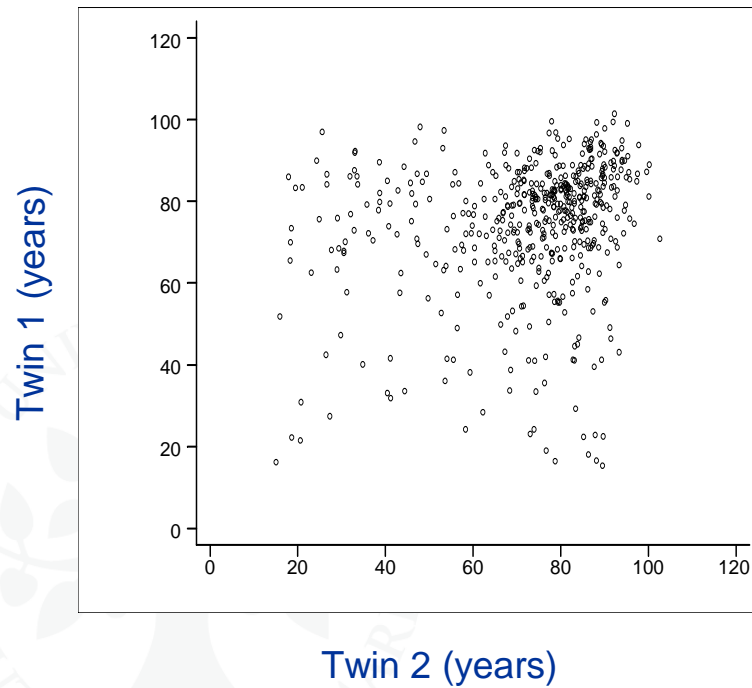
Danish Twin Registry



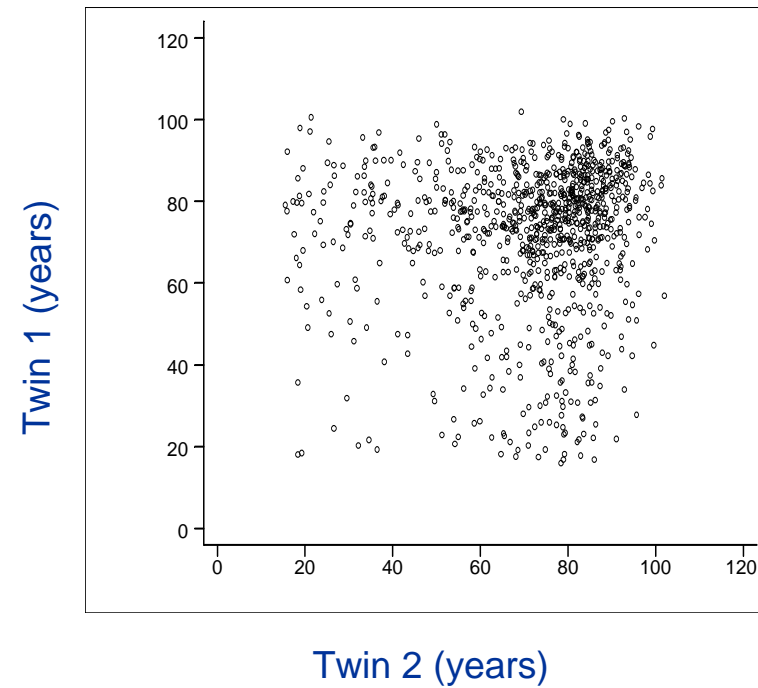


Human Co-Twin Lifespan

Monozygotic



Dizygotic





Twin Design

➤ Heritability

- Lifespan 25%
- Functioning 50%
- Alzheimer 70%
- Parkinson 5%



Diet, Cancer and Health

Study Population

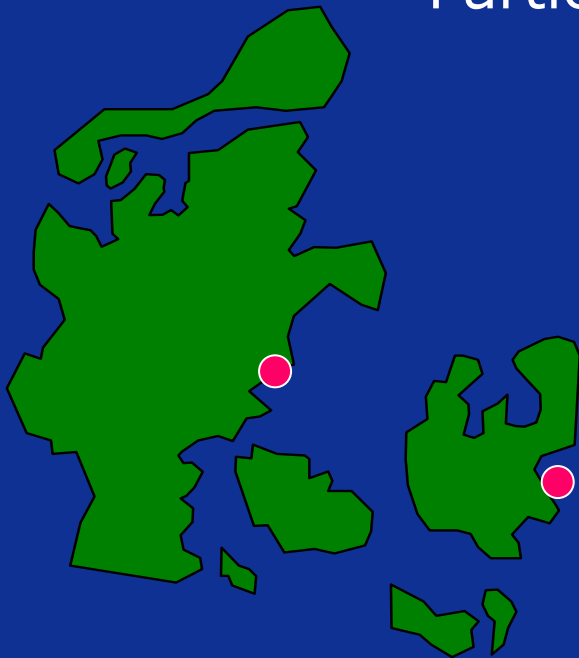
Study area: Copenhagen and Aarhus

Participants: Random sample of the
general population

57,053 men and women
50 - 64 years

No previous cancer diseases
Born in Denmark

Recruitment: 1993 - 1997



Diet, Cancer and Health

Dietary questionnaire:

- Semiquantitative food frequency questionnaire
- Usual diet previous year

196 items:

- meals
- foods
- nutritional supplements
- fat used for cooking
- cooking methods



Diet, Cancer and Health

Biological material

Blood 30 ml:

- Serum 4 x 1 ml
- Plasma 6 x 1 ml
- Buffy coat 2 x 1 ml
- Erythrocytes 2 x 1 ml
- Whole blood on filter paper

Urine:

4 x 1 ml

Adipose tissue: (app. 50 mg)

Toe nail clippings

Storage in nitrogen vapour (max. -150° C)



EPIC collaborating centres

UK:	OXFORD CAMBRIDGE
NETHERLANDS:	UTRECHT RIVM
GERMANY:	POTSDAM HEIDELBERG
FRANCE:	PARIS
ITALY:	TURIN MILAN FLORENCE NAPLES RAGUSA
SPAIN	OVIEDO SAN SEBASTIAN PAMPLONA MURCIA GRANADA
GREECE	ATHENS
SWEDEN:	UMEA MALMO
DENMARK:	AARHUS COPENHAGEN
NORWAY:	TROMSO

