

Cohort Consortia and Epidemiologic Research on Rare Cancers

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Overview

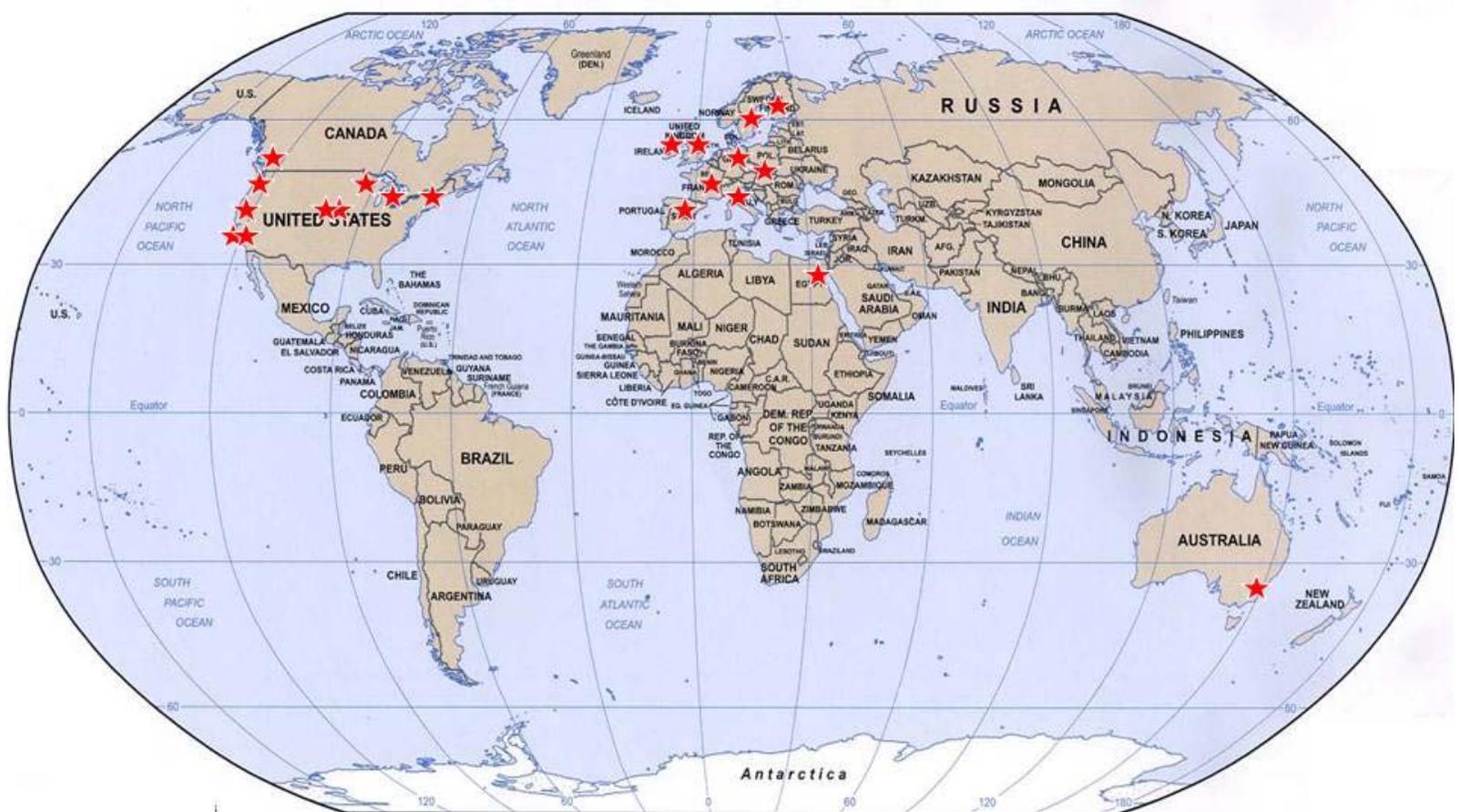
- Why cohort studies for rare tumors?
 - Case-control Consortia most typical
 - Exception: highly lethal tumors
 - Exception: pre-diagnostic data essential
- Cohort Consortium
 - About the consortium
 - Pancreatic cancer (PanScan)
 - Multiple Myeloma
- Lessons from related consortia
 - Connect to case-control and family studies
 - Need clear communication and agreements
 - Learn as we go

Consortial Approaches to Rare Cancers

- Familial cancer registry consortia
- Case-control consortia
- Cohort Consortia

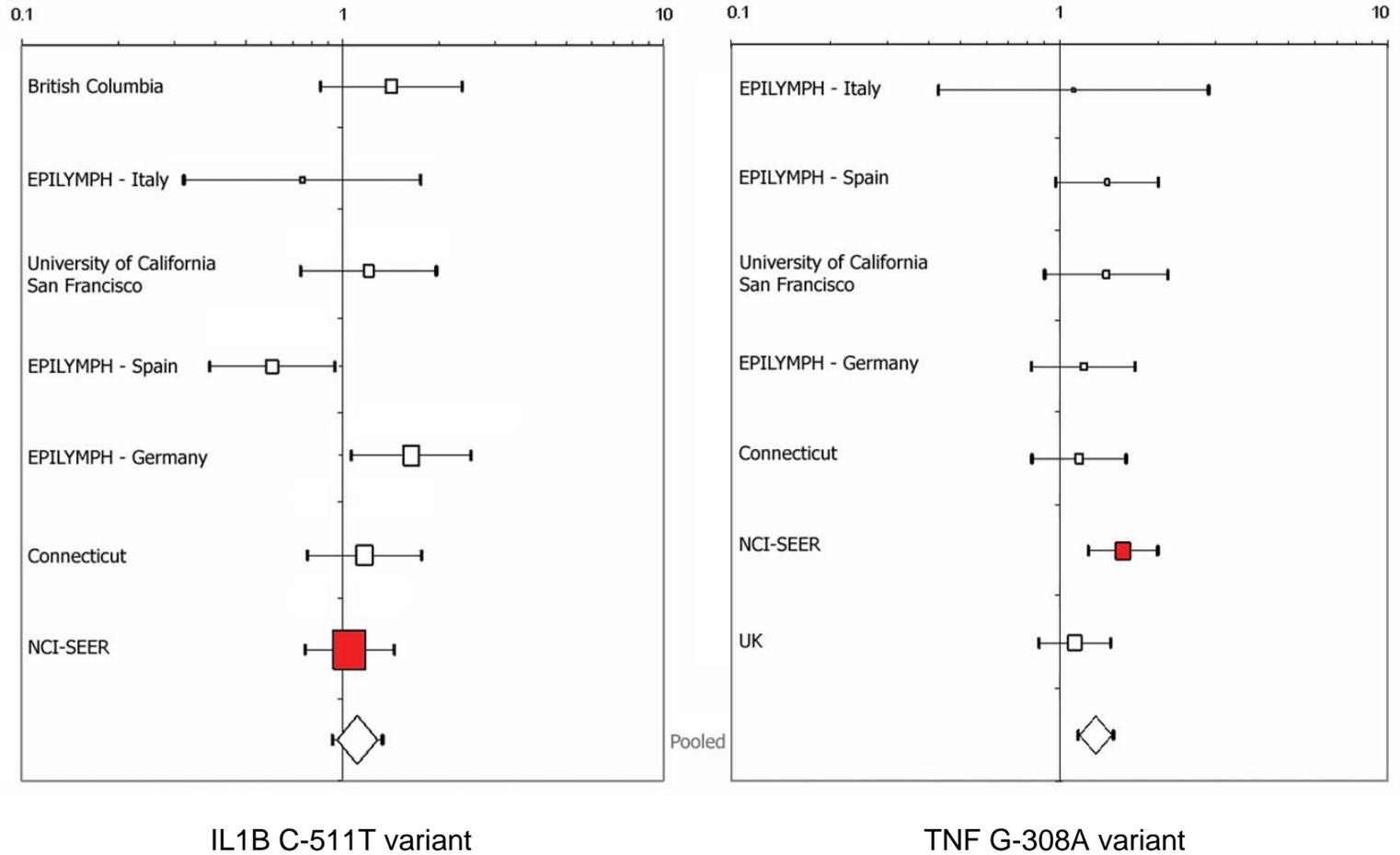
- Genome-wide association studies
- Biomarker studies
- Questionnaire studies

International Lymphoma Epidemiology Consortium



★ Participating centers

InterLymph – IL1B C-511T and TNF G-308A



Rothman N, Skibola CF, Wang SS et al. Genetic variation in TNF and IL10 and risk of non-Hodgkin lymphoma: a report from the InterLymph Consortium. *Lancet Oncol.* 2006 Jan;7(1):27-38.

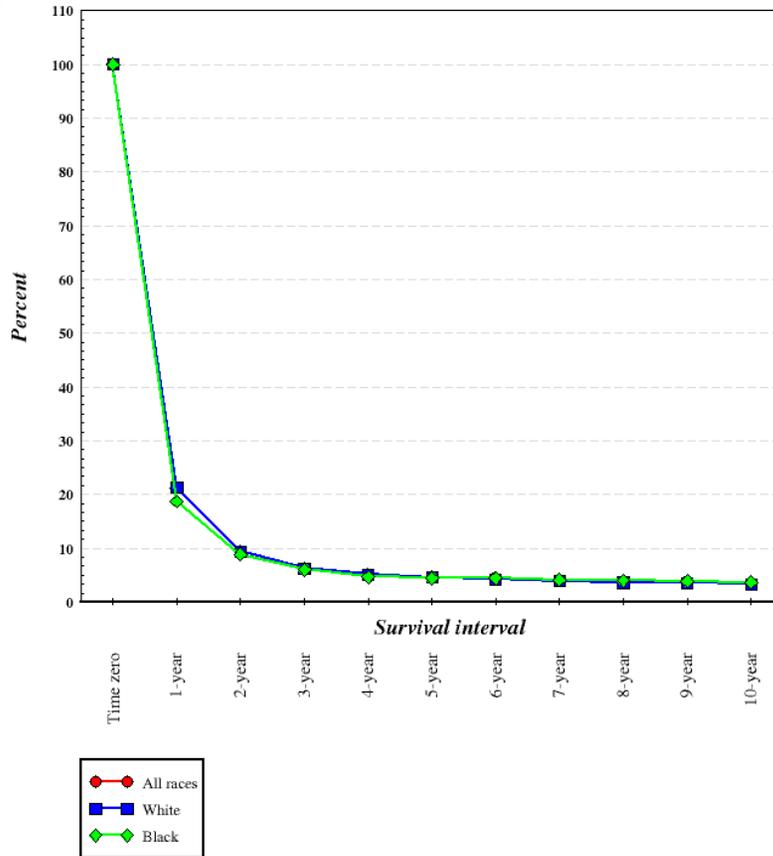
Interlymph – other factors

- Alcohol
- Smoking
- Hepatitis C virus
- Hair dye use
- Sunlight exposure
- Autoimmune conditions

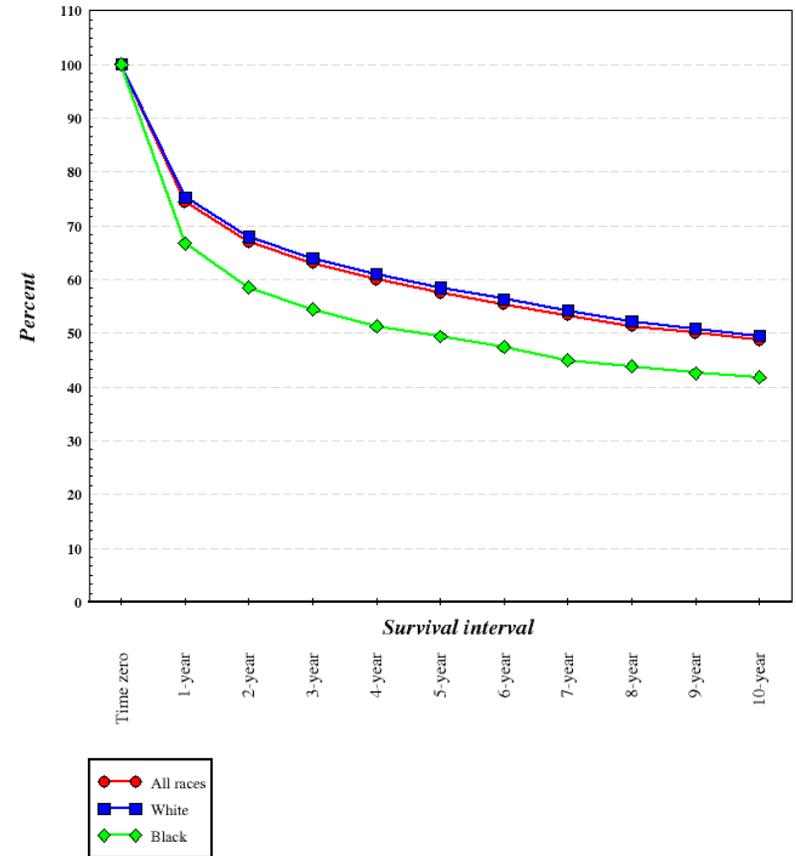
Funding – creative and varied

- Meeting support EGRP, DCEG, ORD, Lymphoma and Leukemia foundations
- R -03 funded
- European Union small grants funded
- Australian small grants funded
- R-01 submitted
- Mostly: informal

Five Year Relative Survival in 2 Cancers



Pancreatic Cancer



Non-Hodgkin Lymphoma

Pre-diagnostic Data Essential

- Plasma levels of organochlorines
- Serum levels of vitamin D
- Reports of risky or embarrassing behavior
- Clinical conditions that can be confused with cancer
- Screening behaviors

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The Cohort Consortium

31 cohorts, more than 2 million individuals (more than 1 million with DNA collected)

BPC3

Cohorts: ATBC, CPS II, EPIC, HPFS, MEC, NHS, PHS, PLCO, WHS

Website:

<http://epi.grants.cancer.gov/BPC3>

CGEMS

Scan: PLCO, NHS

Replication: ATBC, CPS II, EPIC, HPFS, MEC, PHS, WHS, WHI

Data Portal:

<https://caintegrator.nci.nih.gov/cgems/>

PanScan

Scan: ATBC, CLUE II, CPS II, EPIC, HPFS, NHS, NYUWHS, PHS, PLCO, SMWHS, WHI, WHS

Replication: Pancreatic Cancer Case-Control Consortium (PANC4)

Website:

<http://epi.grants.cancer.gov/PanScan/>

Multiple Myeloma

Coming soon...

Current Members of the Cohort Consortium

31 Cohorts Total

NCI Extramural Funded
Black Women's Health Study (BWS)
California Teachers Study
Cancer Prevention Study II (CPS-II)
CLUE Cohort (CLUE I-II)
EARTH Cohort
European Prospective Investigation in Cancer and Nutrition (EPIC)
Health Professionals Follow-up Study (HPFS)
Iowa Women's Health Study
Multiethnic Cohort (MEC)
Nurses Health Study I (NHS I)
Nurses Health Study II (NHS II)
New York University Women's Health Study (NYUWHS)
Physicians' Health Study I (PHS-I)
Physicians Health Study II (PHS-II)
Seventh-day Adventist Cohort Study
Shanghai Men's Health Study (SMHS)
Shanghai Women's Health Study (SWHS)
Singapore Chinese Health Study
Southern Community Cohort
Vitamins and Lifestyle Study (VITAL)

NCI Intramural Funded
Agricultural Health Study
Alpha-Tocopherol Beta-Carotene Cancer Prevention Study (ATBC)
NIH-AARP Diet and Health Study
Nutrition Intervention Trials - Linxian
Prostate, Lung, Colorectal and Ovarian (PLCO) Cancer Screening Trial

Funded by Other Sources
Cohort of Swedish Men
Mayo Mammography Health Study (MMHS)
Swedish Mammography Cohort
The Sister Study
Women's Health Initiative (WHI)
Women's Health Study (WHS)

PanScan Investigators Meeting: November 2006

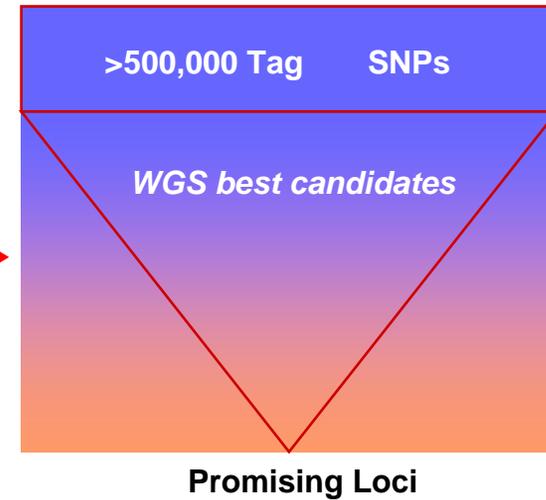


PanScan Replication Strategy

Validation and replication strategy for PanScan

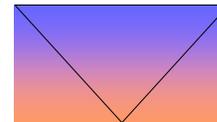
PanScan , initial study
 1200 cases / 1200 controls
 (100% cohort)

PanScan , validation study
 1100 cases/1100 controls
 (Cohorts / Mayo Clinic case)

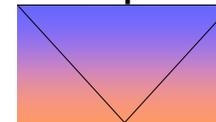


WGS best candidates

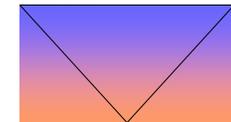
Proposed replication studies



Proposed follow-up study
 Familial pancreatic cancer registry consortium (PACGENE)
 500 ca / 500 co



Pancreatic cancer case-control consortium (PANC4)
 400 ca / 400 co



Possible replication study Western Consortium

Related Analyses on Pancreatic Cancer Risk

- Tobacco
- Family History
- Diabetes
- BMI
- Alcohol
- Others

Funding varied and creative

- Modest supplements to ongoing grants
- InterAgency transfer NCI to NHLBI
- Intramural support for 2 NCI cohorts
- Core Genotyping Facility, NCI

Multiple Myeloma in Cohorts

- Multiple cohorts in the consortium
- R01 supported (Colditz PI)
- SNPs in pathways of interest
- Close liaison with multiple myeloma case-control consortium (IMMC)
- Expected beginning in 2007

Lessons from related consortia

- Connect to case-control and family studies
 - Boffetta et al., CEBP 2007
- Need clear communication and agreements
 - Communication portals → efficiency
 - Weekly staff calls and monthly steering calls
 - Current protocol available to all
 - Project tracking critical
 - Authorship and roles explicit
- Learn as we go!