

Cancer survivors - New challenges for the oncologist to deal with

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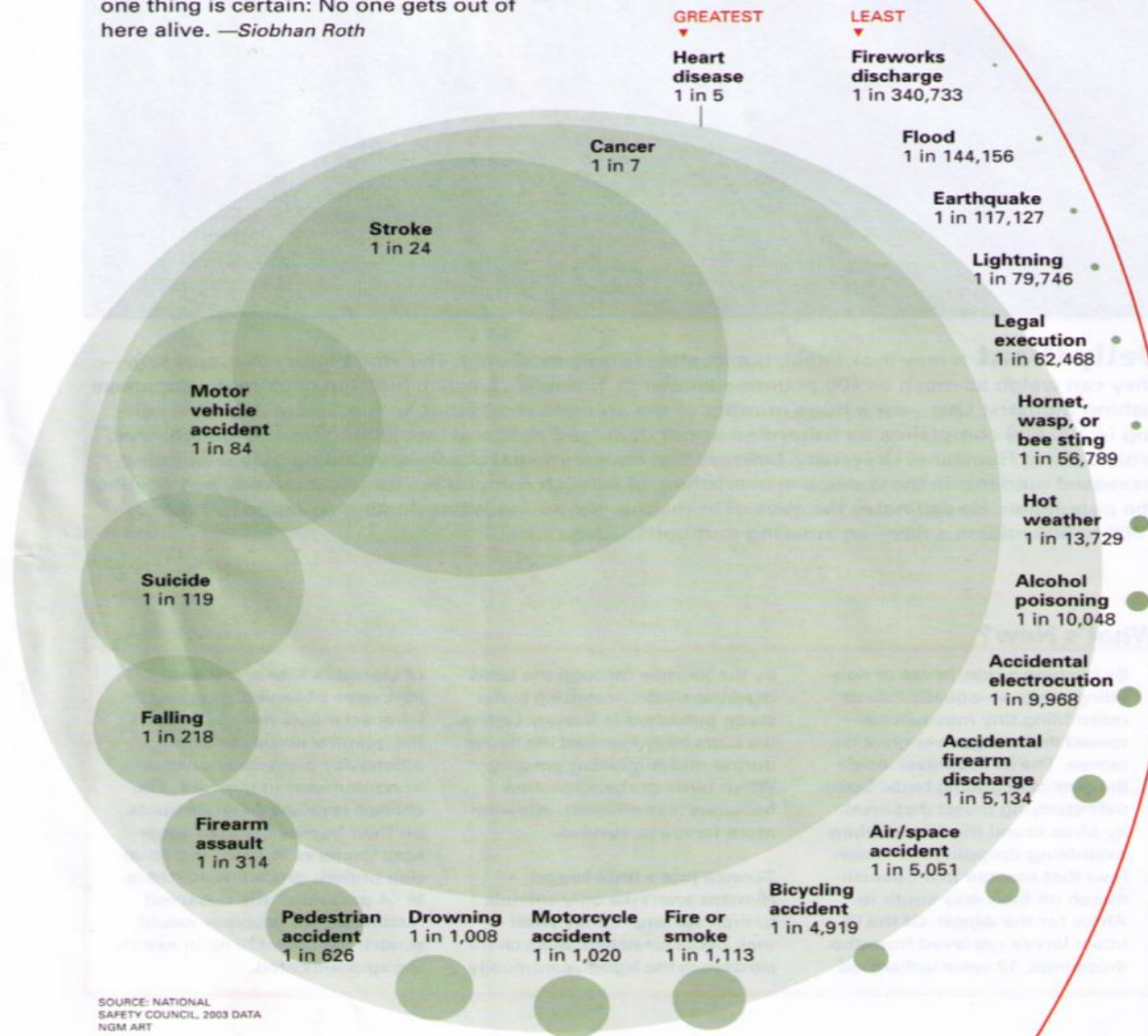
Today's menu

- Epidemiology
- Few cases - many problems
- Highlight just on the most important ones
- How can we might tackle it
- Summary

Ways to Go

When and how death will arrive can rarely be predicted, but statistics reveal what holds the greatest chance of ending a life. Riding a motorcycle, for example, is far riskier than playing with fireworks, statistically speaking. This chart shows what the lifetime probabilities are of a U.S. resident dying in a relatively common event, such as a pedestrian accident, or a less common but larger scale catastrophe, such as an earthquake. No matter what the cause, one thing is certain: No one gets out of here alive. —Siobhan Roth

Total odds of dying, any cause
1 in 1
(100%)

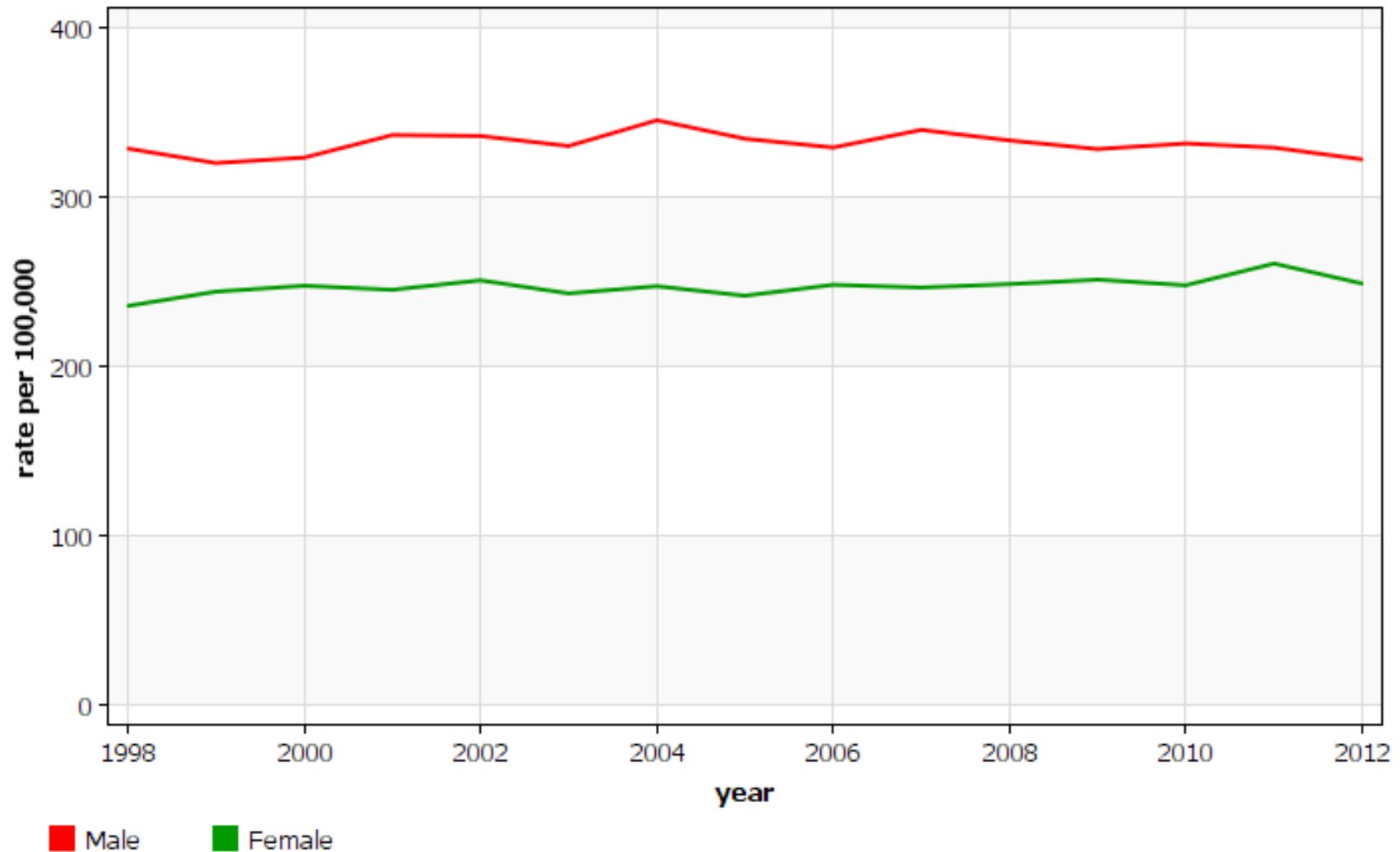


SOURCE: NATIONAL
SAFETY COUNCIL, 2003 DATA
NGM ART

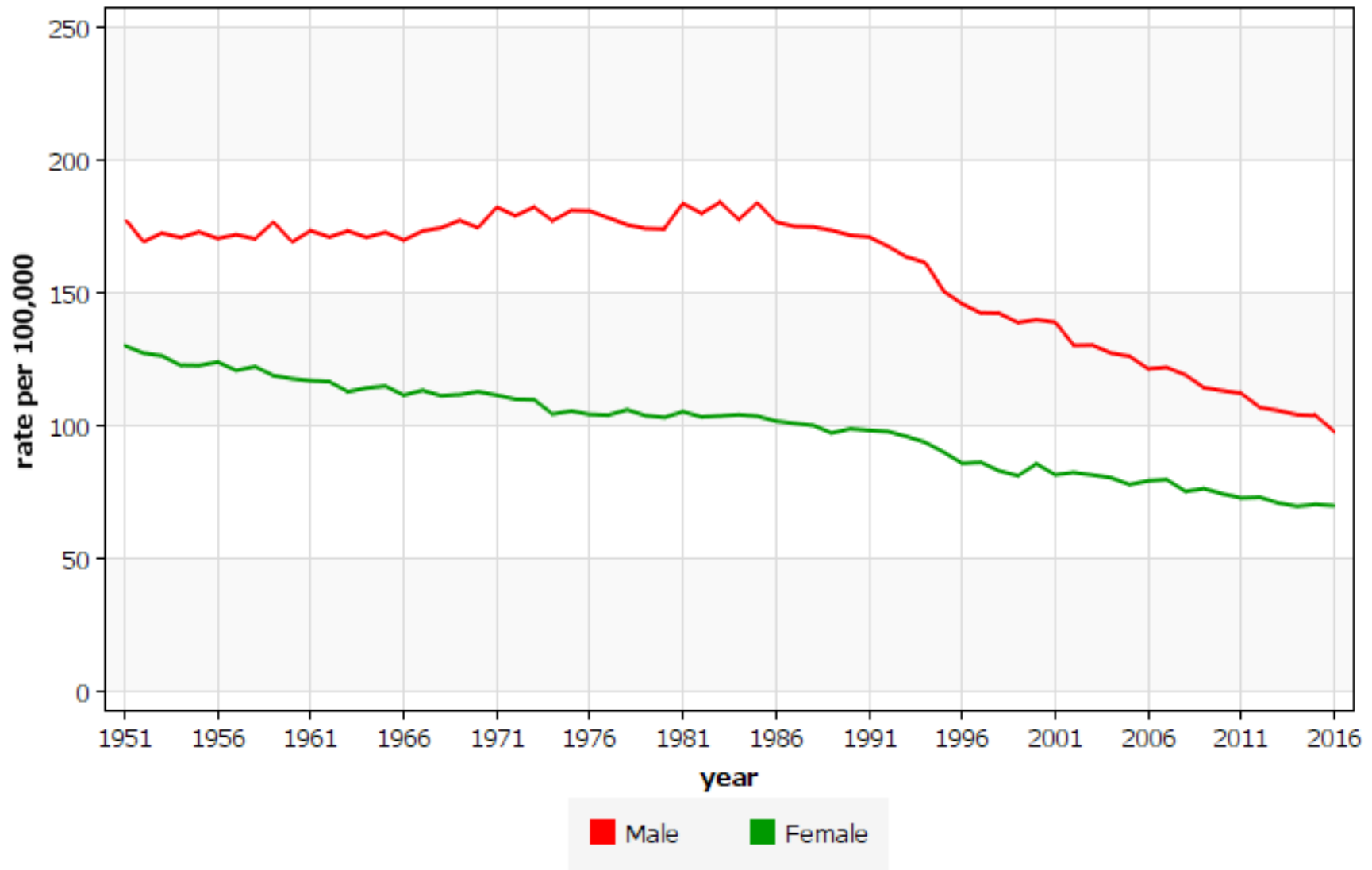
Cancer

is the second most frequent cause of death after cardiovascular diseases in high-income countries

Age Standardized Cancer Incidence in Switzerland

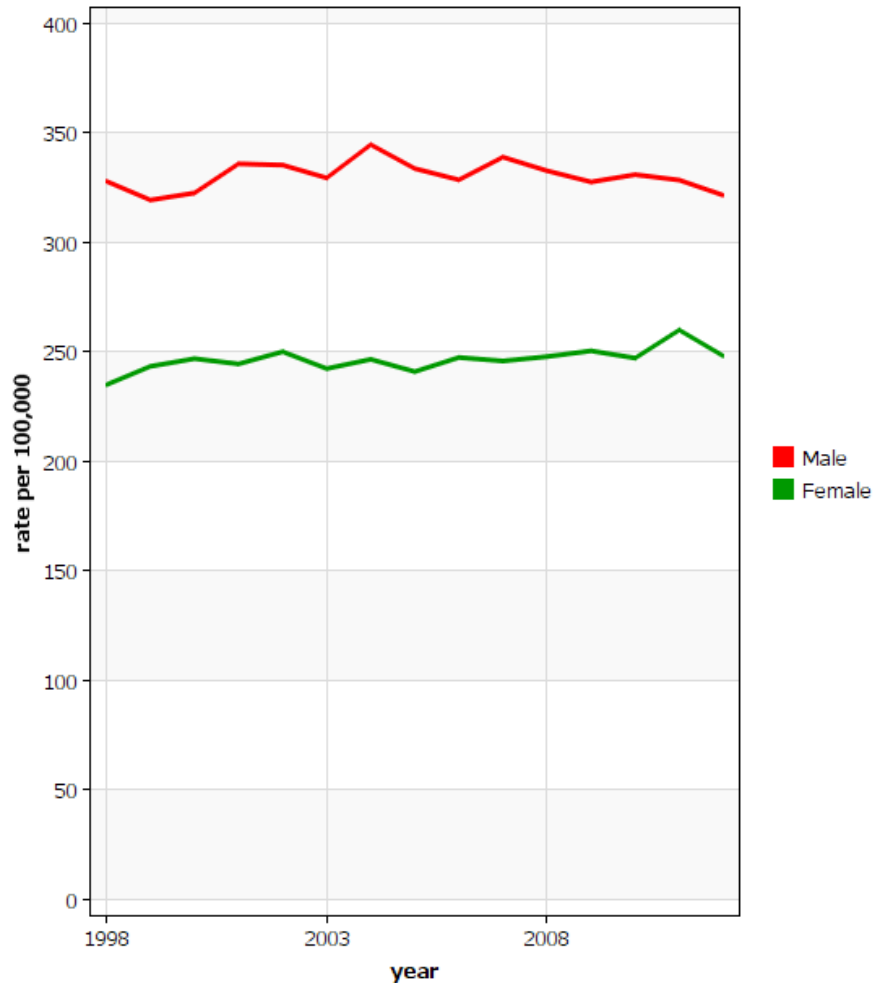


Age Standardized Cancer Mortality in Switzerland

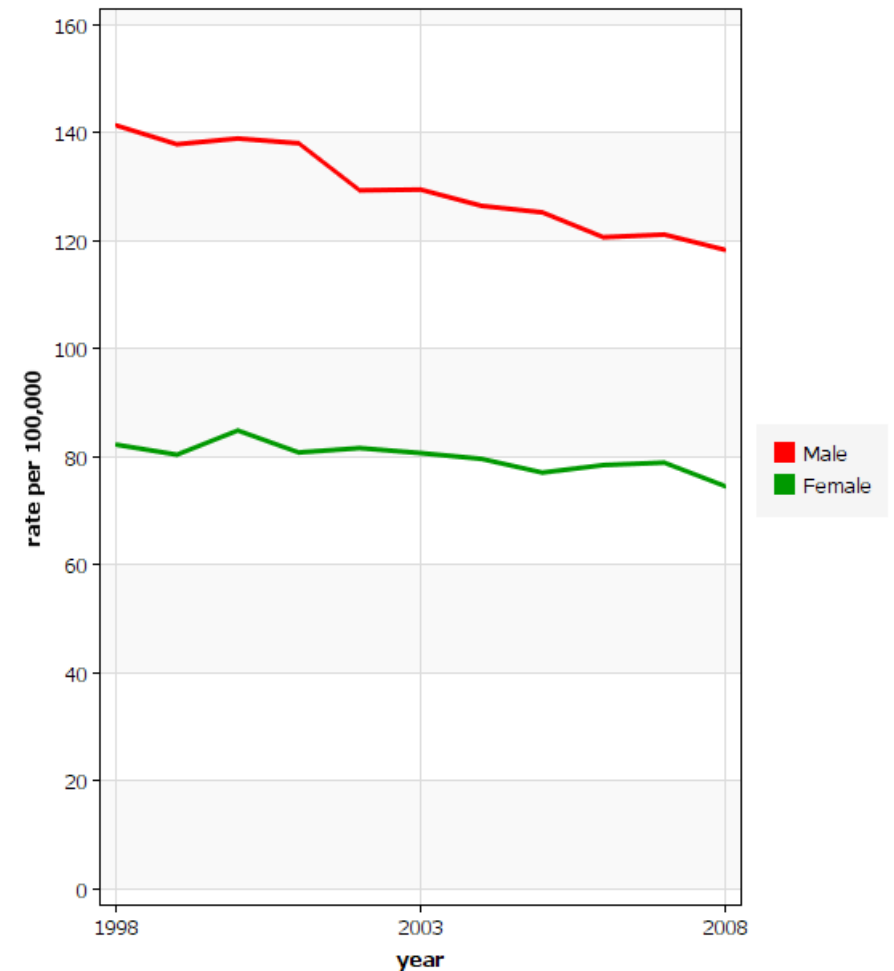


Age Standardized Rates in Switzerland

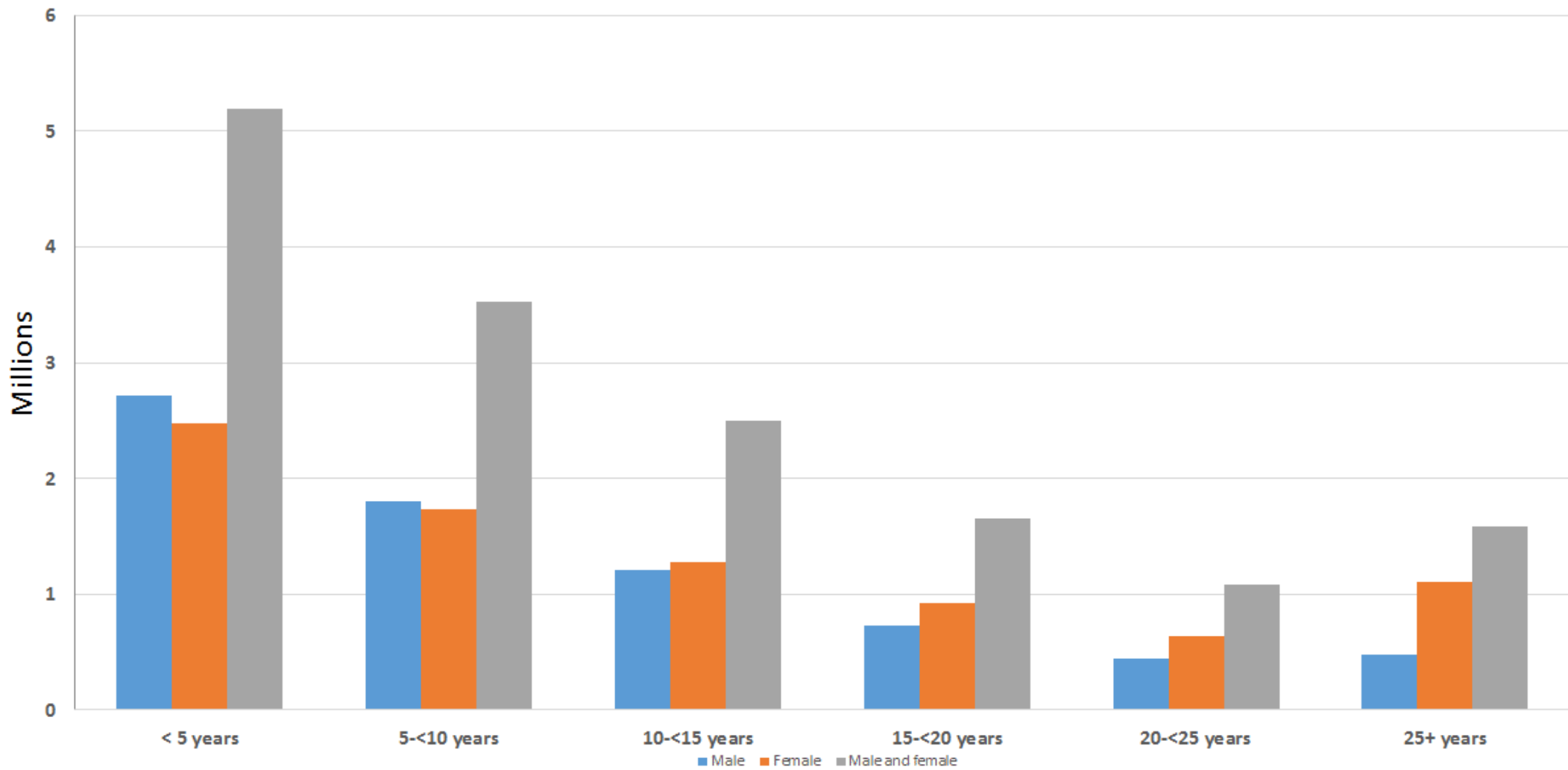
Cancer Incidence



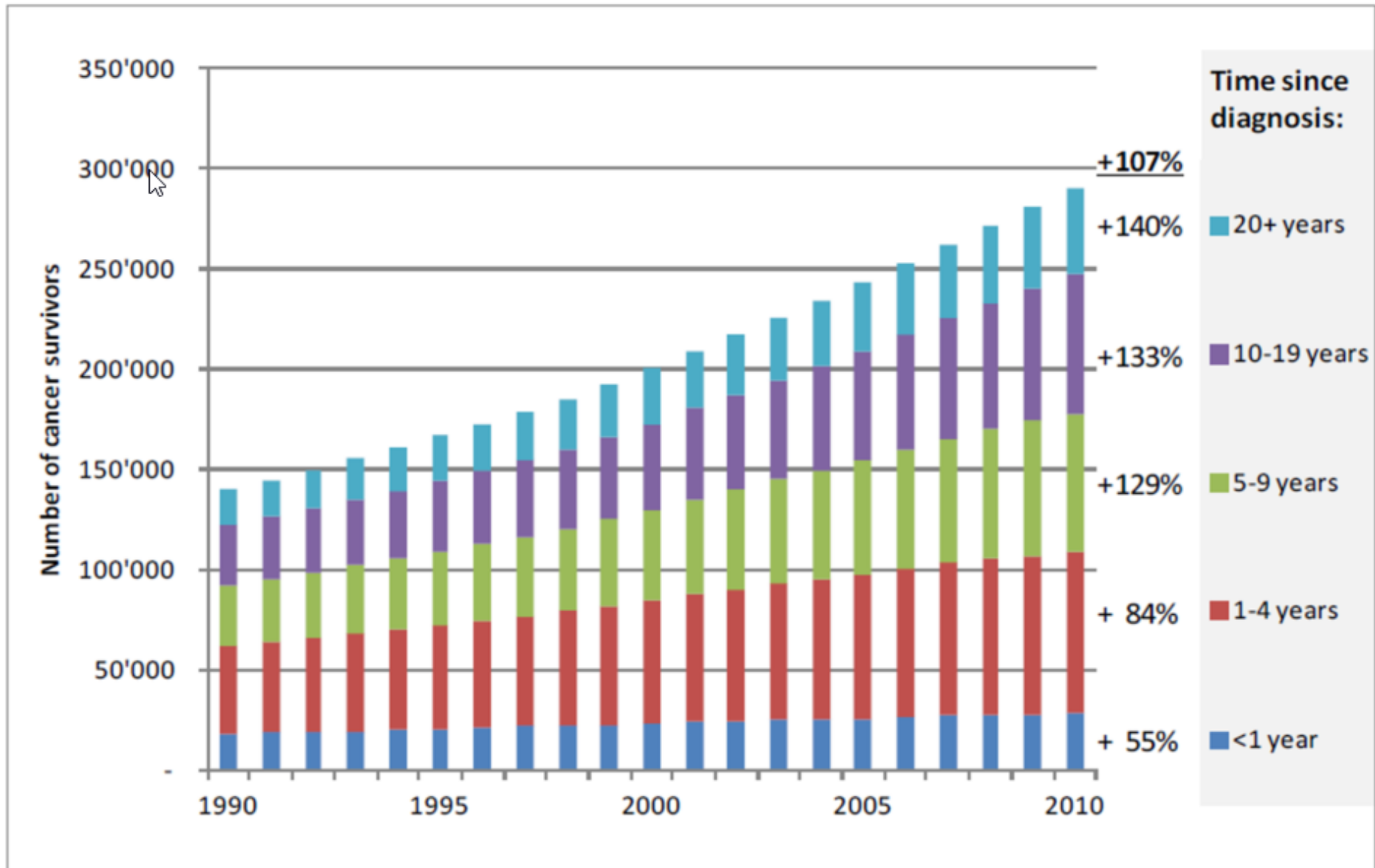
Cancer Mortality



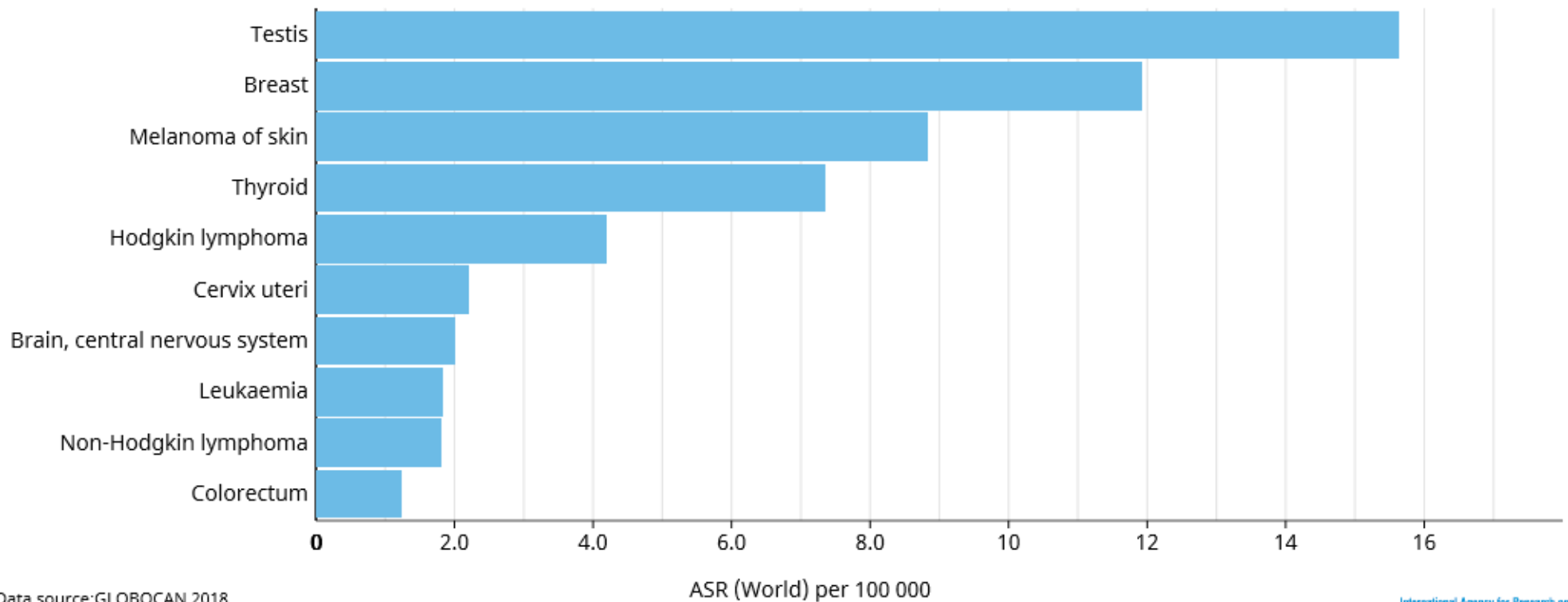
Estimated Number of Cancer Survivors in the U.S., by Years Since Diagnosis



Prevalence of Cancer Survivors CH

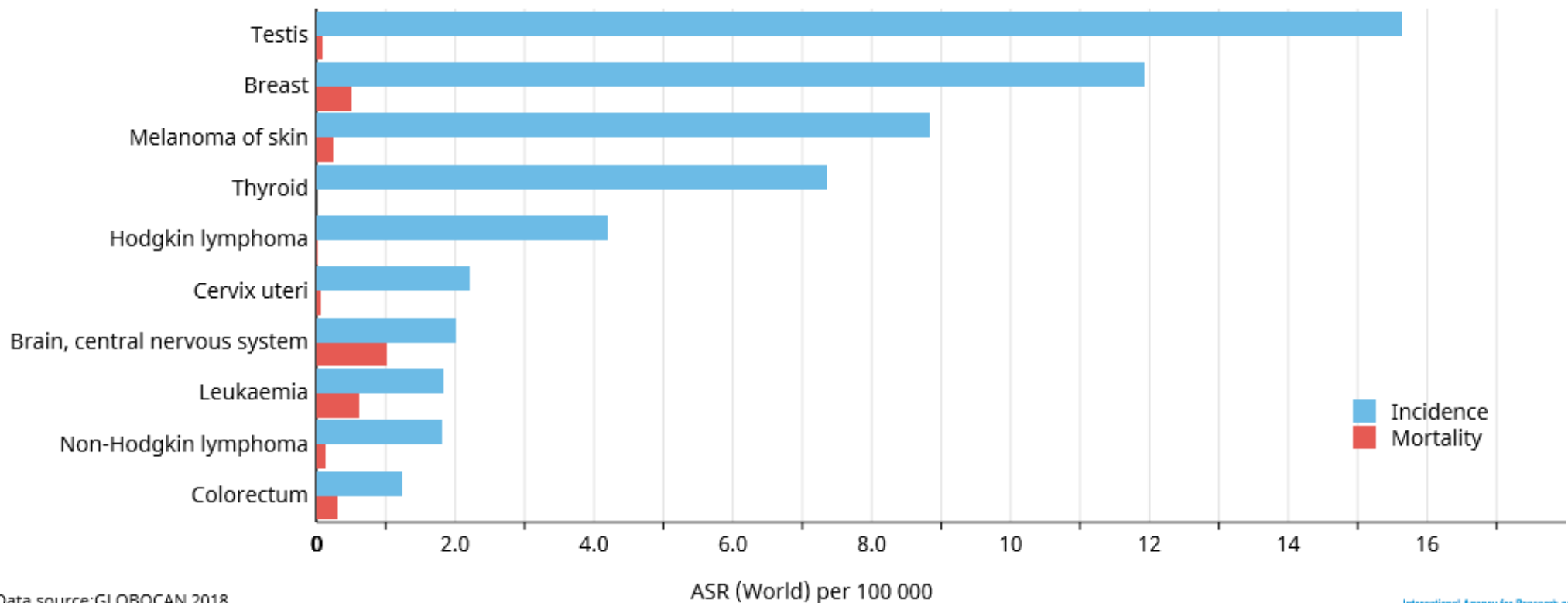


Age Standardized Cancer Incidence in Young Adults 15-34 years in Switzerland



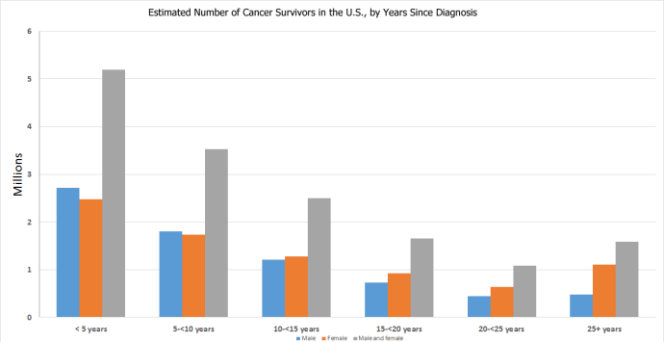
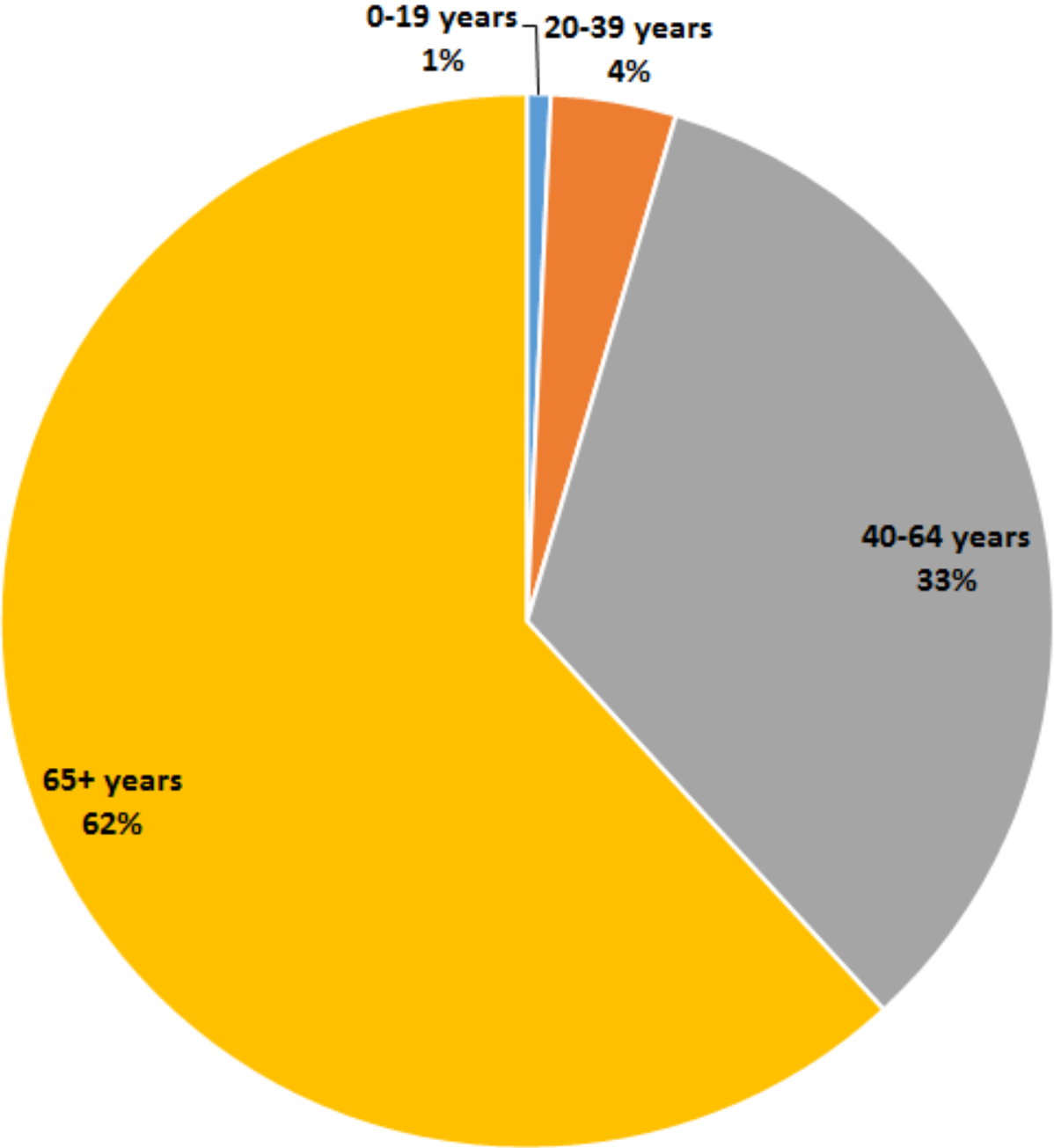
Data source: GLOBOCAN 2018
Graph production: Global Cancer Observatory (<http://gco.iarc.fr/>)
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Age Standardized Cancer Incidence & Mortality in Young Adults 15-34 years in Switzerland



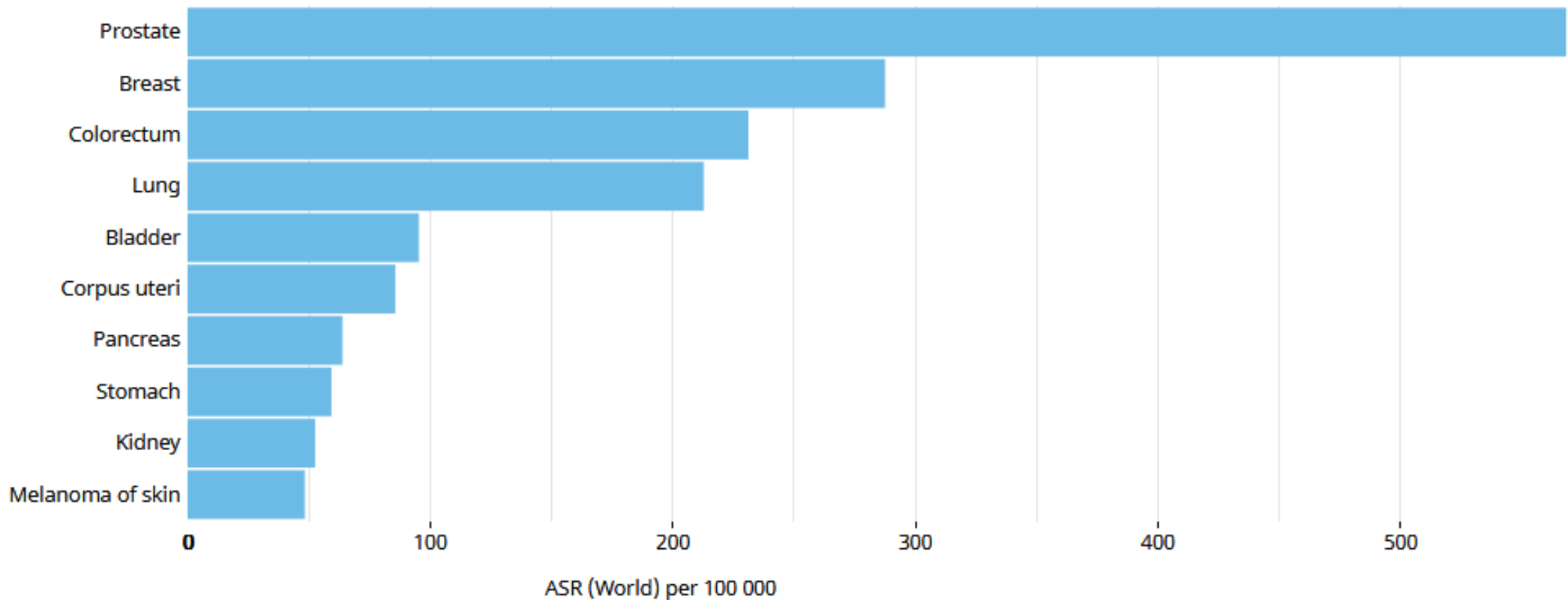
Data source: GLOBOCAN 2018
Graph production: Global Cancer Observatory (<http://gco.iarc.fr/>)
© International Agency for Research on Cancer 2019

Estimated Number of Cancer Survivors in the U.S., by Current Age

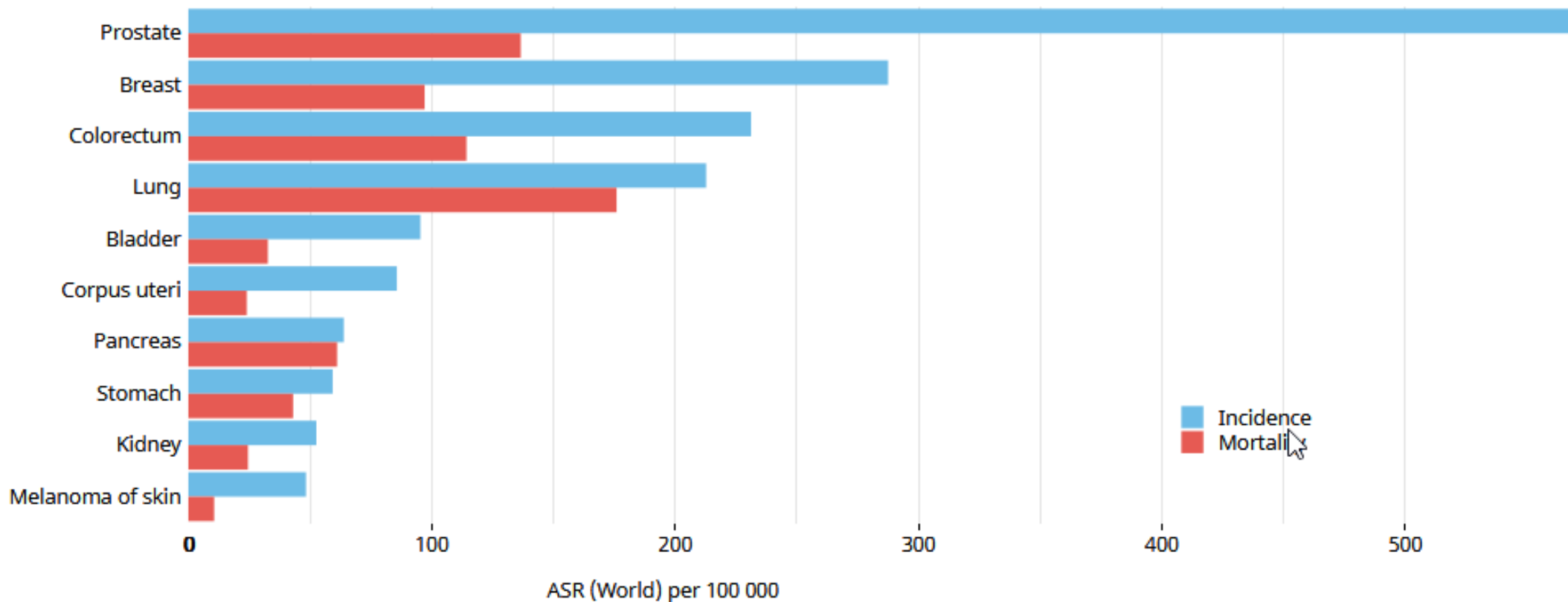


Age Standardized Cancer Incidence in Adults > 65 years in Switzerland

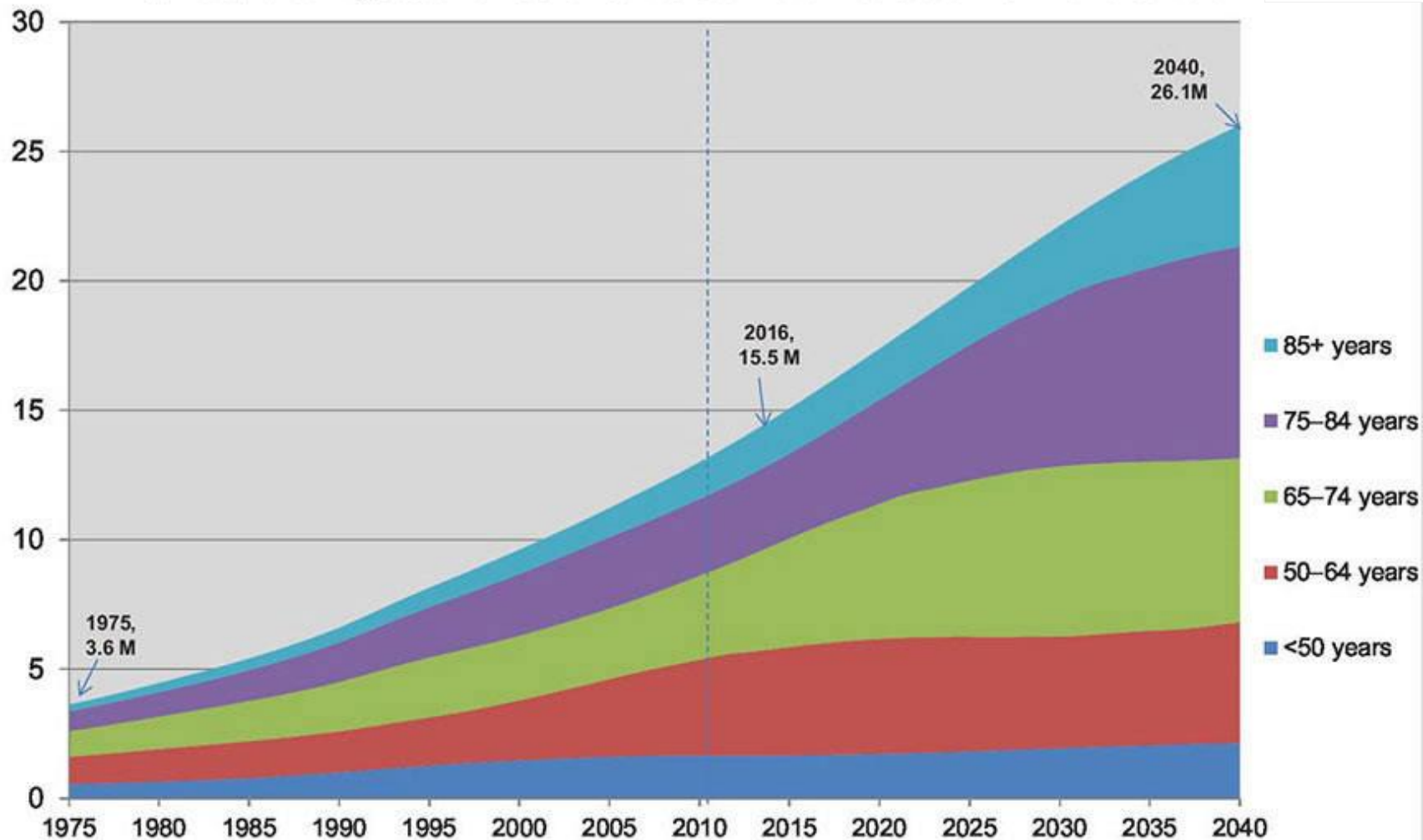
Estimated age-standardized incidence rates (World) in 2020, Europe, Switzerland, both sexes, ages 65+



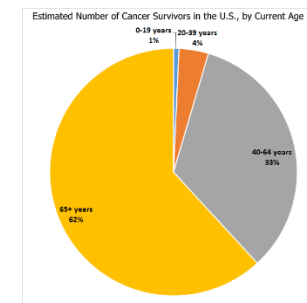
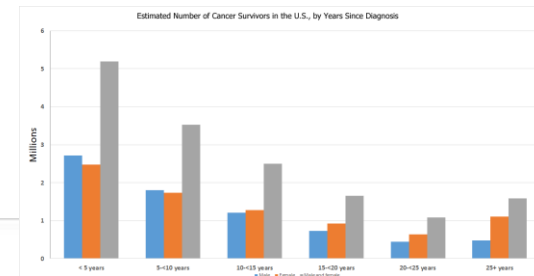
Age Standardized Cancer Incidence & Mortality in Adults > 65 years in Switzerland



Estimated and Projected Number of Cancer Survivors in the U.S. From 1975 to 2040



----- Signifies the year at which the first baby boomers (those born 1946-1964) turned 65 years old



If we cure cancer,
how is life after a cancer
diagnosis and treatment ?

And who is going to
care for those patients ?

Physical Well Being and Symptoms

Functional Activities
Strength/Fatigue
Sleep and Rest
Overall Physical Health
Fertility
Pain

Psychological Well Being

Control
Anxiety
Depression
Enjoyment/Leisure
Fear of Recurrence
Cognitive /Attention
Distress of Diagnosis and Control of Treatment

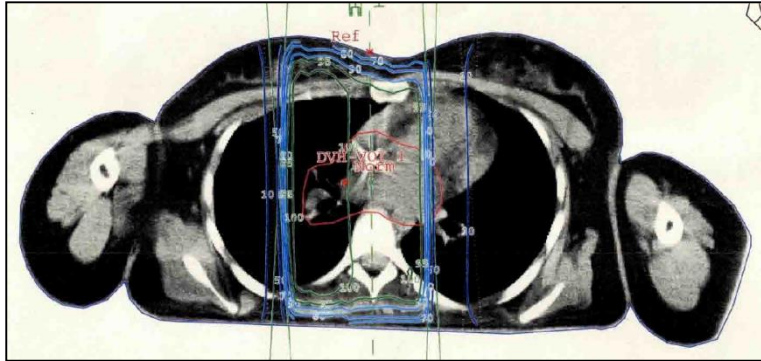
**Cancer
Survivorship**

Social Well Being

Family Distress
Roles and Relationships
Affection/Sexual Function
Appearance
Enjoyment
Isolation
Finances
Work

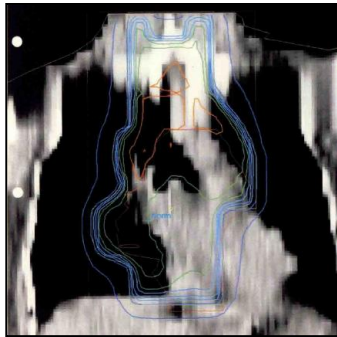
Spiritual Well Being

Meaning of Illness
Religiosity
Transcendence
Hope
Uncertainty
Inner Strength



Case No 1 female 36 years

- Marketing manager
- Shoulder pain
- Parästhesias right arm
- Hodgkin's Disease age 22
- BEACOPP esc x 6
- Mediastinal irradiation 30 Gy
- Diagnosis Leiomyosarcoma
- Resection, more radio and chemo. Died after 3 years



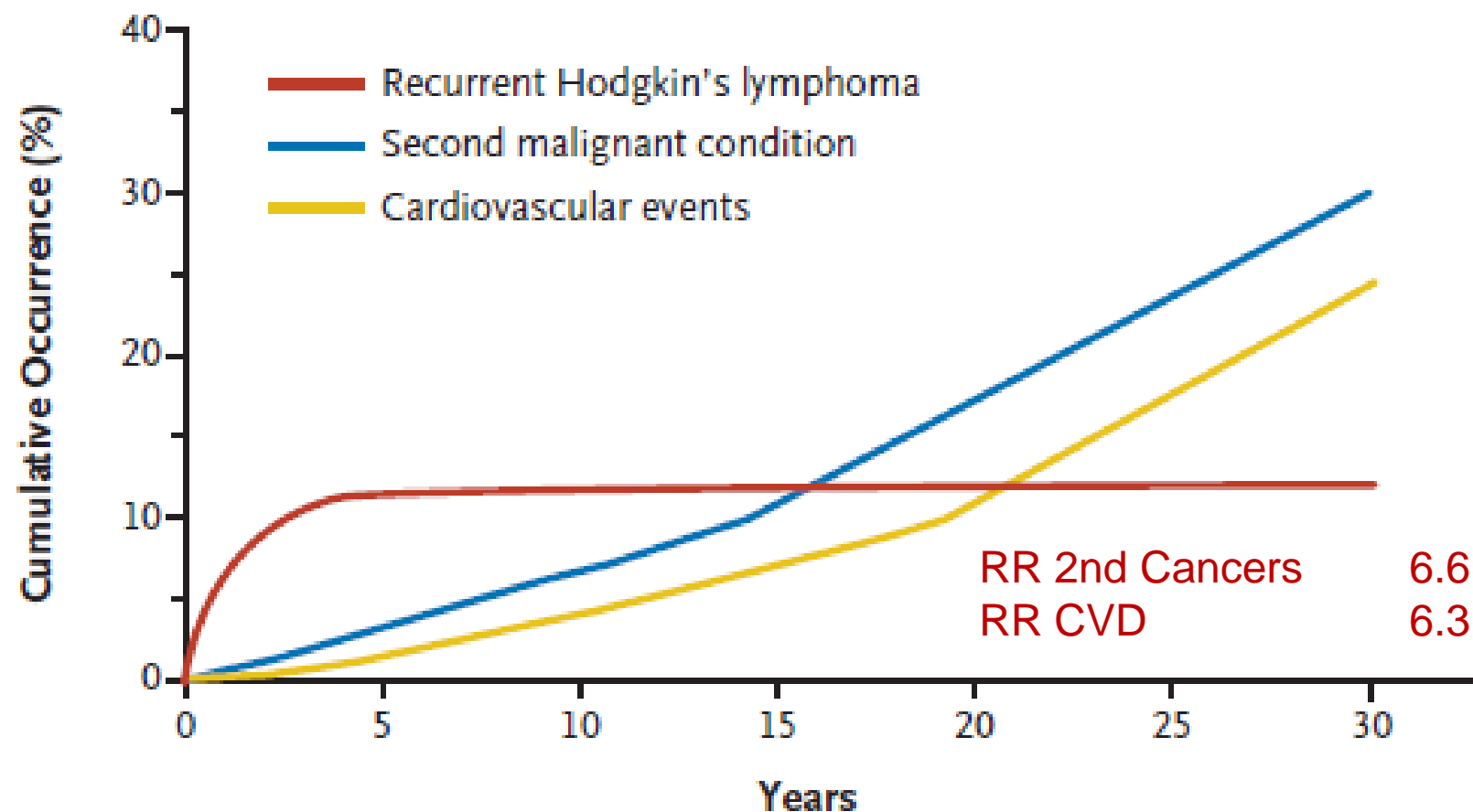


Figure 1. Approximate Cumulative Risk of Recurrent Hodgkin's Lymphoma, Second Malignant Conditions, and Cardiovascular Events among Patients Receiving Both Radiotherapy and Chemotherapy for Early-Stage Hodgkin's Lymphoma.

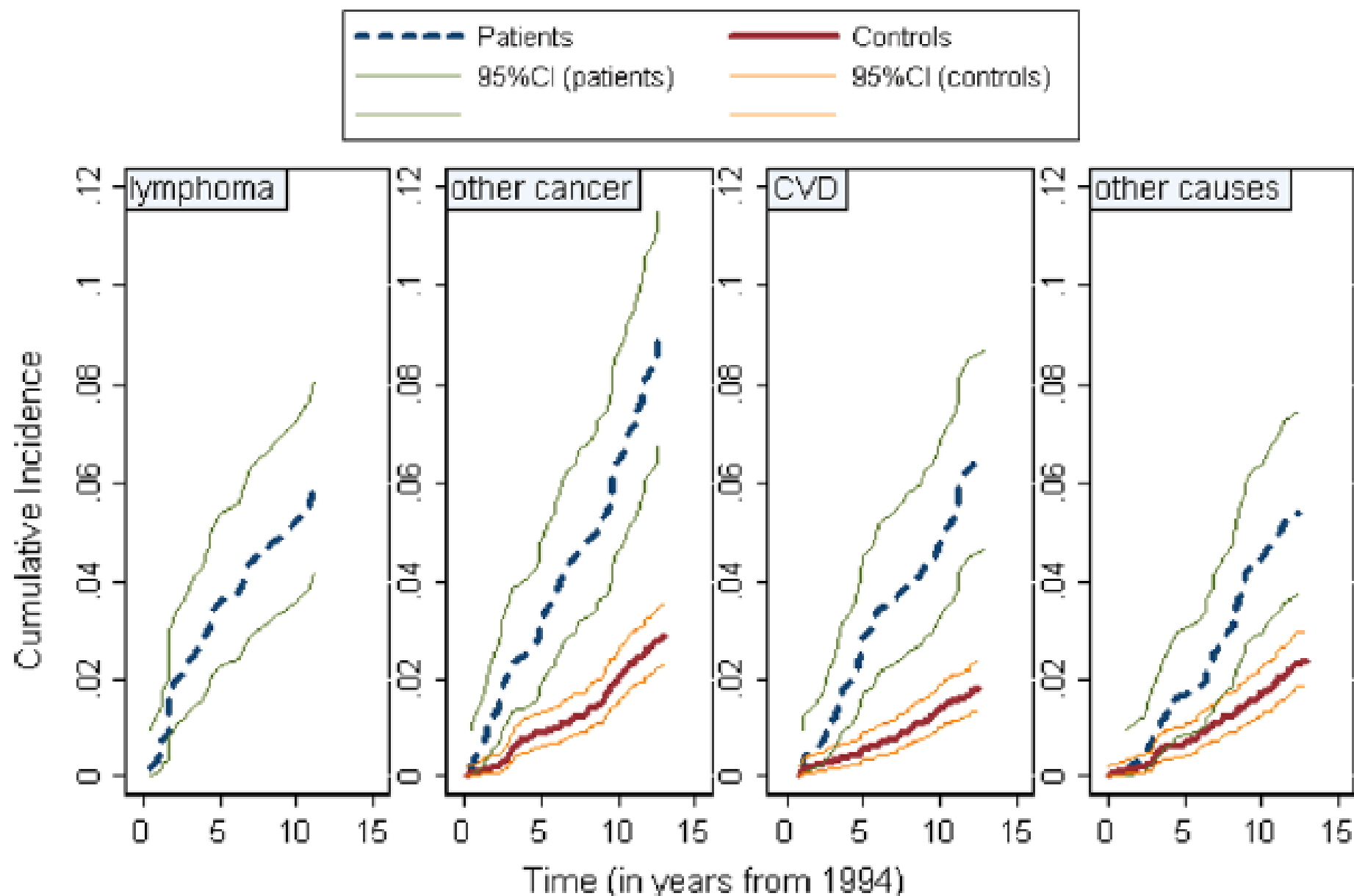
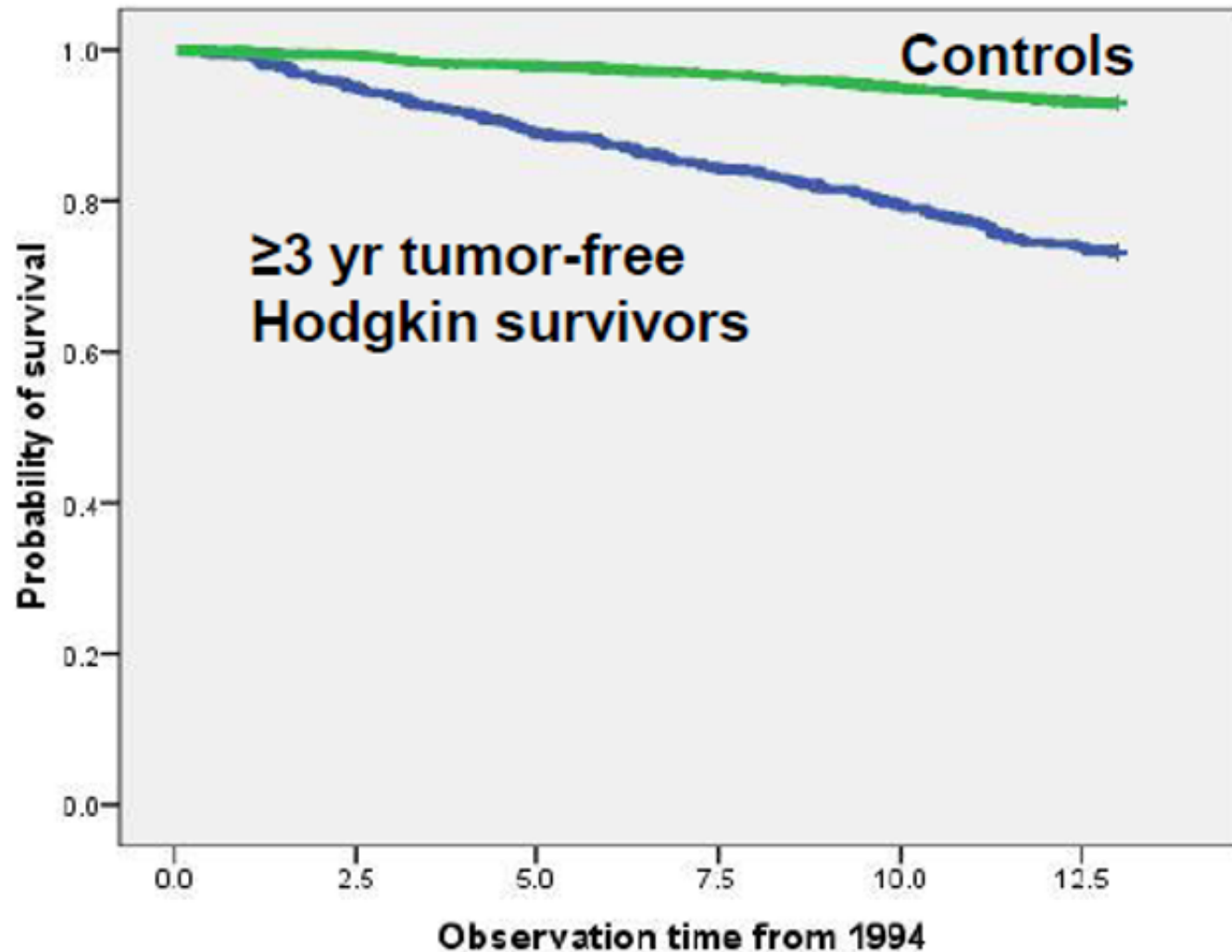
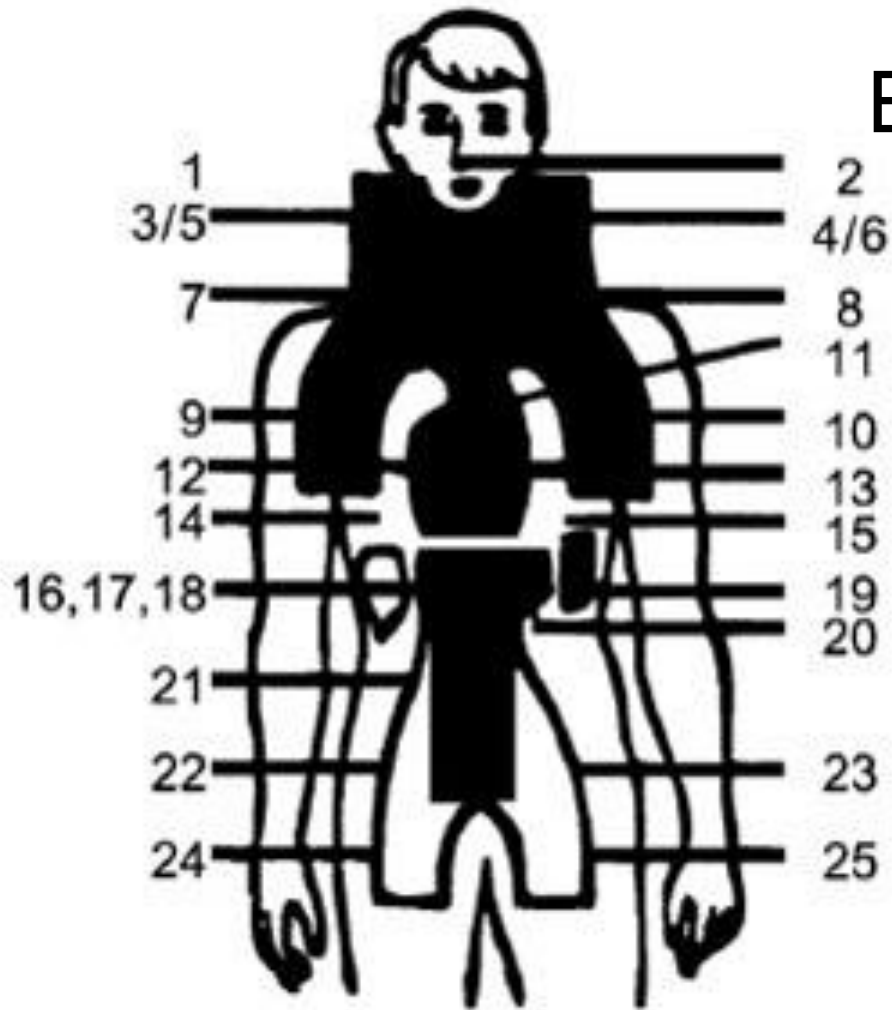


Fig. 2 – Plot of competing causes of deaths among HLSs and controls.

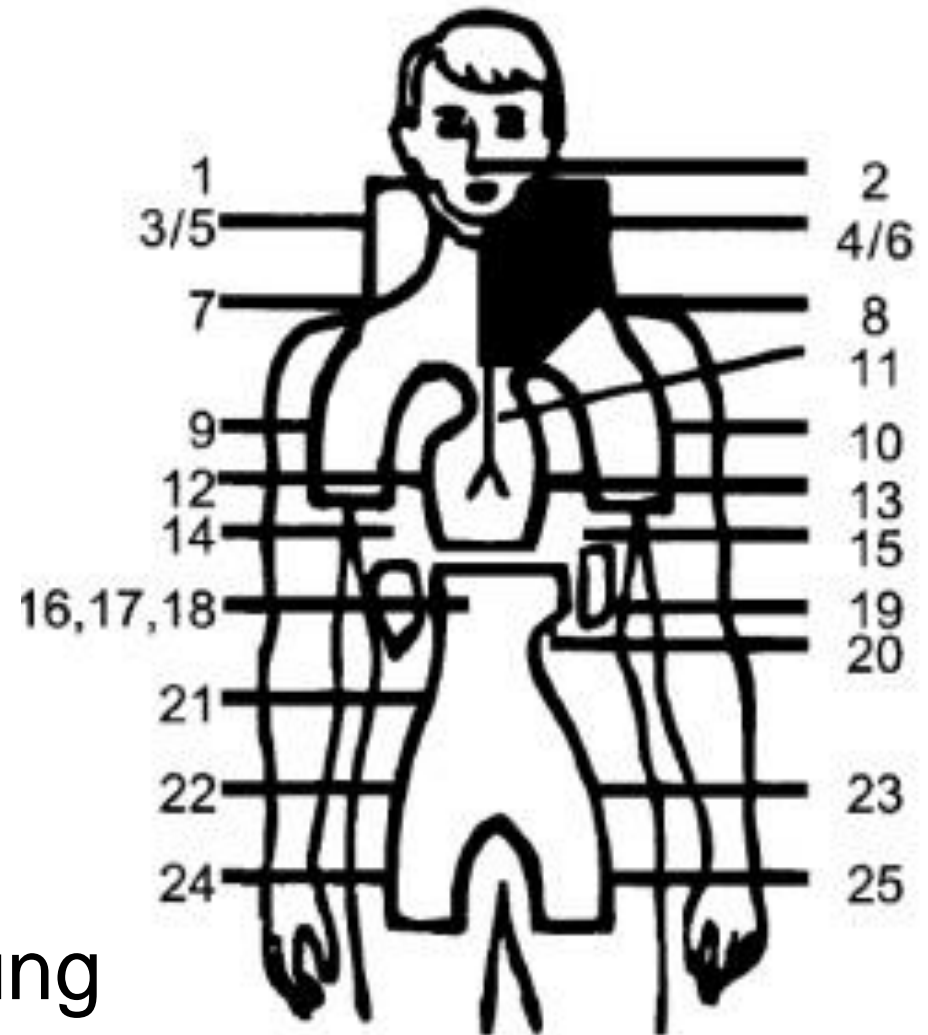
Overall survival in > 3 year tumor-free survivors of Hodgkin's lymphoma compared to age & gender matched controls in Norway

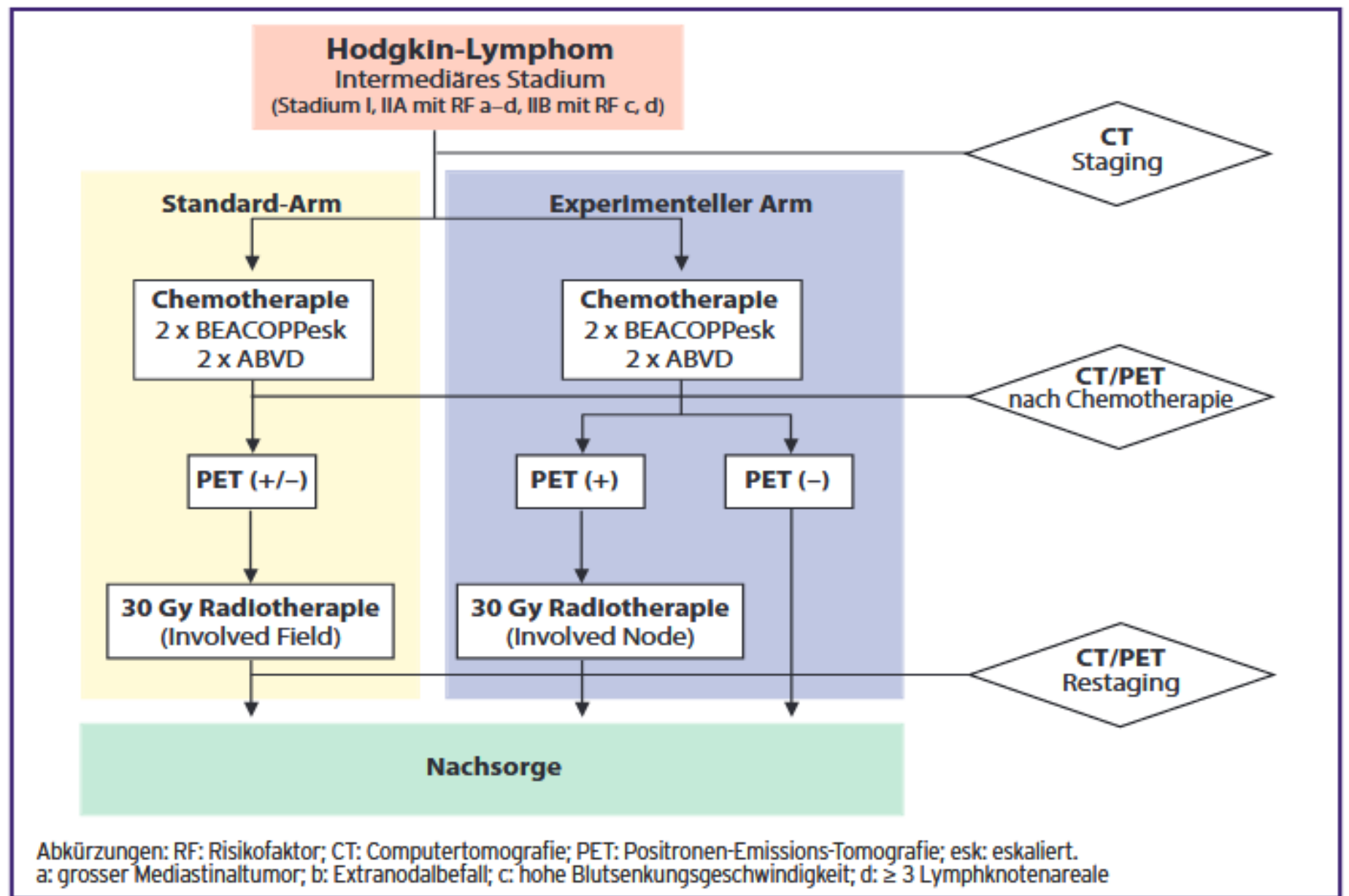


Extended-field Betrachtung



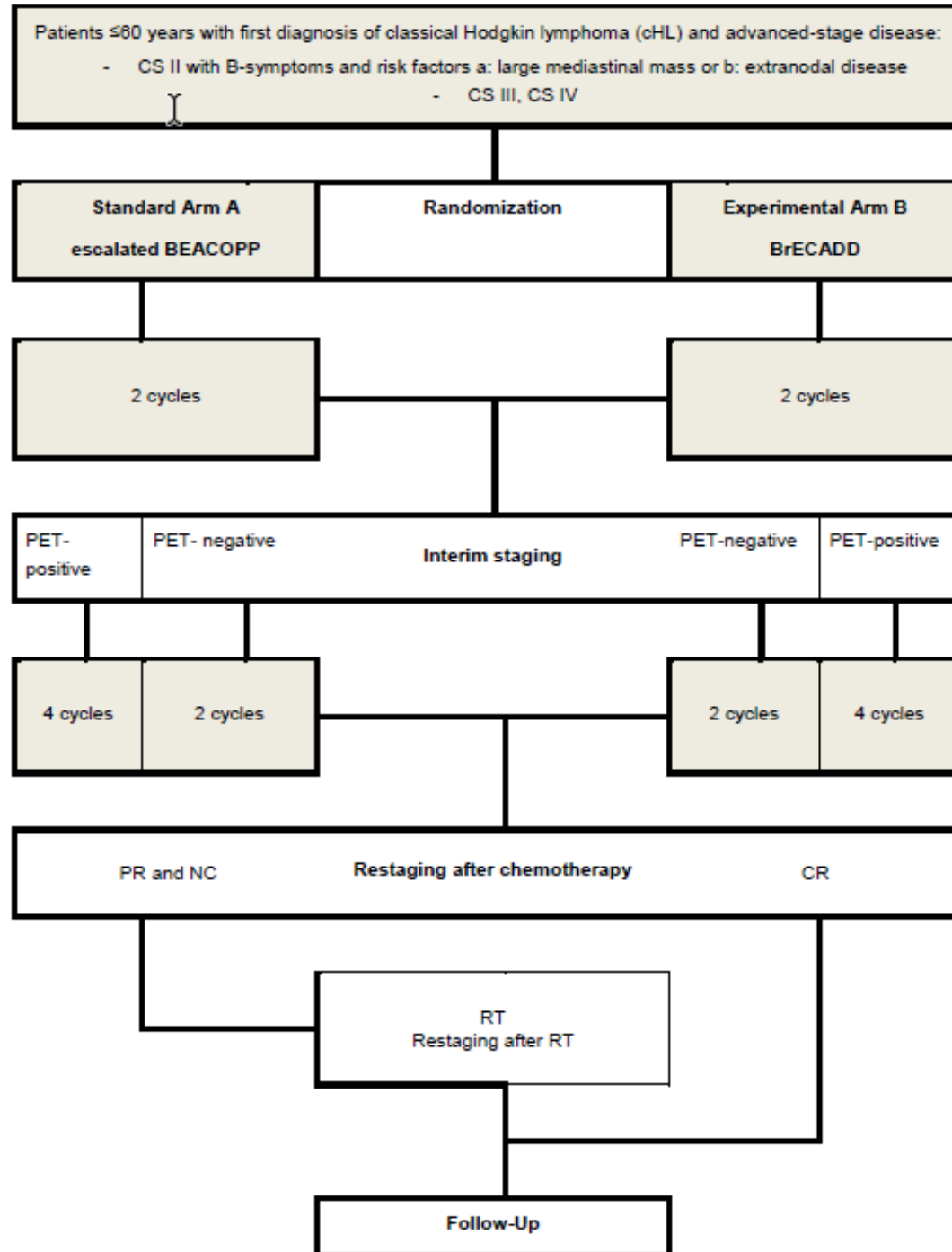
Involved-field Betrachtung





Studiendesign: Prospektive, multizentrische, randomisierte Studie

Studiename: Therapieoptimierungsstudie in der Primärtherapie des intermediären Hodgkin-Lymphoms: Therapiestratifizierung mittels FDG-PET



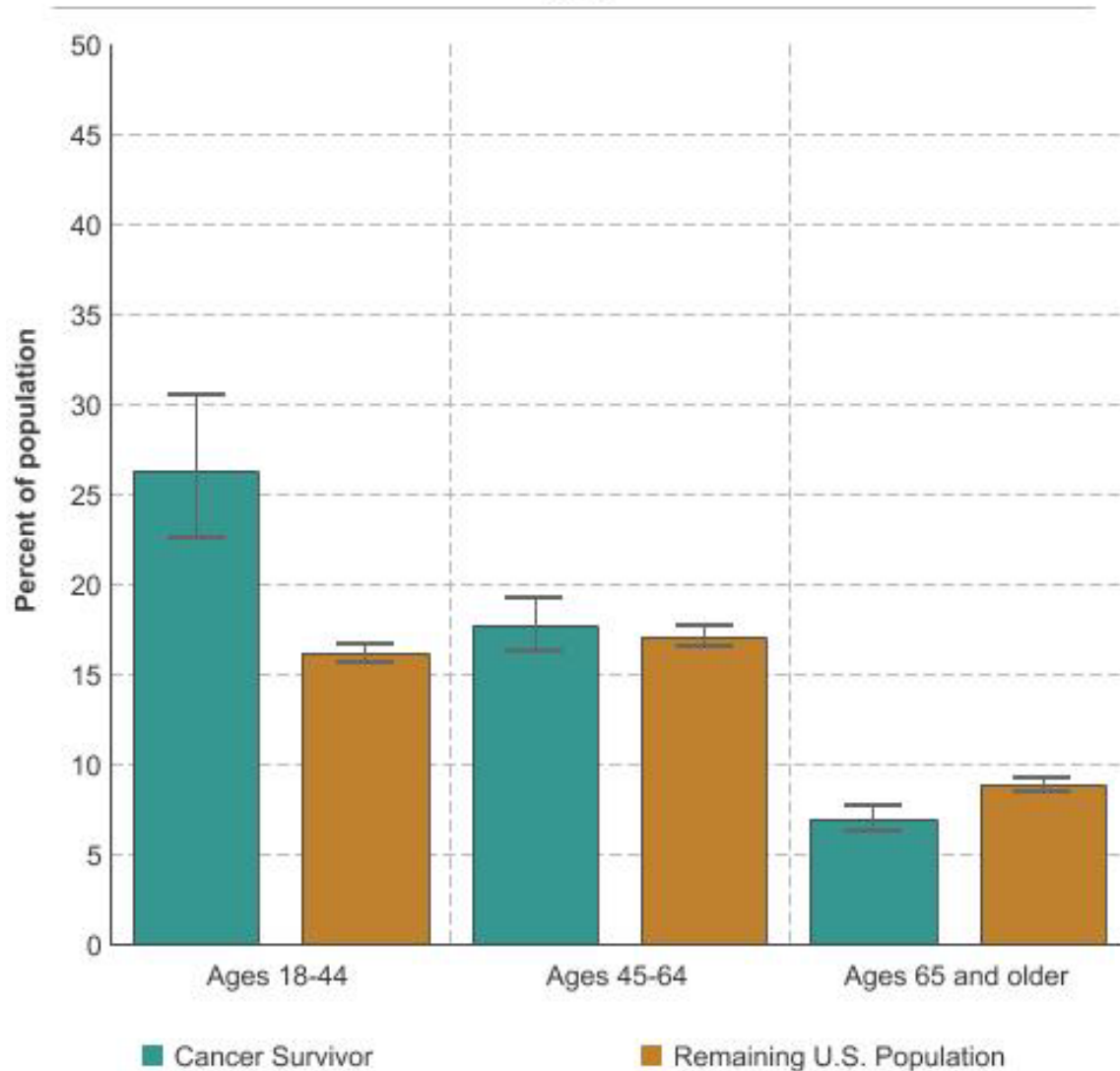
De-escalation of upfront treatment intensity

HD21 Protocol

Association of First Primary Cancer With Risk of Subsequent Primary Cancer Among Survivors of Adult-Onset Cancers in the United States

- 1'537'101 patients in the SEER database
- Treated between 1992-2011
- More 50% had survived longer than 10 years
- 11% higher risk of secondary cancers
- > 50% of secondary cancers were related to smoking, obesity or lack of exercise

Comparison of cancer survivors and remaining U.S. population for percentage of adults aged 18 years and older who were current cigarette smokers by age, 2014-2018

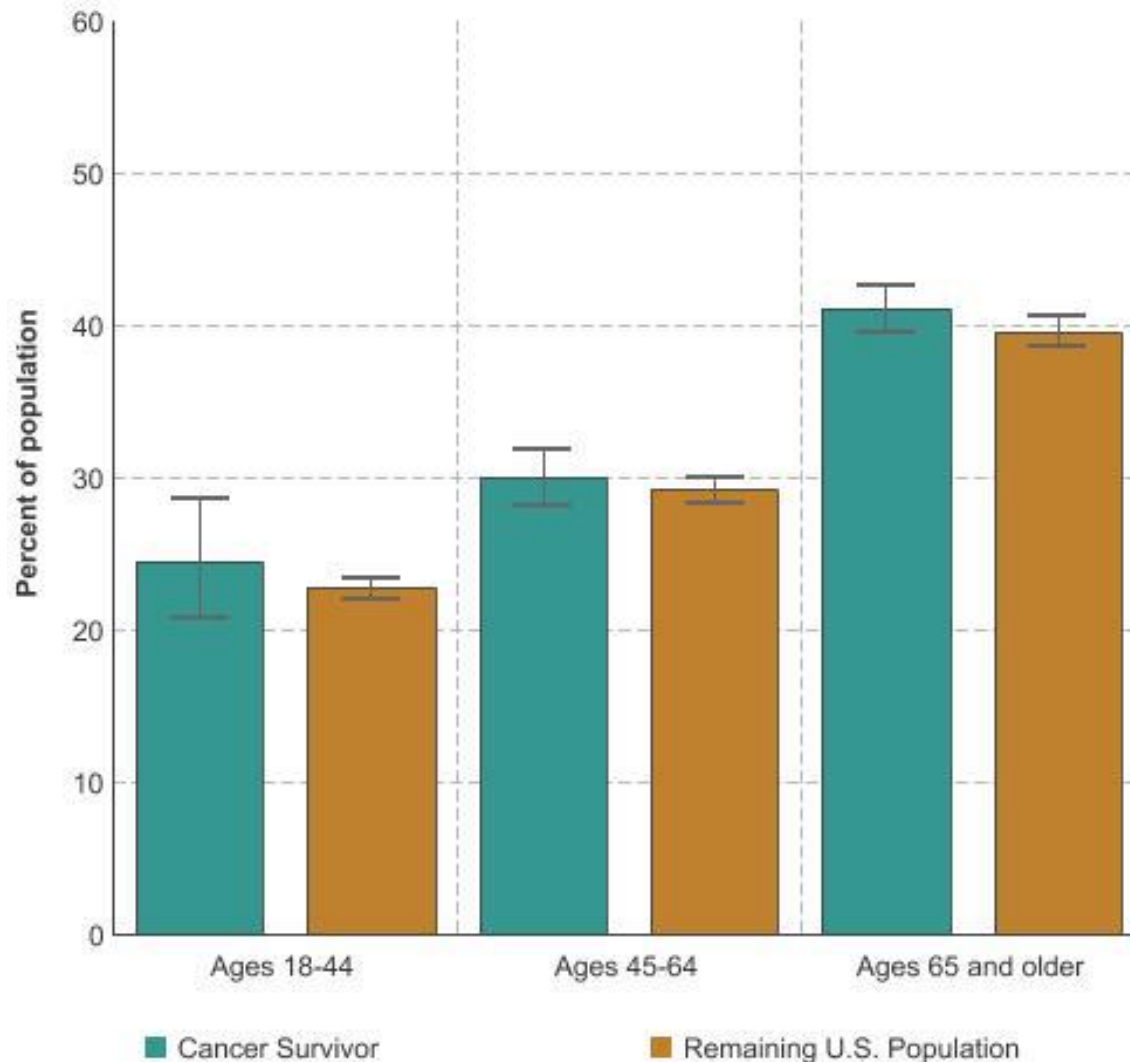


In cancer survivors
it's not the
recurrence that
kills

Smoking

Source: Centers for Disease Control and Prevention, National Center for Health Statistics. National Health Interview Survey.
Data are age-adjusted to the 2000 US standard population using age groups: 18-24, 25-34, 35-44, 45-64, 65+. Analysis uses the 2000 Standard Population.

Comparison of cancer survivors and remaining U.S. population for percentage of adults aged 18 years and older reporting no physical activity in their leisure time by age, 2014-2018

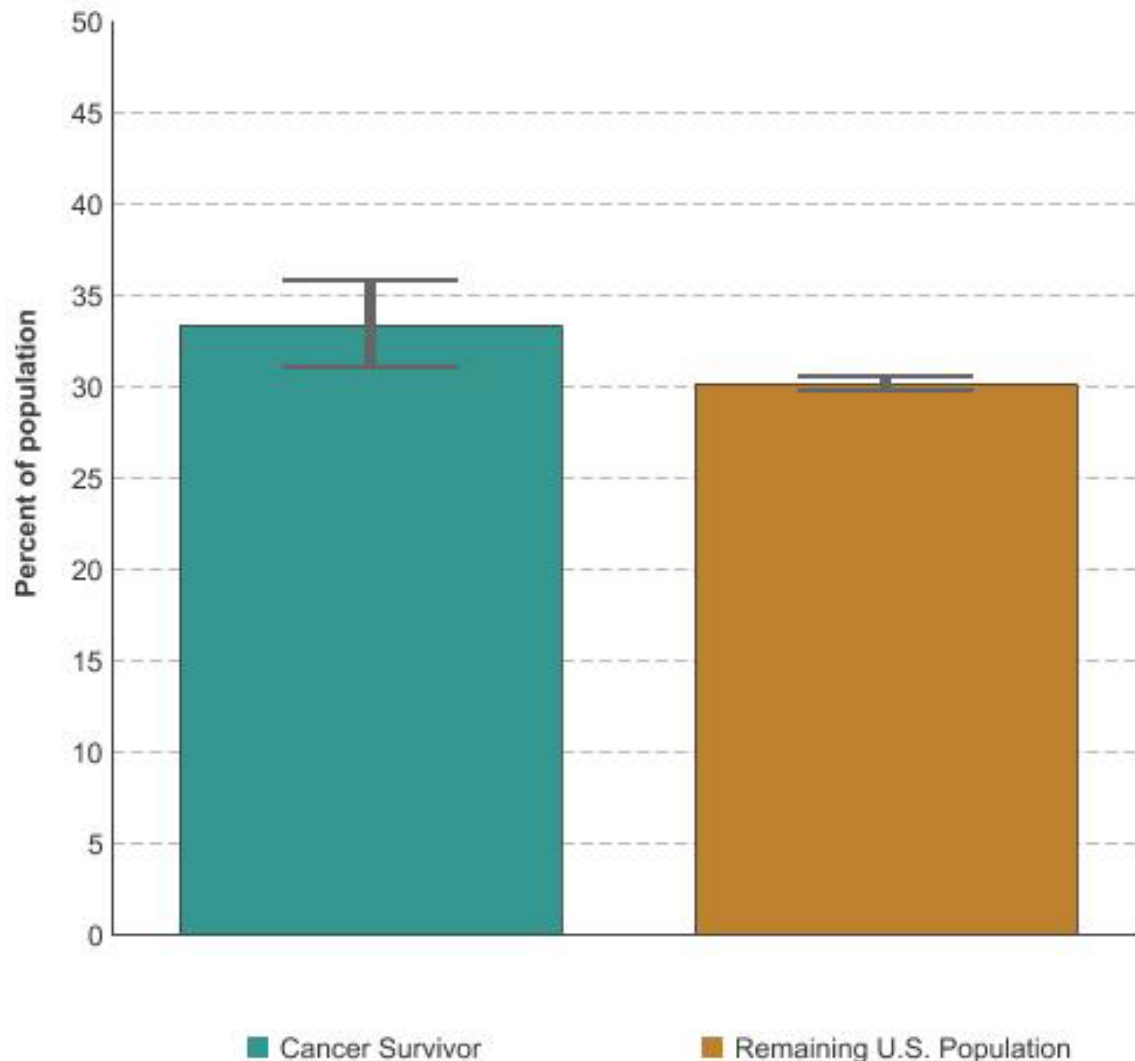


In cancer survivors
it's not the
recurrence that
kills

Lack of
exercise

Source: Centers for Disease Control and Prevention, National Center for Health Statistics. National Health Interview Survey. Data are age-adjusted to the 2000 US standard population using age groups: 18-24, 25-34, 35-44, 45-64, 65+. Analysis uses the 2000 Standard Population.

Comparison of cancer survivors and remaining U.S. population for percentage of adults aged 18 years and older who were obese, 2014-2018



In cancer survivors
it's not the
recurrence that
kills

Obesity

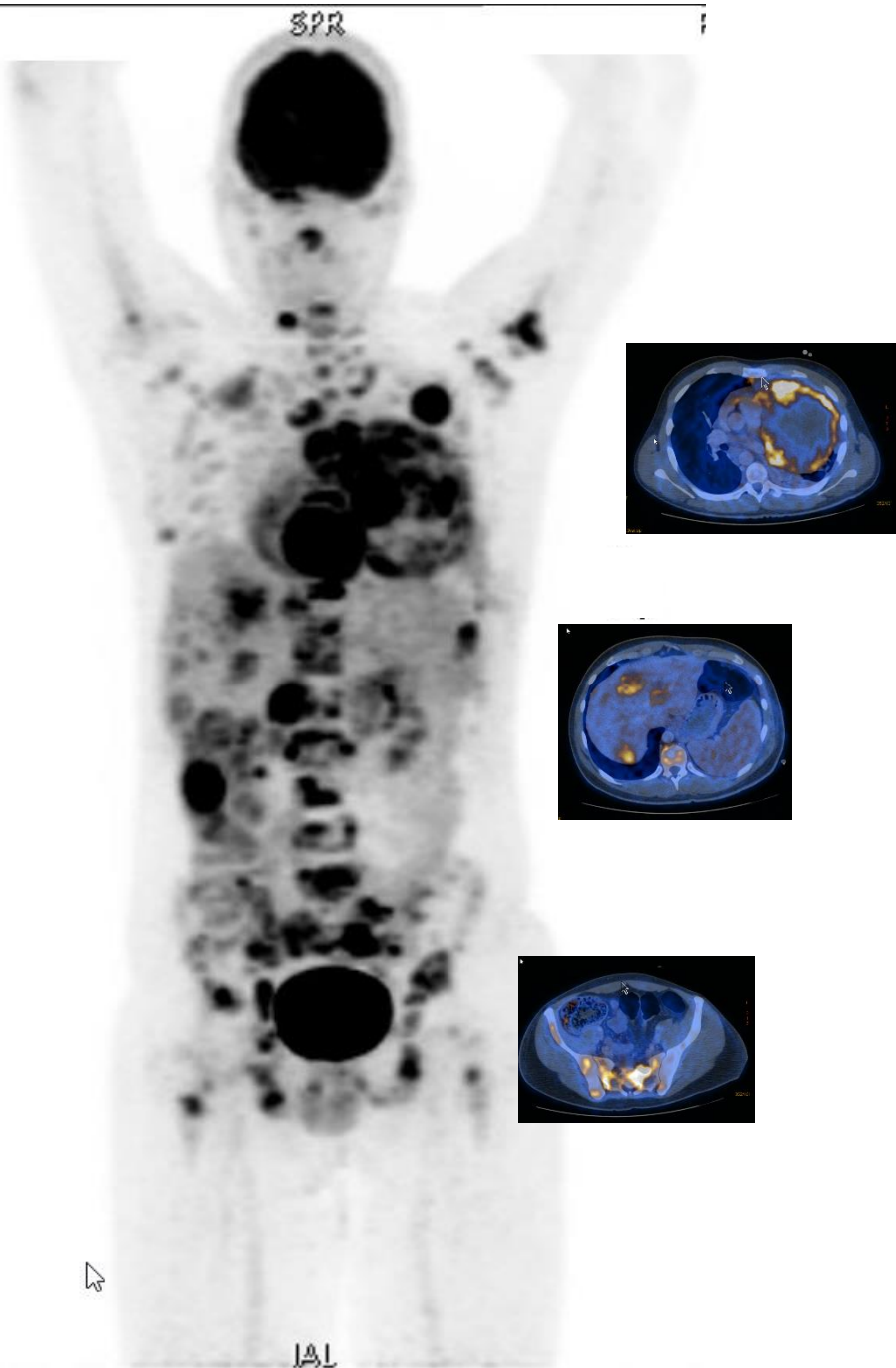
Source: Centers for Disease Control and Prevention, National Center for Health Statistics. National Health Interview Survey.
Obese is defined as a Body Mass Index (BMI) greater than 30.
Data are age-adjusted to the 2000 US standard population using age groups: 18-24, 25-34, 35-44, 45-64, 65+. Analysis uses the 2000 Standard Population.

What can/should we do

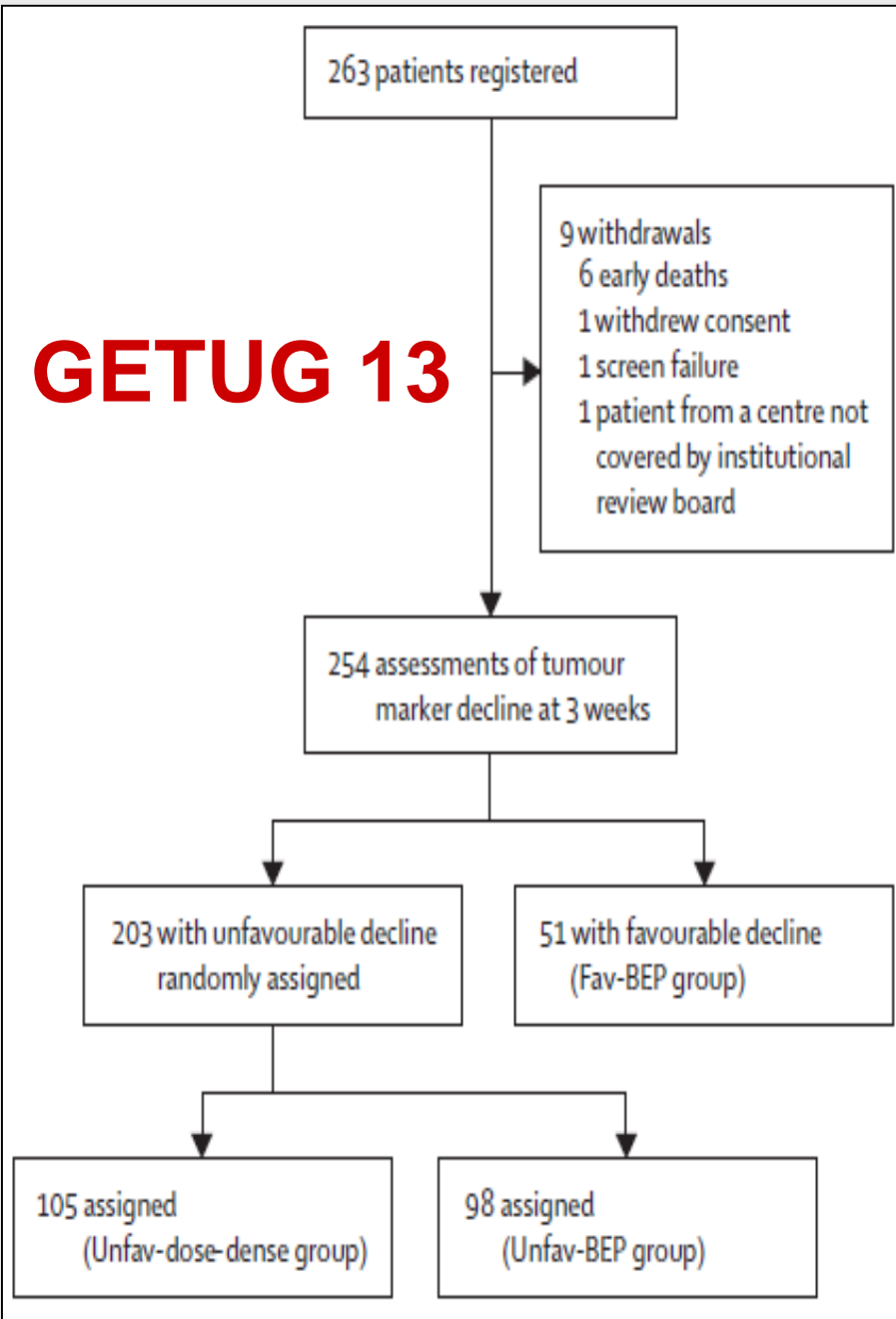
- Inform patients about the risk of secondary cancers
- Inform about the importance of life style issues
- Inform about participation in regular cancer screening programs
- Hook-up with and inform general practitioner
- Provide a cancer survivorship plan

Case No 2 male 26 years

- Cough
- Dysnea
- Pain right hip joint
- Paracardial mass 10 cm
- LDH 2822 U/L & AFP 236 ng/ml elevated
- Extragonadal germ-cell cancer



GETUG 13



BEP

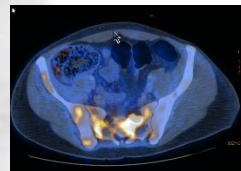
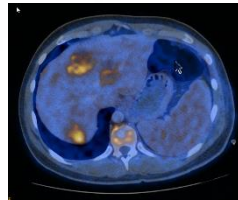
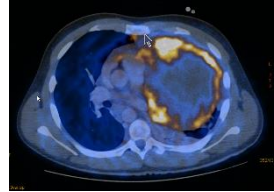
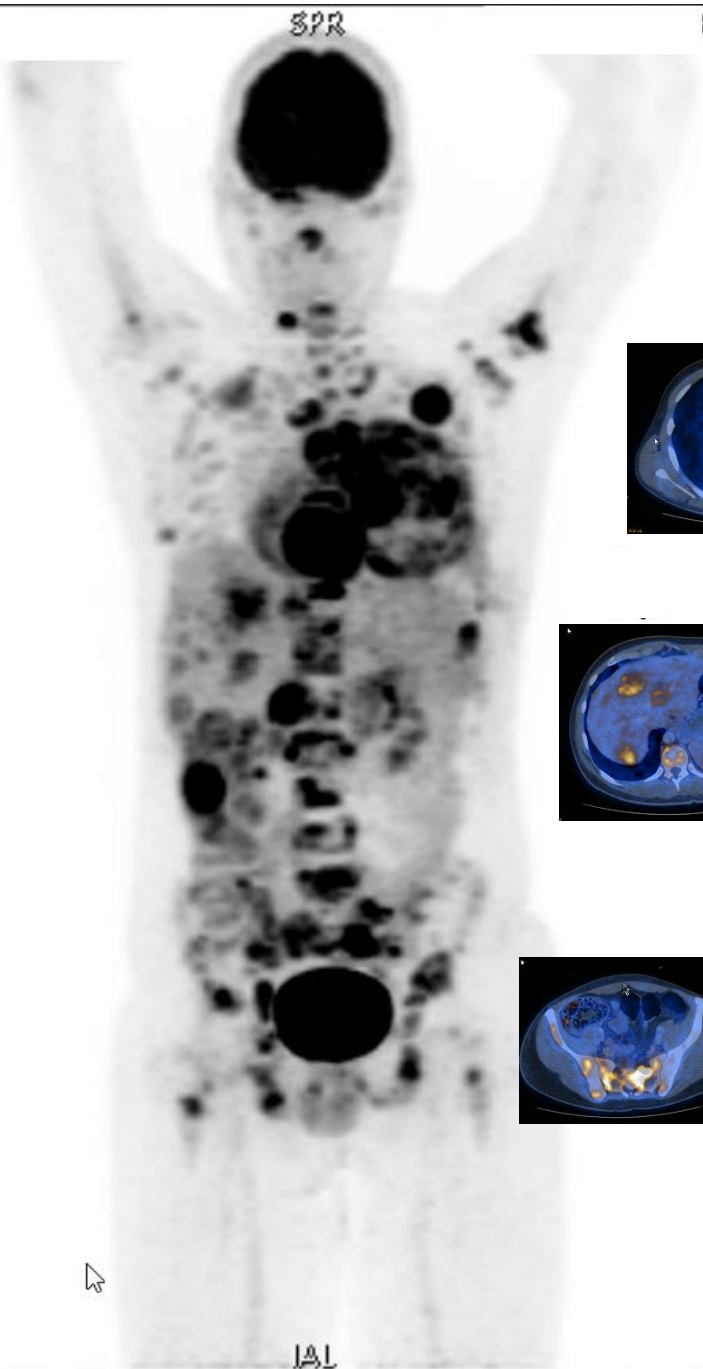
Cisplatin 20 mg/m² x5
Etoposide 100 mg/m² x5
Bleo 30 mg weekly

Dose-Dense

BEP plus
Paclitaxel 175 mg/m² day -1
Oxaliplatin 130 mg/m² day 10

Cisplatin 100 mg/m² day 1
Ifosfamide 2 g/m² days 10,12,14
Bleo 25 mg 24h infusion days 10-14

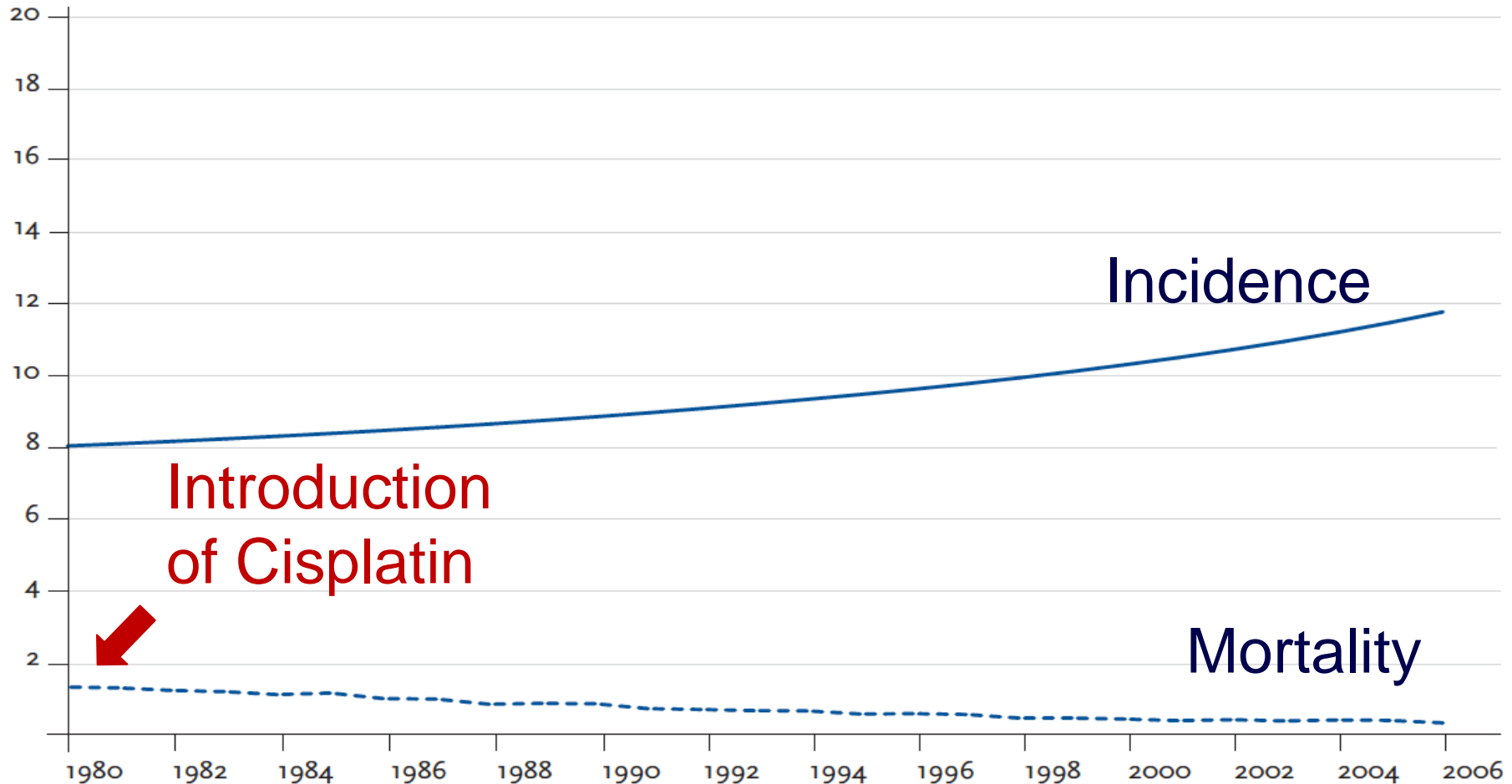
Fizazi et al.
Lancet Oncol 2014;15:1442



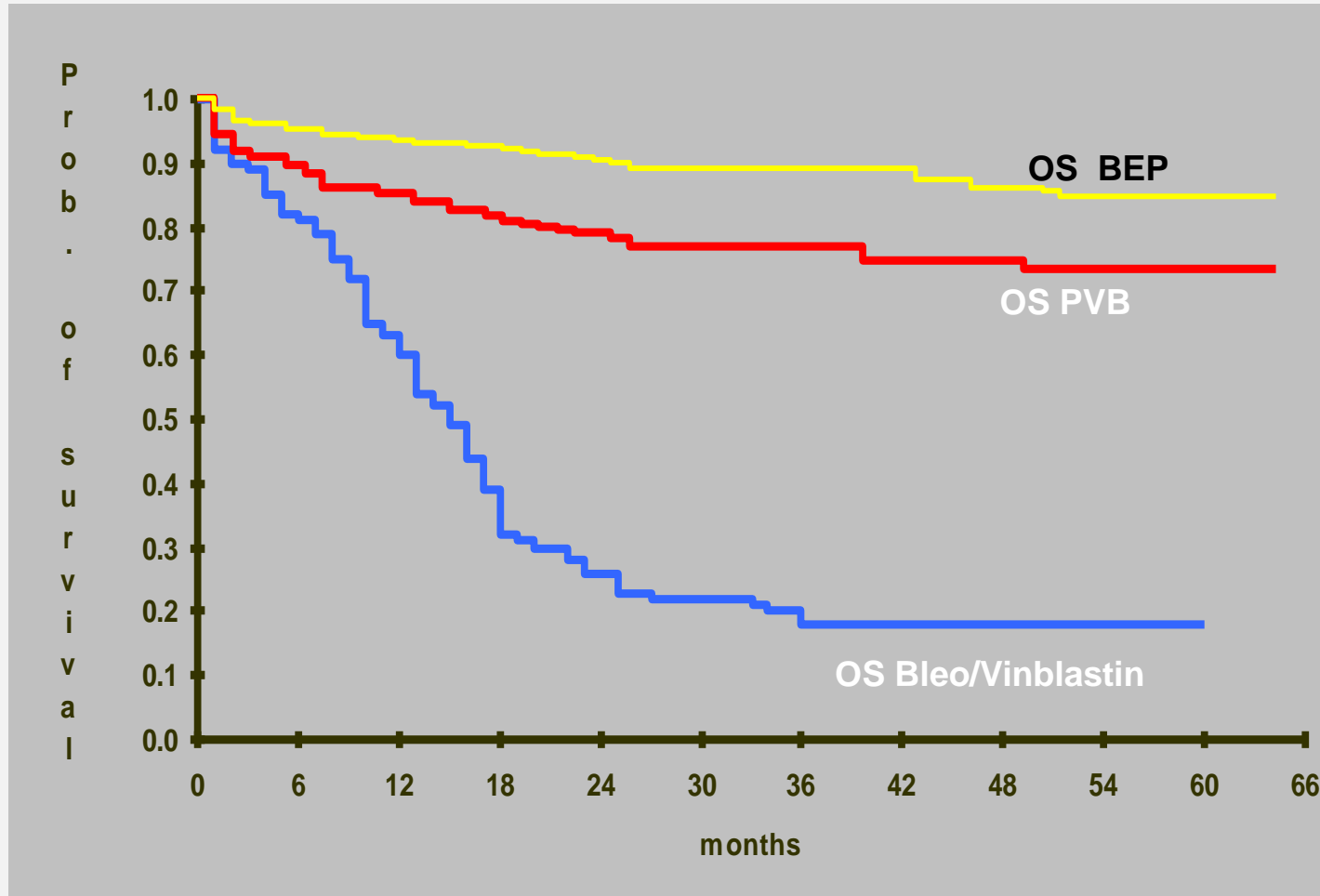
Case No 3 male 26 years

- Cured, but has hearing impairment, reduced resilience and impaired cognition
- Challenge is to get back into a "normal life"
- Risk of early metabolic syndrome and 2° cancer

Incidence and Death Rates Testis Cancer in Europe

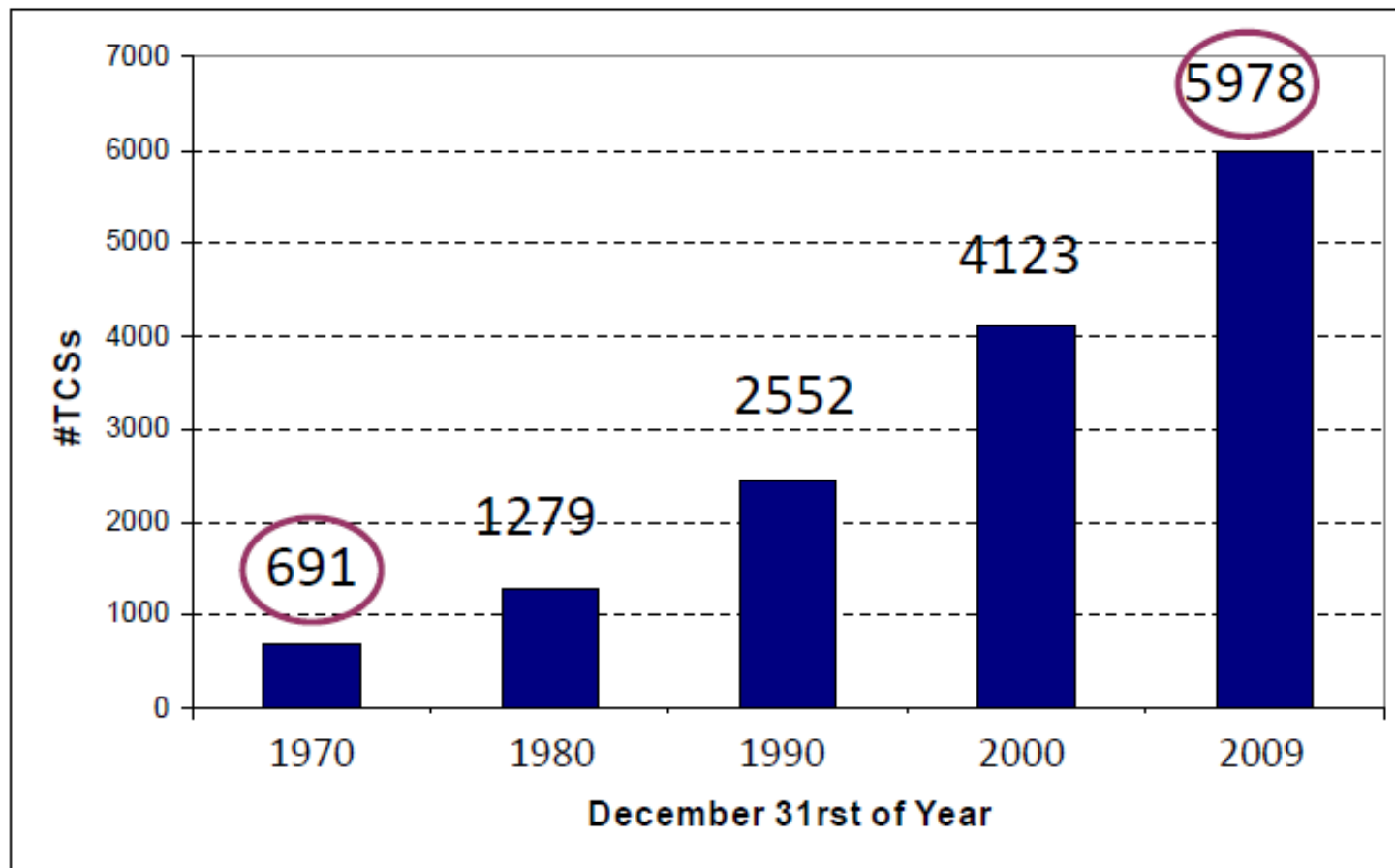


Survival of metastatic germ cell cancer patients before and after cisplatin

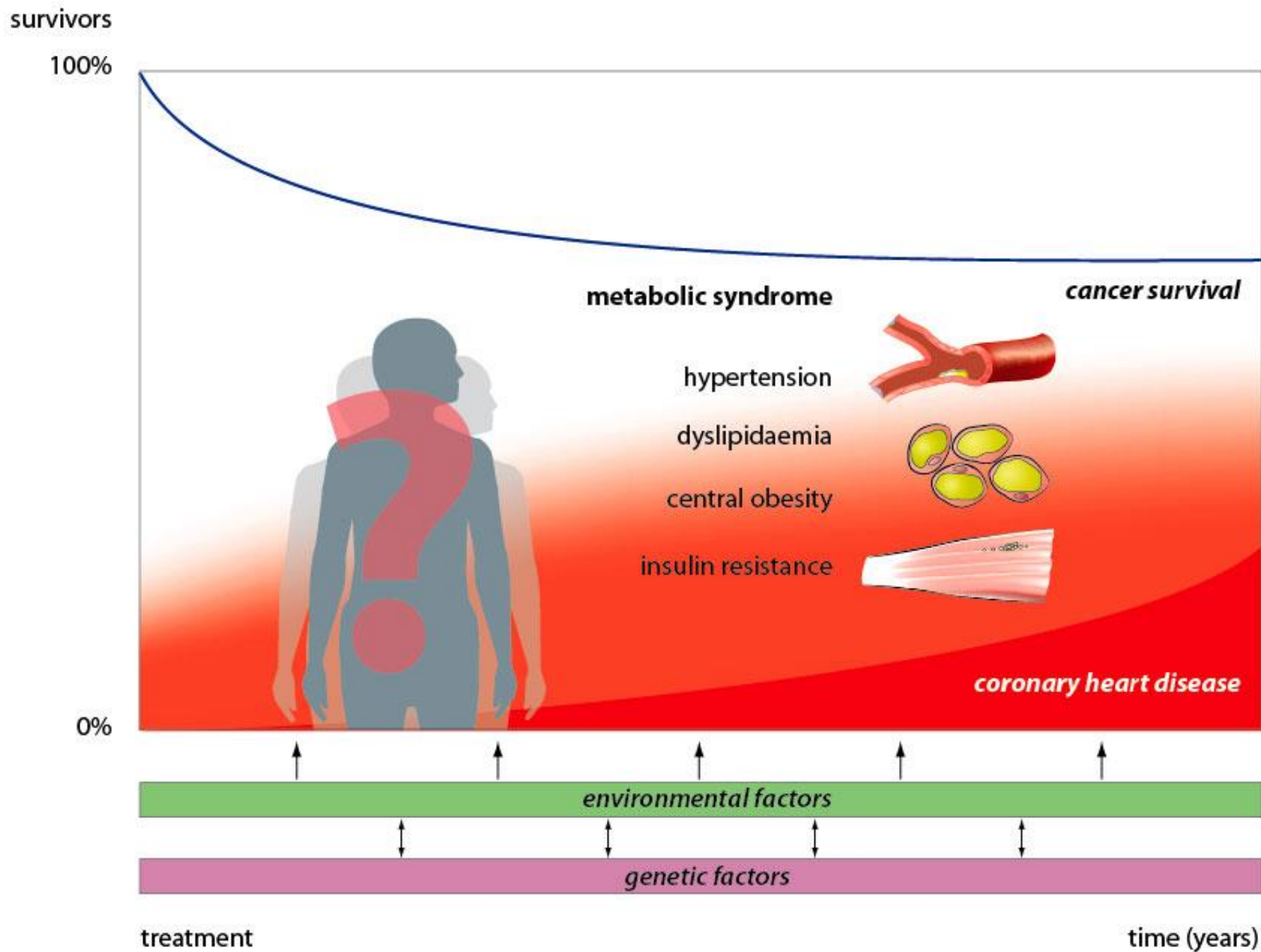


Samuels Cancer Treat Rev 1976, Williams NEJM 1987, Sonneveld Cancer 2000

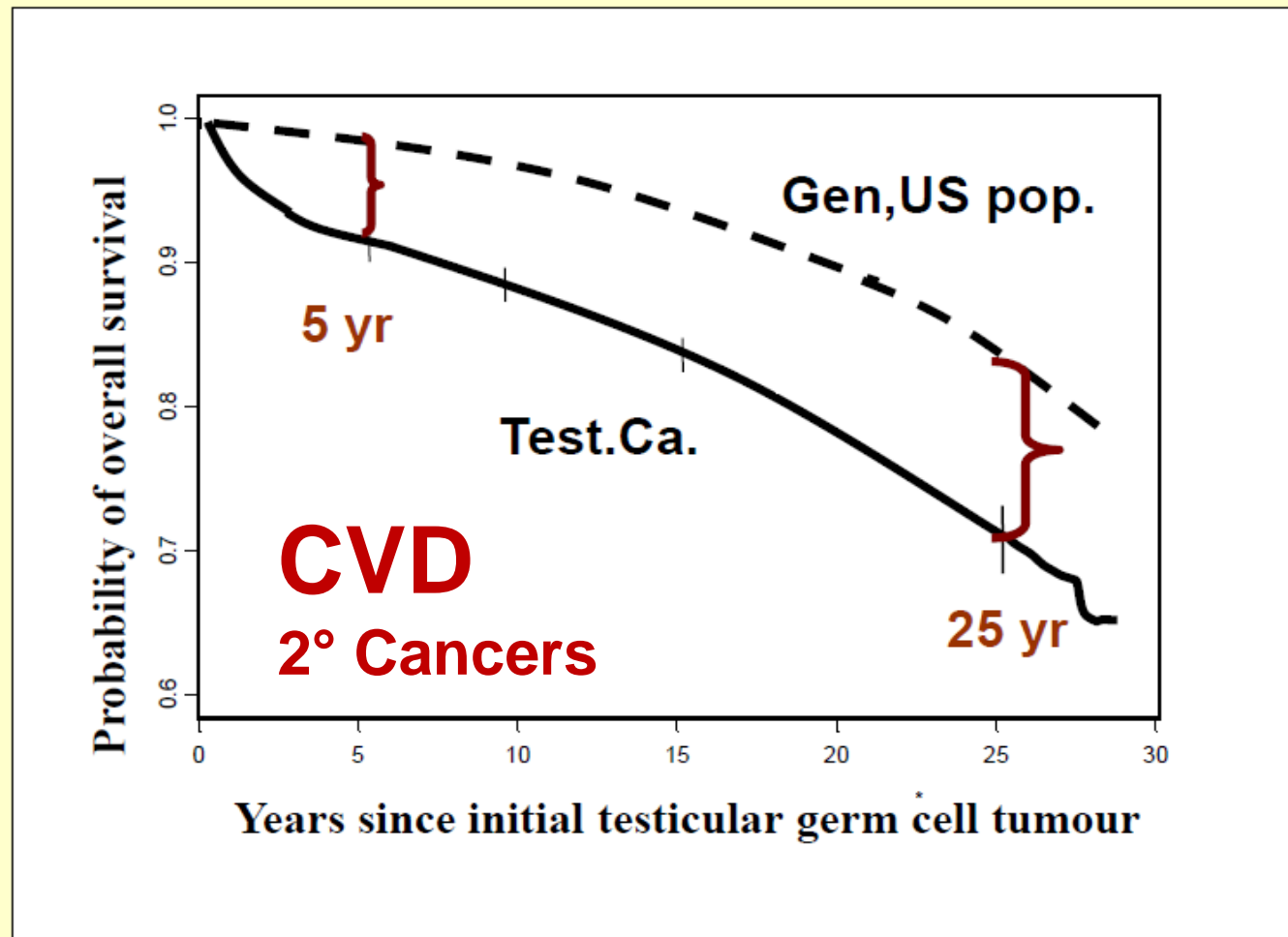
Prevalence of ≥ 5 year Testicular Cancer Survivors in Norway



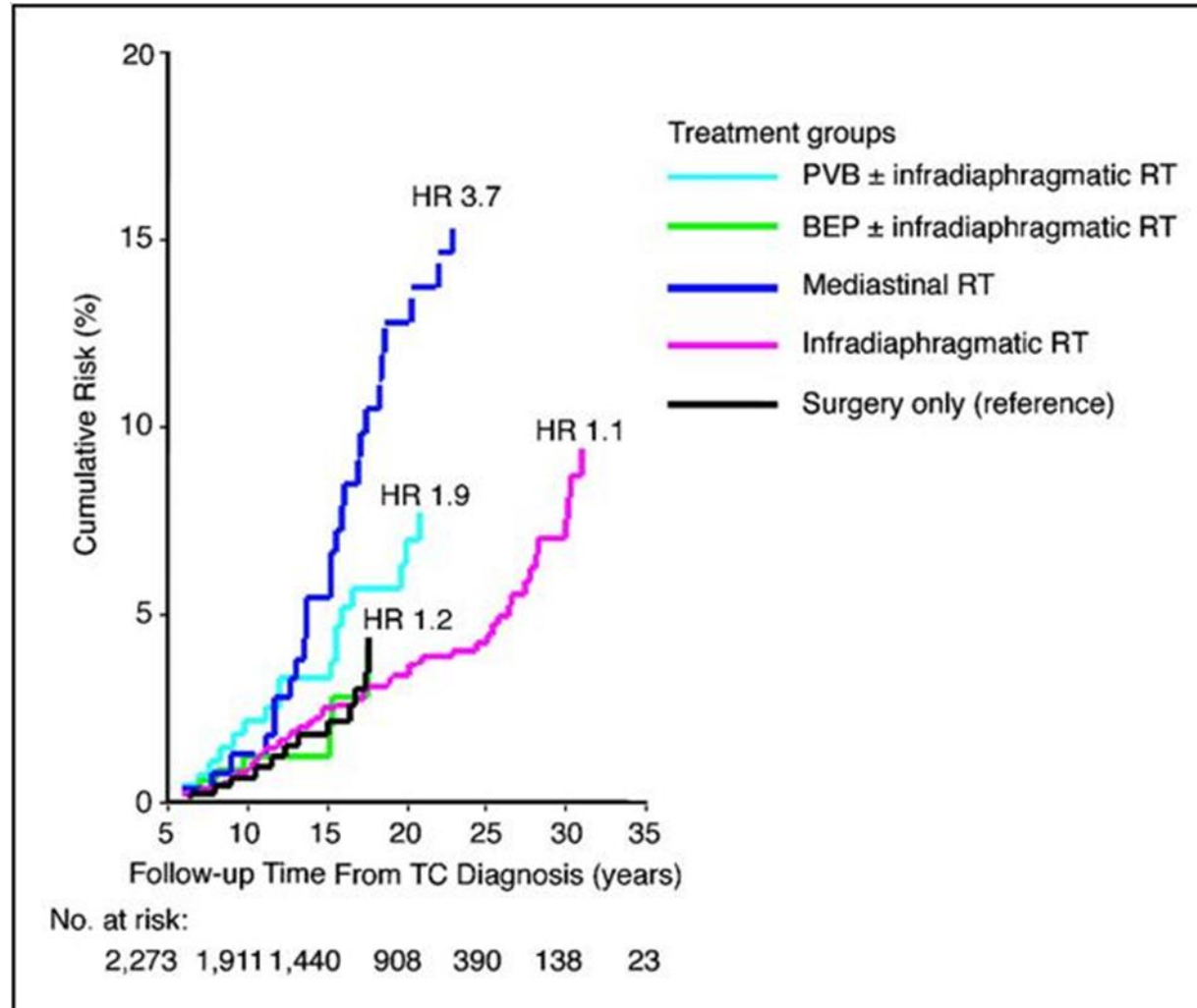
Increased risk of heart attacks and stroke



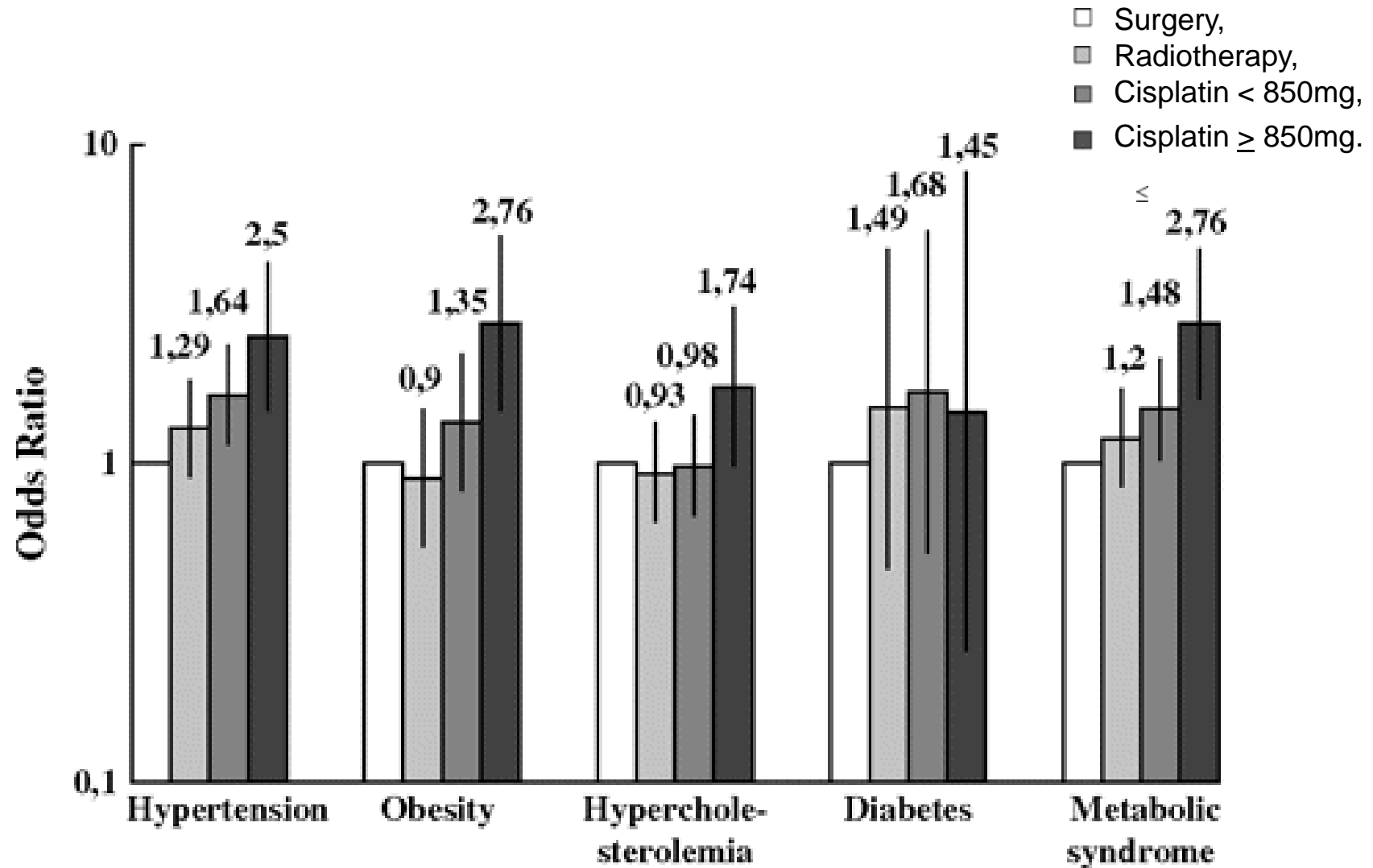
Overall survival for patients with unilateral TC and the age-matched general US population (SEER 1973-2001)



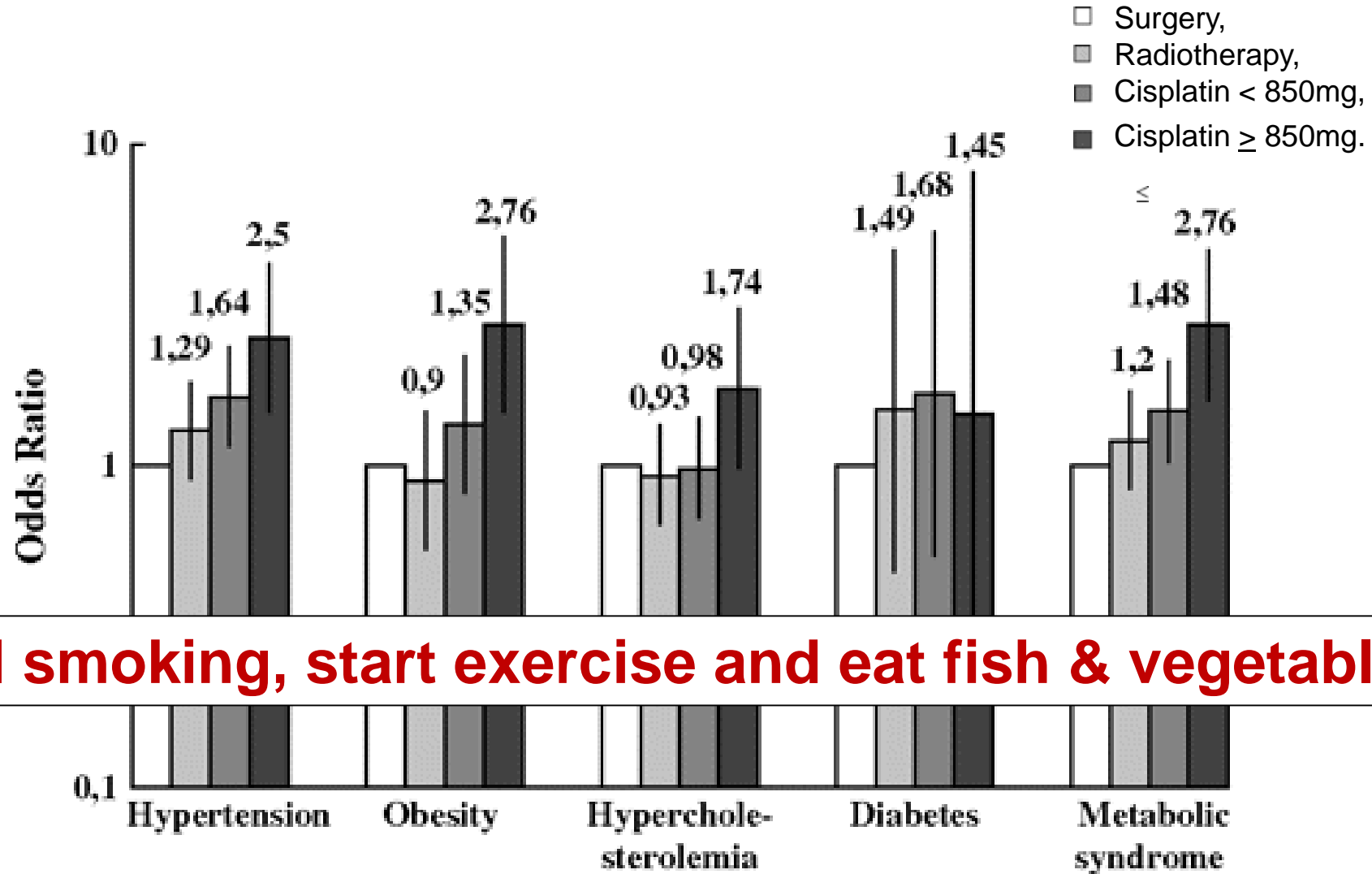
CVD: Risk of myocardial infarction



CVD: Risk of metabolic syndrome



CVD: Risk of metabolic syndrome



Avoid smoking, start exercise and eat fish & vegetables

Health promotion is often overlooked because everyone is concentrating on monitoring for cancer recurrence, when in fact many cancer survivors are at risk for and will die from cardiovascular disease, stroke or diabetes complications.

Long-term Platinum Retention After Platinum-based Chemotherapy in Testicular Cancer Survivors: A 20-Year Follow-up Study

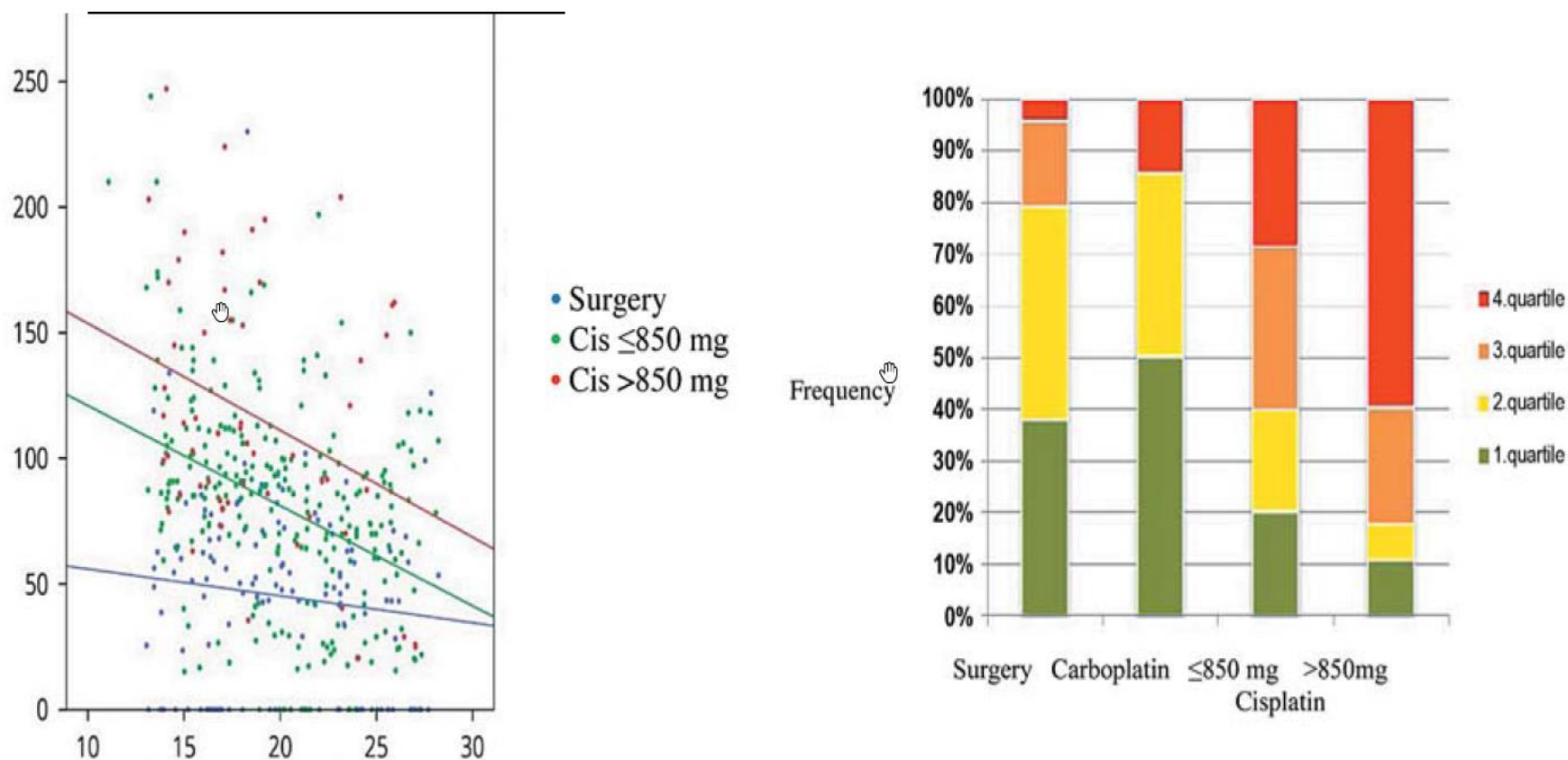
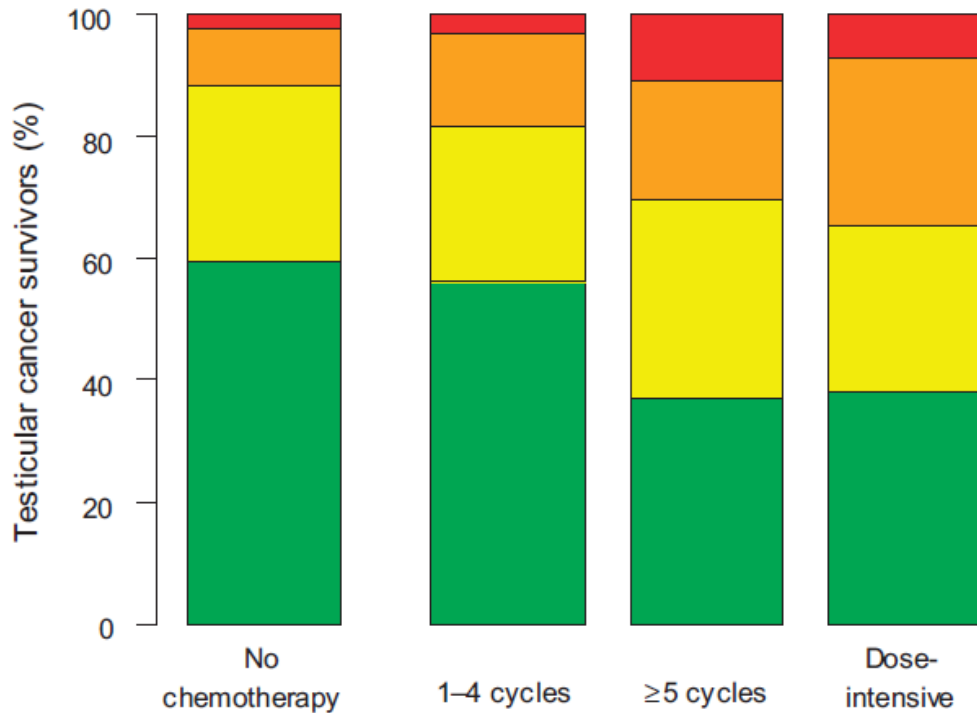


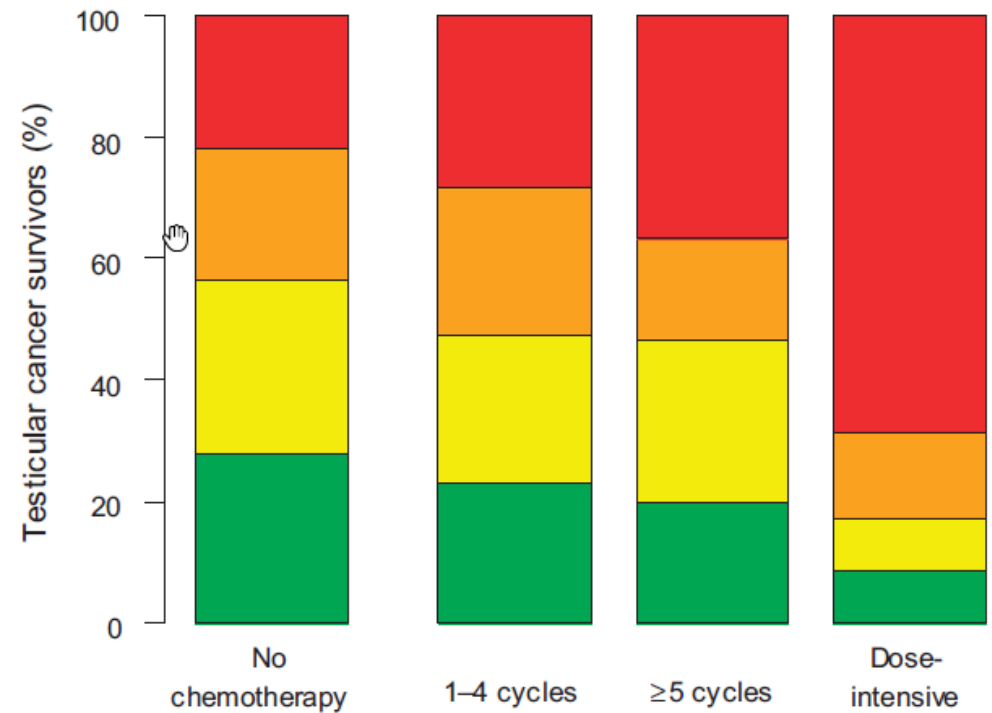
Figure 2. Scatterplot showing individual platinum levels according to follow-up time. Cis: Cisplatin

Hearing Impairment

Self-reported



Audiometry



Not at all (audiometry: quartile 1)

A little (audiometry: quartile 2)

Very much (audiometry: quartile 4)

Quite a bit (audiometry: quartile 3)

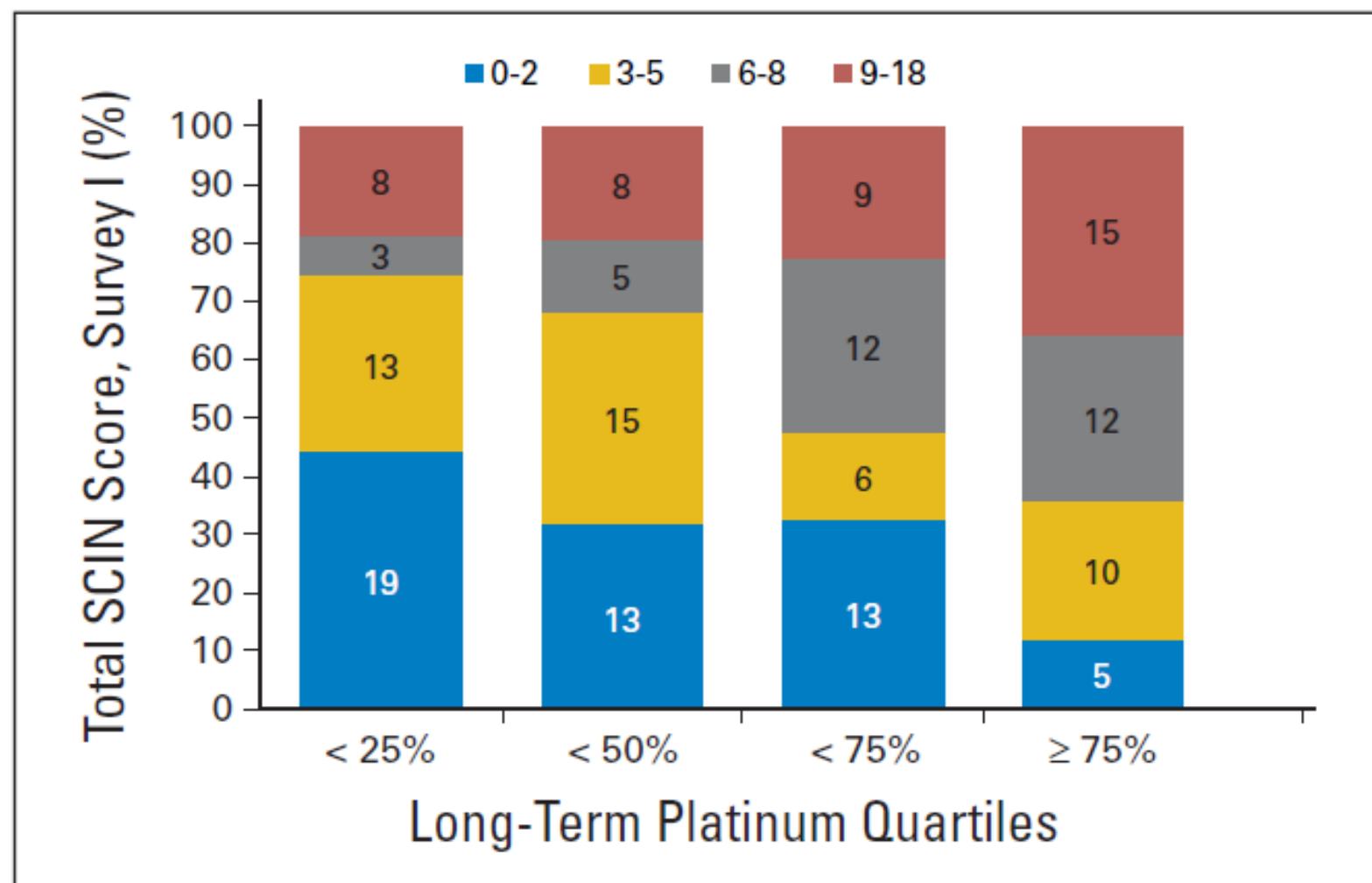
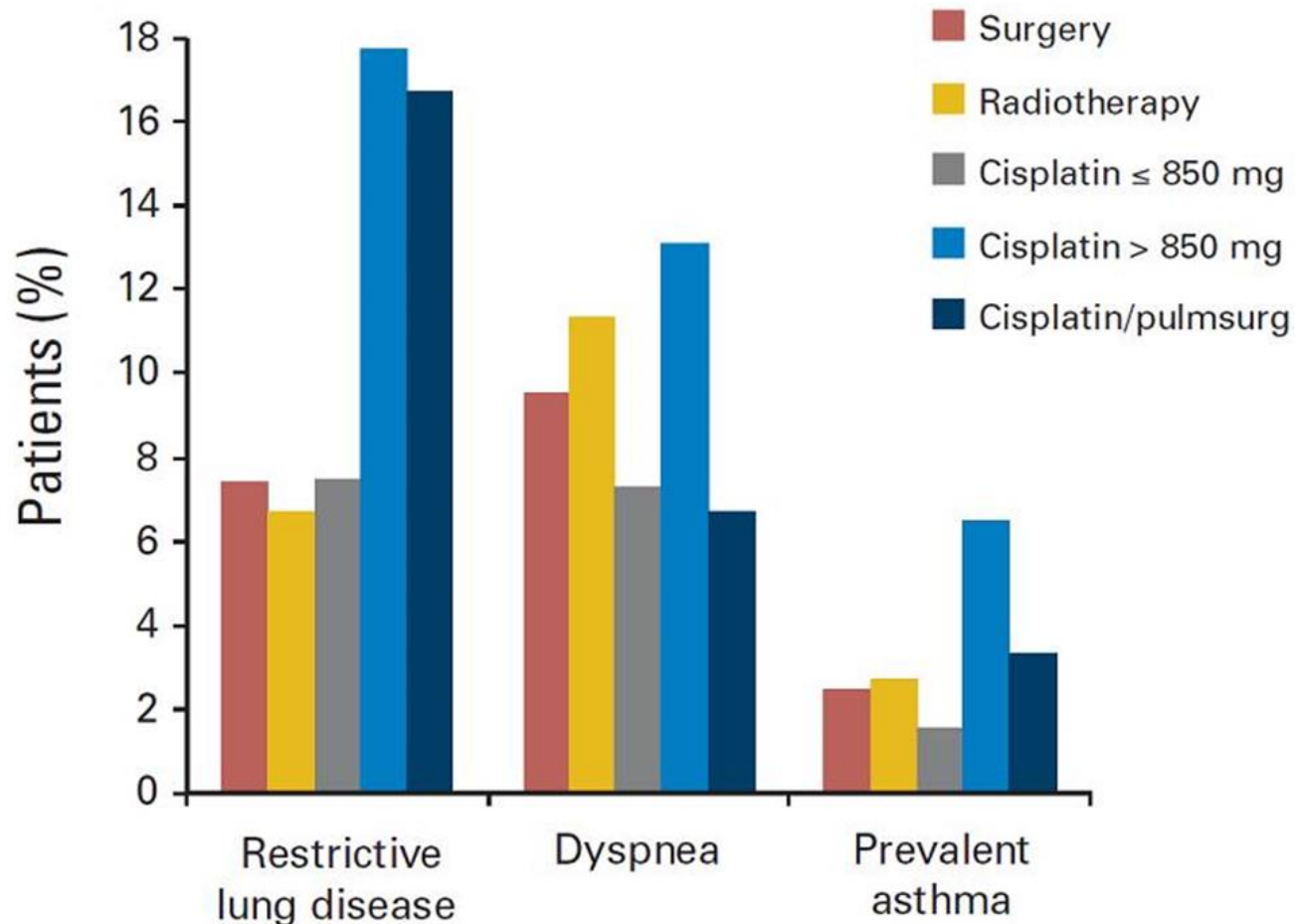
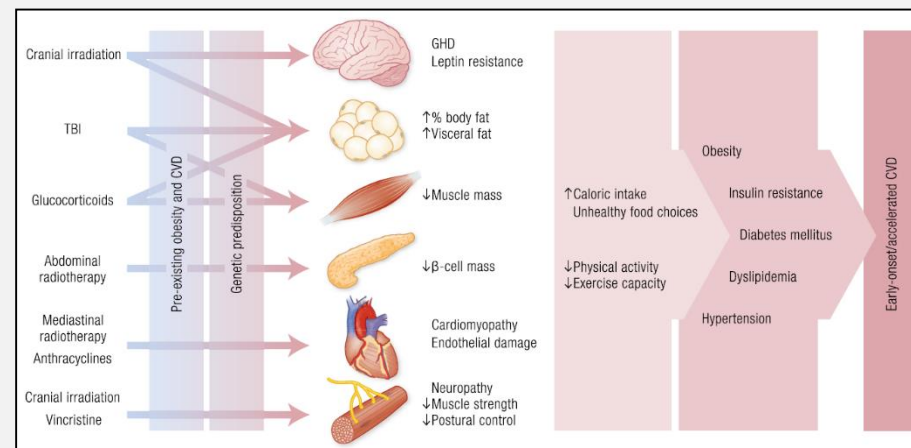
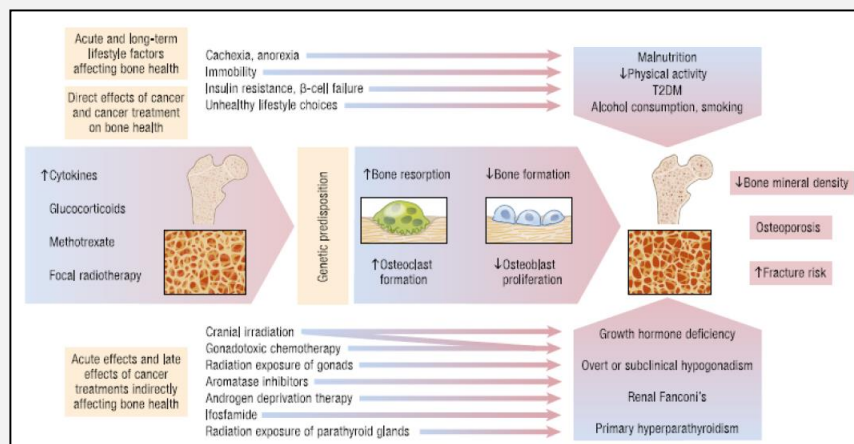
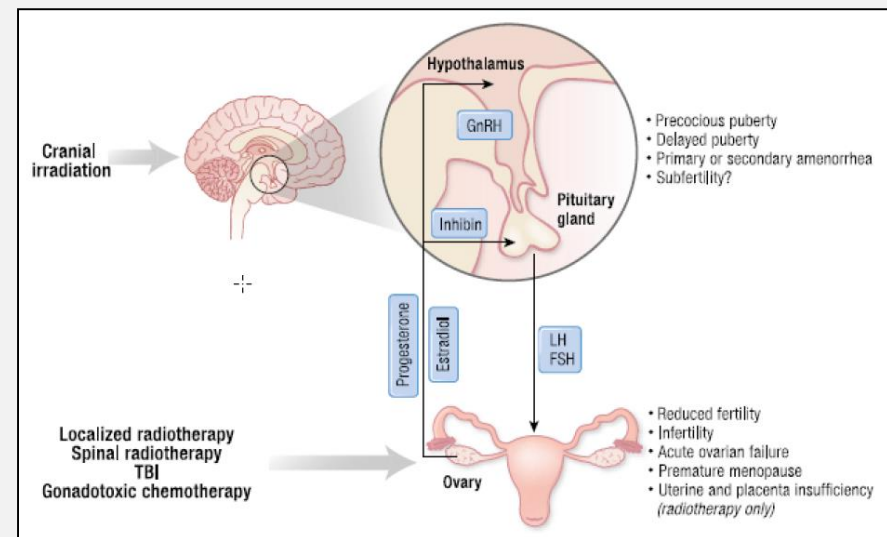
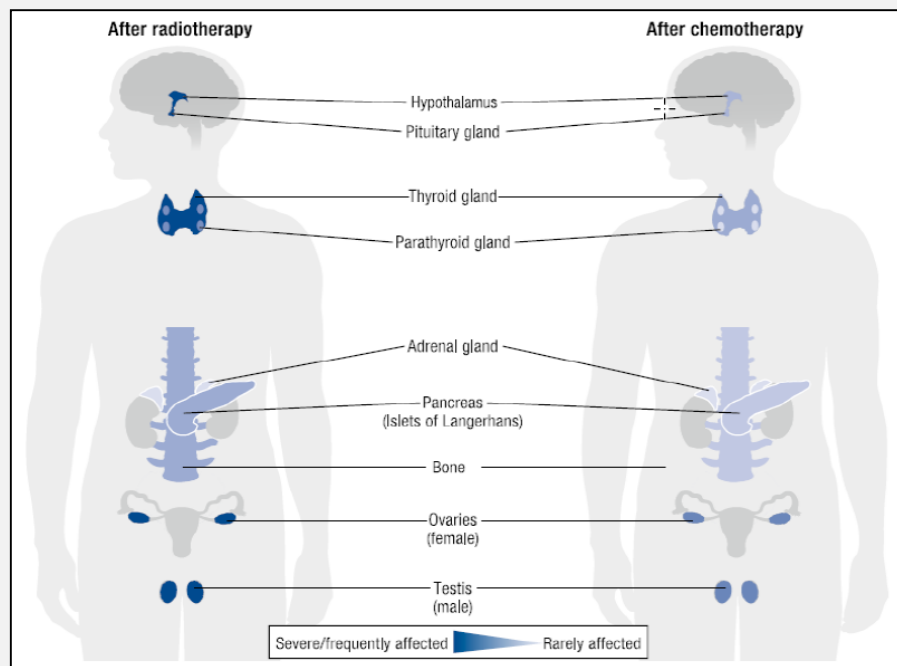


Fig 2. Number of survivors of testicular cancer according to quartile of serum platinum level and total Scale for Chemotherapy-Induced Neuropathy (SCIN) score at Survey I (2000).

Pulmonary problems 10 years after treatment for testicular cancer





Paternity Following Treatment for Testicular Cancer

Marianne Brydøy, Sophie D. Fosså, Olbjørn Klepp, Roy M. Bremnes, Erik A. Wist, Tore Wentzel-Larsen, Olav Dahl

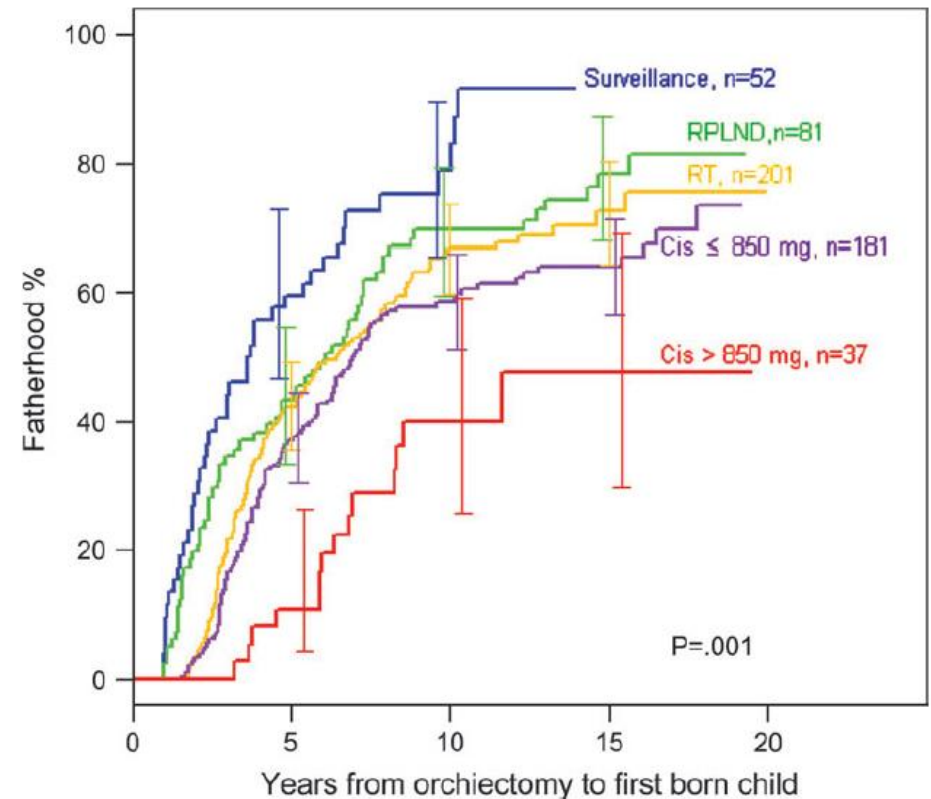
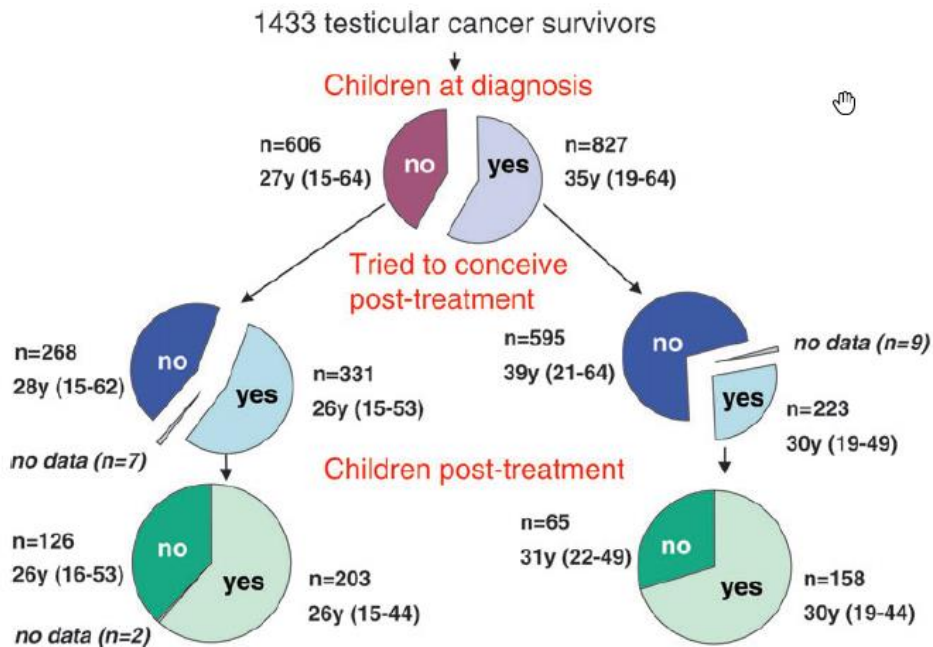
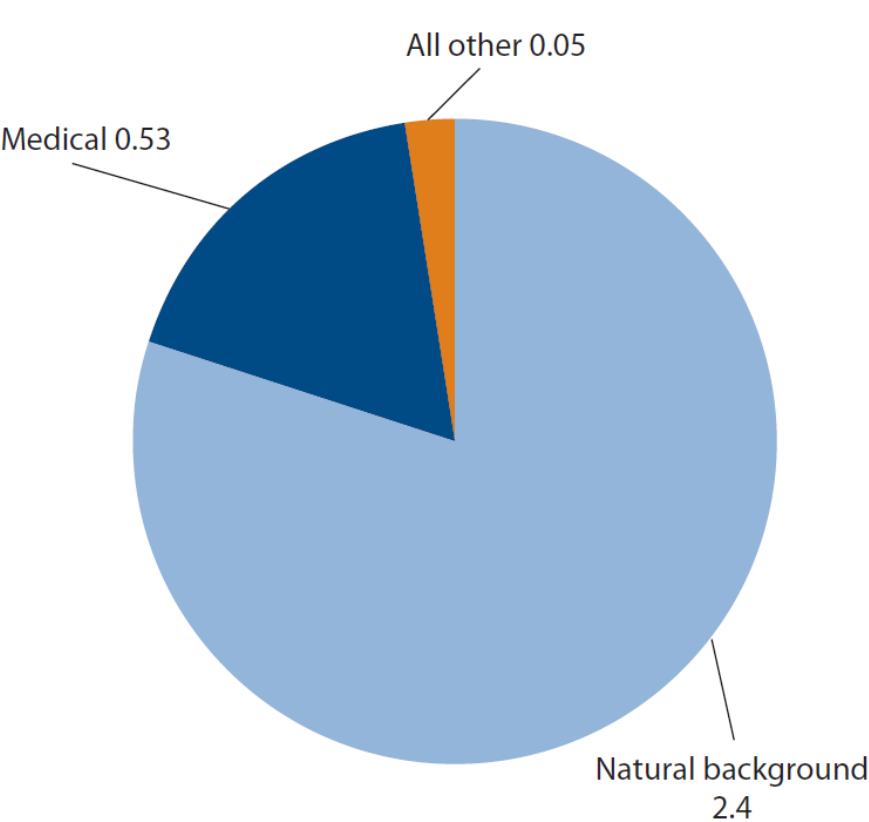
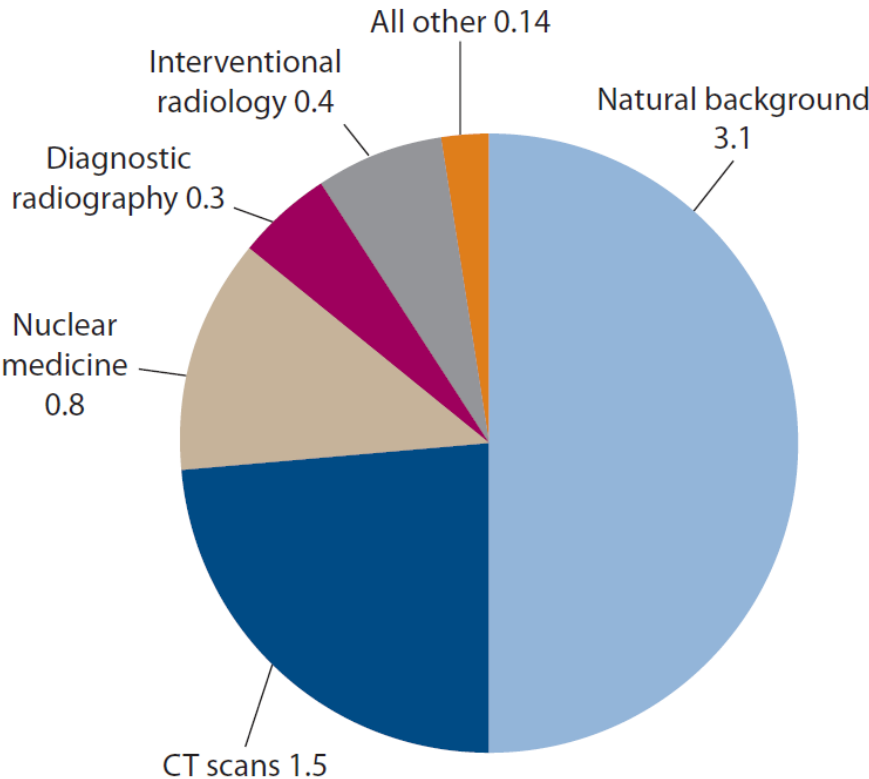


Figure XII. Annual per caput effective dose (mSv) for the United States population in 1980 [M37]



1980:
Medical 0.53 mSv
17.8%

Figure XIII. Annual per caput effective dose (mSv) for the United States population in 2006 [N26]



2006:
Medical 3.0 mSv
48.1%

UNSCER report 2008



Physical Well Being and Symptoms

Functional Activities
Strength/Fatigue
Sleep and Rest
Overall Physical Health
Fertility
Pain

Psychological Well Being

Control
Anxiety
Depression
Enjoyment/Leisure
Fear of Recurrence
Cognitive /Attention
Distress of Diagnosis and Control of Treatment

**Cancer
Survivorship**

Social Well Being

Family Distress
Roles and Relationships
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Appearance
Enjoyment
Isolation
Finances
Work

Spiritual Well Being

Meaning of Illness
Religiosity
Transcendence
Hope
Uncertainty
Inner Strength

What can/should we do

- Inform patients about the risk of late toxicities
- Inform about importance of life style issues
- Inform about having regular checks
(weight, blood pressure, lipids, glucose, hormones ...)
- Inform and hook-up with general practitioner
- Provide a cancer survivorship plan

Survivorship Care Plan



Survivorship care plan to be discussed with and delivered to the patient (and other health care providers) during uro-oncological follow-up

You were operated year: _____ for testicular cancer, subtype:

☐ Seminoma ☐ Non-seminoma

☐ No dissemination of disease was confirmed

☐ Dissemination of disease was confirmed to: _____

Treatment

☐ No additional treatment

☐ Chemotherapy (year: _____ regimen: _____ number of cycles: _____)

☐ Radiotherapy (year: _____ field: _____ total dose: _____)

☐ Additional surgery (year: _____ type of surgery: _____)

Hospital: _____

Responsible doctor: _____

Telephone: _____

You have completed the treatment for testicular cancer. This survivorship care plan should be shown in case of future contact with the health services.

Some side-effects from testicular cancer treatment may emerge during the years after treatment, for example sub-normal values of male hormone testosterone. In addition, men previously treated with chemotherapy and/or radiotherapy have an increased risk for hypertension, overweight, elevated cholesterol levels and cardiovascular disease. Thus, it is advisable to keep away from smoking, avoid overweight and exercise regularly.

Although the risk of a new tumor in the remaining testicle is low, regular self-exams are important. Furthermore, another cancer type may develop after treatment with chemotherapy and/or radiotherapy.

In addition to standard oncological follow-up/or at termination of oncological follow-up, we recommend controls every 2.-3. year to check for long-term and late effects of the cancer treatment. The purpose of these controls is to prevent, identify and possibly treat risk factors which eventually could lead to complications, e.g. cardiovascular disease. If abnormal values are detected at these controls, further follow-up at the general practitioner is initiated.

We recommend that the following are controlled by the general practitioner:

- 1) Blood pressure, height, weight, waist and hip circumference
- 2) Blood samples including fasting lipids (total cholesterol, HDL and LDL-cholesterol, triglycerides), fasting glucose and hormones (testosterone, FSH and LH)
- 3) Clinical examination in case of any symptoms

Survivorship care plan has to be
individualized



Basics of a survivorship care plan

- Details on histology & initial stage
- Details on treatment delivered (*drugs, schedules, modalities*)
- Recommendation for a follow-up schedule
- Identify individual long-term toxicities that might occur
- Give life-style recommendations
- Recommendations for checks & preventive interventions
- Identify possible additional resources (e.g. support groups)
- Identify the person in charge for follow-up

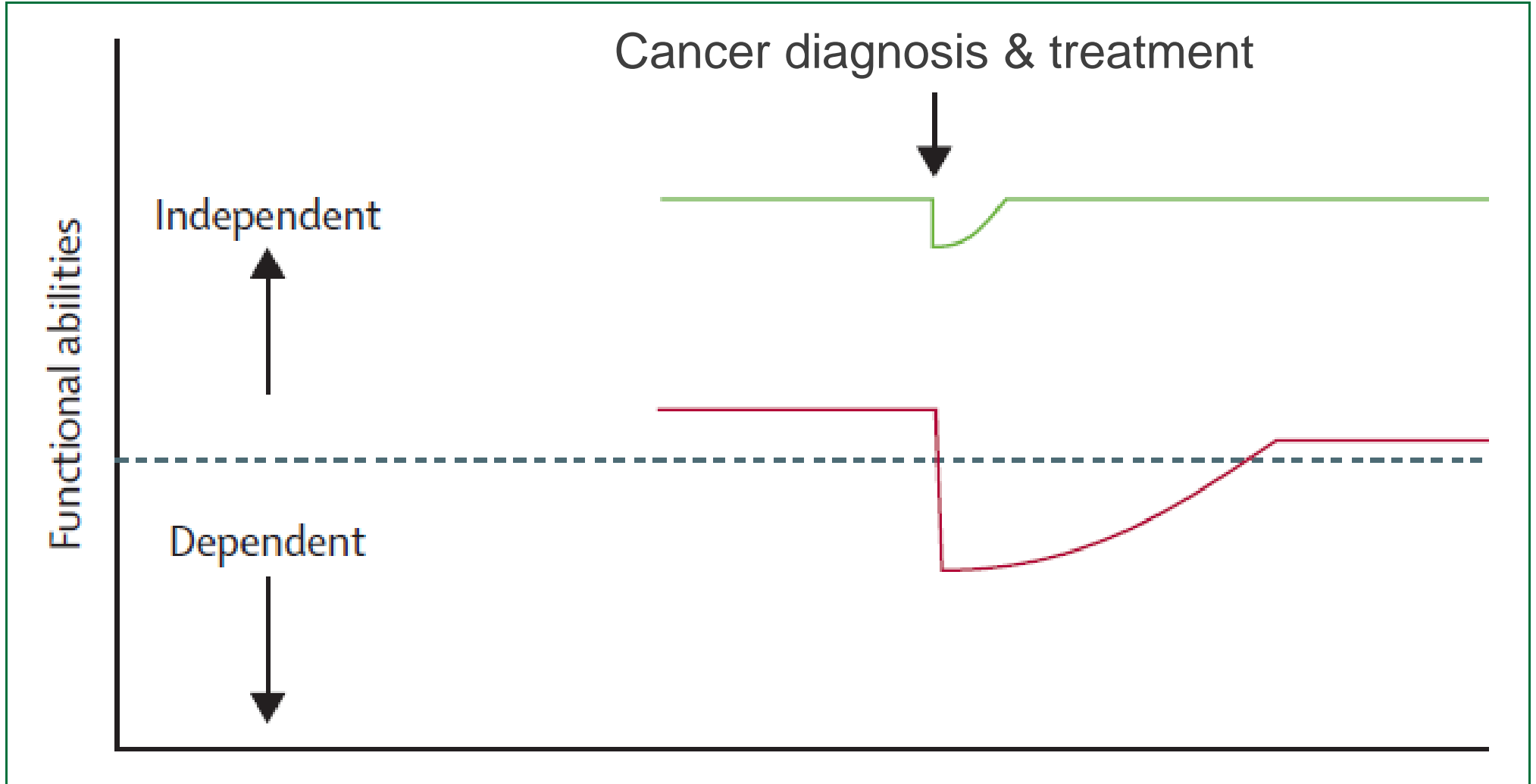


Interdisziplinäre Cancer Survivor Nachsorgesprechstunde

Viele Betroffene (so genannte «Cancer Survivors») leiden gelegentlich noch Jahre nach erfolgreicher Krebsbehandlung an Spätnebenwirkungen der durchgeführten Therapie. Nicht immer sind diese augenscheinlich. Häufig bedarf es zur Erkennung und Therapie besondere Kenntnisse.

Aus diesem Grund wird ab Ende 2018 eine Spezialsprechstunde für «Cancer Survivors» am InselSpital angeboten werden.

Don't push me 'cause I am close to the egde



Take home messages

- Cancer Survivors become increasingly frequent

Take home messages

- Cancer Survivors become increasingly frequent
- They may suffer from long-term sequela

Take home messages

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- They may suffer from long-term sequela
- Survivorship care plan helps to address these issues

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- General physicians / family doctors in charge in close collaboration with and back-up of oncologists

Take home messages

- Cancer Survivors become increasingly frequent
- They may suffer from long-term sequela
- Survivorship care helps to address these issues
- General physicians / family doctors in charge in close collaboration with and back-up of oncologists
- **Dedicated survivorship clinics should support**

Take home messages

- Cancer Survivors become increasingly frequent
- They may suffer from long-term sequela
- Survivorship care helps to address these issues
- General physicians / family doctors in charge in close collaboration with and back-up of oncologists
- Dedicated survivorship clinics should support
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Take home messages

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- **Resources allocated for cancer survivorship**



Resources

- Shapiro et al. (2018) Cancer Survivorship. New Engl J Med 379:2438-2450
- Suh et al. (2020) Late mortality and chronic health conditions in long-term survivors of early-adolescent and young adult cancers: a retrospective cohort analysis from the Childhood Cancer Survivor Study. Lancet 21:421-435
- Hewitt et al. (2006) From cancer patient to cancer survivor: lost in transition. <http://nap.edu/11613>
- <https://canceradvocacy.org>
- <https://www.progressreport.cancer.gov/after>
- https://www.nccn.org/professionals/physician_gls/#supportive