



Is access to cancer screening uniform among under-resourced environments?

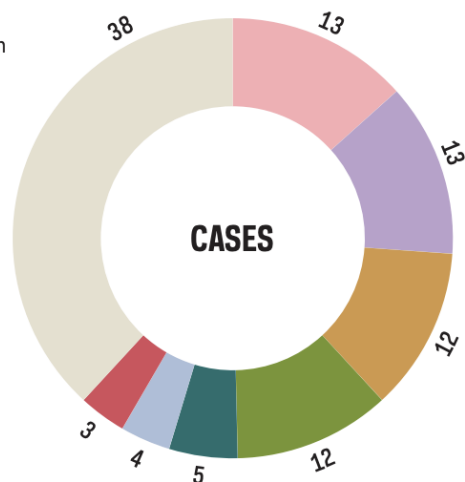
Fiona J Gilbert, Professor of Radiology, University of Cambridge

Europe has one-tenth of the global population, yet one in four of all cancers occur in this region.

Estimated number of new cancer cases vs. deaths and distribution (%) by type, both sexes, 2018*

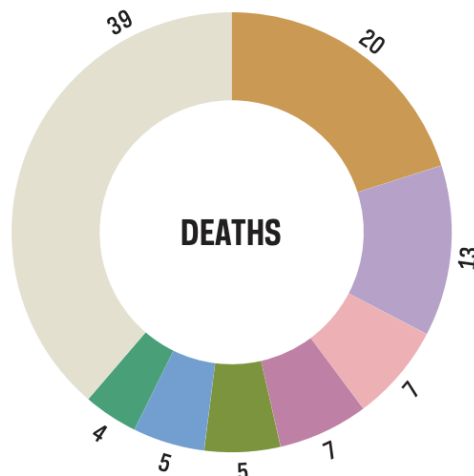
- Breast
- Colorectum
- Lung
- Prostate
- Bladder
- Melanoma of skin
- Kidney
- Pancreas
- Stomach
- Liver
- Other cancers

Cancers of the breast, lung, and colorectum are the most frequent in this region.



Total estimated
3,911,000

*Excludes non-melanoma skin cancer.



Total estimated
1,930,000

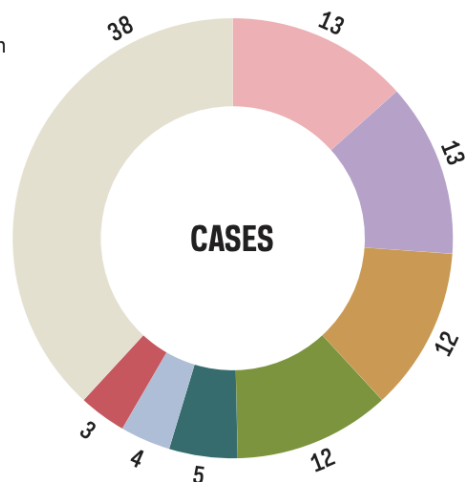
Leading causes of cancer death in Europe:

- lung (388,000 deaths, 20%)
- colorectum (242,000, 13%)
- female breast (138,000, 7%)
- pancreas (128,000, 7%).

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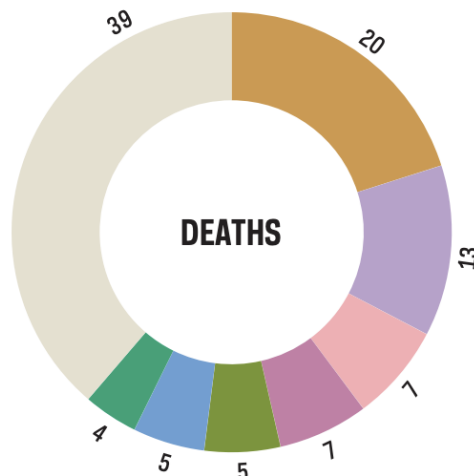
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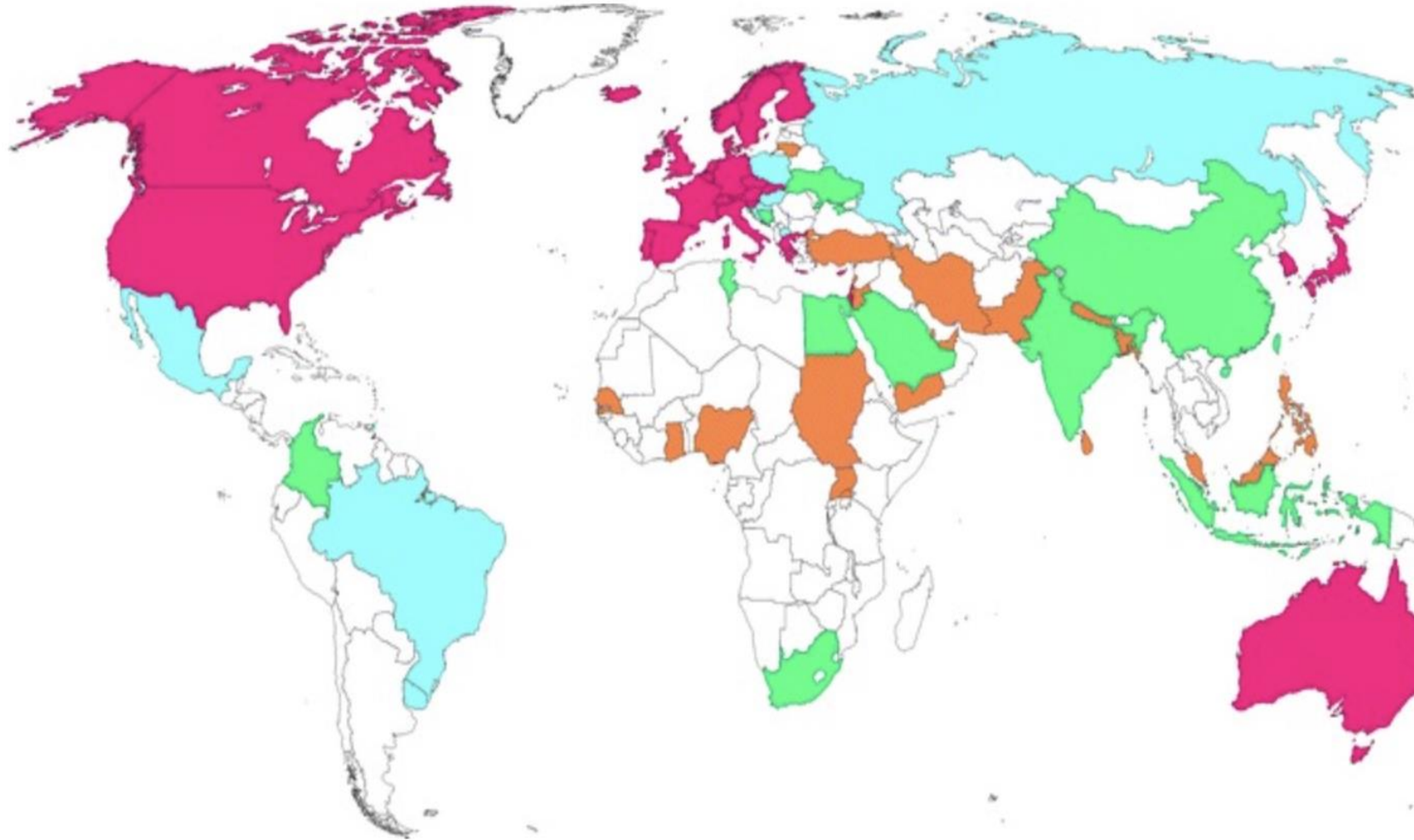
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Europe has disparities in access to cancer care and with significant social inequalities between and within European countries, which impact cancer incidence, survival and mortality

- Strikingly disproportionate increase in prevalence of cancer and related mortality in low- and middle-income countries LMICs
- Despite lower incidence than high income countries, total cancer-related mortality is significantly higher in LMICs, especially in people younger than 65 years of age
- WHO advocates **early detection**

BUT early detection cannot be assumed to be effective, where limited downstream resources may be overwhelmed and inadequate treatment capacity.

Screening Strategies in Worldwide - Breast



Red: Well developed countries

Blue: nationwide or localized mammography screening programs (Russia, Brazil, Mexico, Uruguay, Hungary, Croatia, Poland and Macedonia)

Green: trials in particular populations evaluating mammography screening accuracy or cost-effectiveness (South Africa, China, India, Indonesia, Tunisia, Trinidad and Tobago, Bosnia and Herzegovina, Colombia, Ukraine, Saudi Arabia and Egypt)

Orange: access to mammography

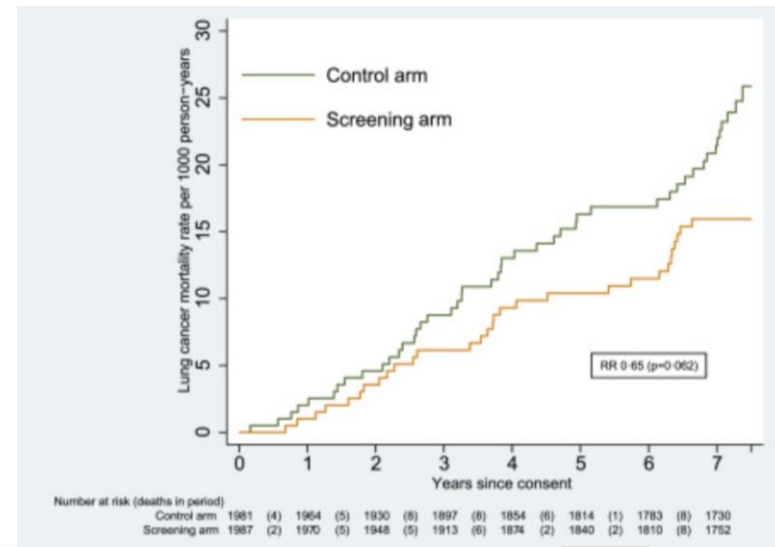
Li & Shao. Springerplus 2015; 4: 615

The National Lung Screening Trial (NLST) and the Dutch–Belgian NELSON trial - LDCT reduces lung-cancer-specific mortality by 20%.

NLST showed a reduction in all-cause mortality of 6.7%

United Kingdom Lung Screening Trial (UKLS)

invited 50–75 years to return a postal questionnaire.
31% responded and 11.5% eligible (>30pack/yr)



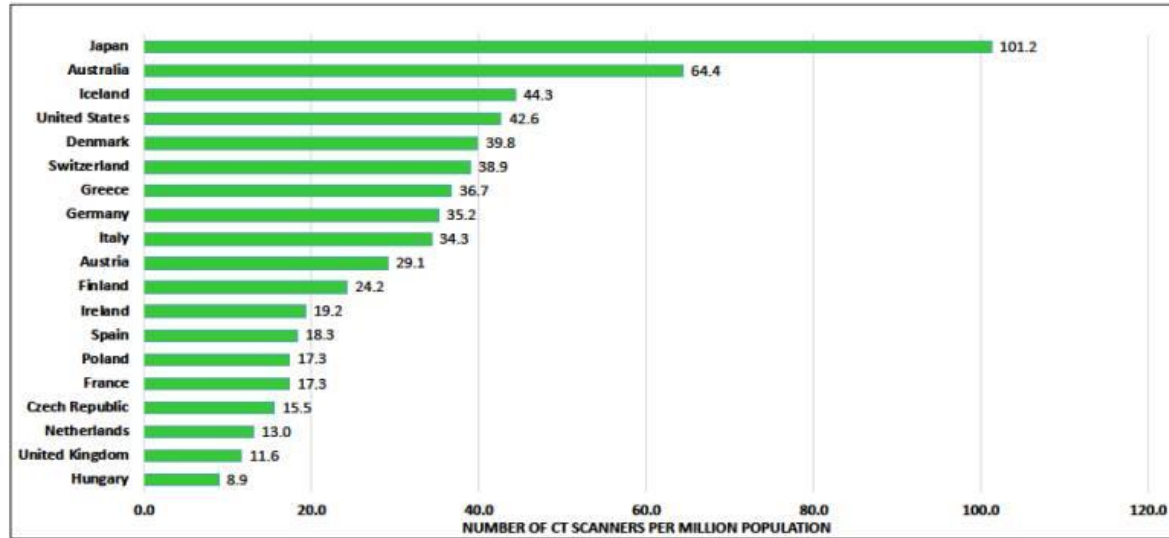
LDCT for current and prior smokers

Poland
Italy
Croatia
Romania

Pilot projects

England

Screening Strategies in Europe - Lung



CT scanners/million population

In UK only 11.6/M CT and 4.7 radiologists/100,000

1. By 2024 the European Commission should develop and publish new guidelines on lung cancer screening for high-risk groups
2. By 2026 at least five EU Member States should have incorporated these guidelines into their national cancer plans
3. By 2027, all EU Member States should have put in place a strategy for the early detection of lung cancer in the high-risk population.

Is access to cancer screening uniform among under-resourced environments?

Countries with centrally resourced healthcare systems aim to deliver equitable access to all patients

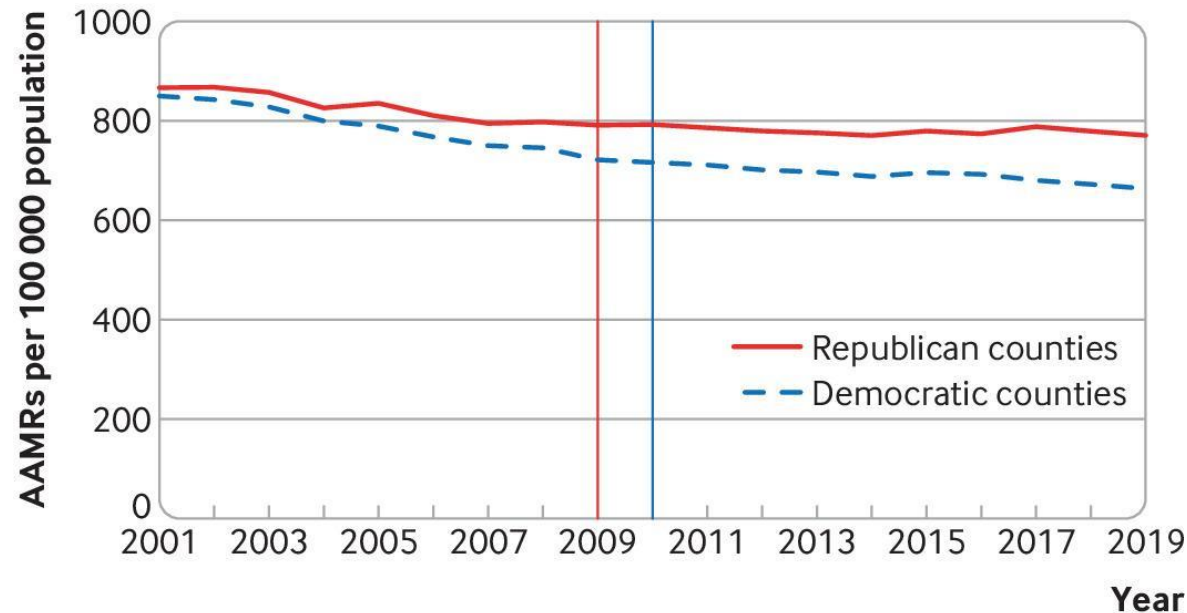
“A screening program must **be acceptable, equitable, accessible, sustainable, and economically efficient for the target population**”

Policy makers strive to ensure equal uptake across all demographic groups

- method of invitation/communication can disadvantage certain parts of the population
- delivery of healthcare/radiology can disadvantage some groups – transport, fear of radiation

Non centralized Healthcare – USA

Age adjusted Mortality Rates/100,000 2001-2019



Decreased by

16% in Democratic

11% in Republican

Very complex reasons for this – Affordable Care Act 2008

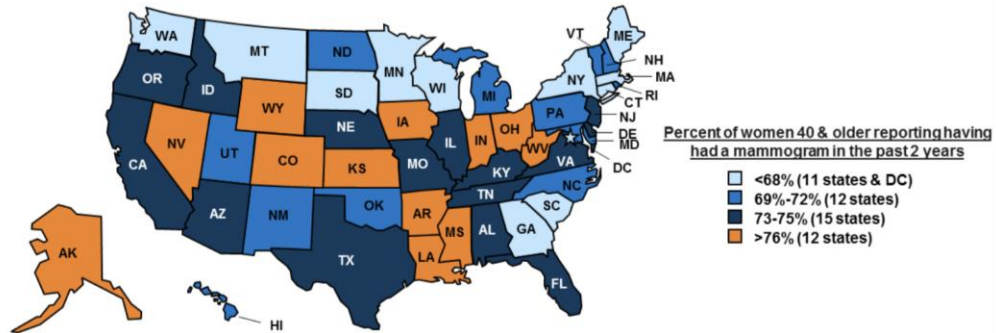
Rural republicans had smallest decrease in mortality

Largest contributors of widening gap heart disease, chronic respiratory disease, unintentional accidents, suicide

Equity of breast screening across USA

Mammography Rates Vary Across States

73% of women 40 and older in the U.S. report having had a mammogram in the past 2 years



NOTES: Among women 40 and older who reported having had a mammogram within the past 2 years.
SOURCE: Kaiser Family Foundation analysis of the Center for Disease Control and Prevention (CDC)'s Behavioral Risk Factor Surveillance System (BRFSS) 2014-2016 Survey Results. Three-year merged dataset used to ensure adequate sample sizes for statistical analysis.



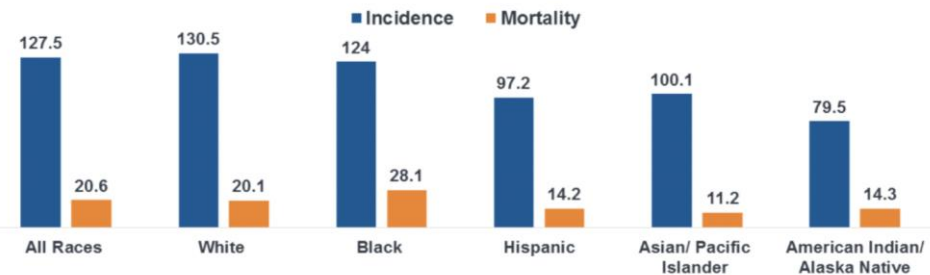
Figure 4: Mammography Rates Vary Across States

But marked disparity in mortality across different ethnic groups

**Reasonably good coverage across all states
mainly due to insurance covering mammography**

White Women Have the Highest Incidence of Breast Cancer, but Mortality Rates are Higher Among Black Women

Breast Cancer Incidence and Mortality Rates by Race/Ethnicity, 2012-2016



NOTE: SEER 21 2012-2016. Data are age-adjusted rates per 100,000 persons.
SOURCE: SEER Cancer Stat Facts: Female Breast Cancer. National Cancer Institute. Accessed Sept 11, 2017.



Figure 2: White Women Have the Highest Incidence of Breast Cancer, but Mortality Rates are Higher Among Black Women

Social Development Goals (2015)

- Goal is to fight inequality across all realms, including social, environmental, and economic (UN)
- Total cancer-related mortality is significantly higher in LMICs, especially for people younger than 65 years of age –
- Premature mortality and lost years of productivity with greater economic impact is especially problematic for these countries.

Four key priorities to promote health services for cancer control:

1. capacity building in oncologic health services research, policy, and planning relevant to LMICs
2. development of high-quality health data sources, population-based cancer registries, to identify the process and outcomes of cancer management to ensure that they are iterative and achieve quality cancer control
3. more oncology-related economic evaluations in LMICs
4. exploration of high-quality models of cancer control in LMICs as opposed to the extrapolation of experiences from HICs.

- Most do not have cancer registries - 1% of Africa, 4% of Asia, 4% of South and Central America compared with 80% of North America
- Tiny proportion of health budget allocated to health policy 0.007% instead of 0.1%
- Data on treatment outcome is lacking.
- only 22% of African countries and 43% of Southeast Asian countries report availability of anticancer therapy, with the specific therapies not specified; this is in marked contrast to a reported availability that exceeds 90% in Europe

EU - Tackling Social Inequalities in Cancer Prevention and Control

1. Embed equity within the cancer prevention and control policies in all European Union Member States –

Formulate specific objectives that aim to tackle social inequalities in cancer especially socially vulnerable groups and include indicators of social inequality.

2. Align cancer prevention and control policies with a Health in all Policies approach –

Includes experts on social inequalities in health to embed within cancer policies, assess the impact of current and new policies, produce a public report on social inequalities in cancer.

3. Adopt a Health Equity Impact Assessment framework –

link cancer registries to different databases to monitor social inequality on cancer outcomes

4. Engage and empower communities and patients in cancer prevention and control activities –
Patient associations, socially vulnerable groups should be consulted.
5. Promote the exchange of good practice and support development of professional expertise in social inequalities in cancer in all European Union Member States.
6. Support the development of European **research programmes that help deliver equity** in cancer prevention and control in all European Union Member States.

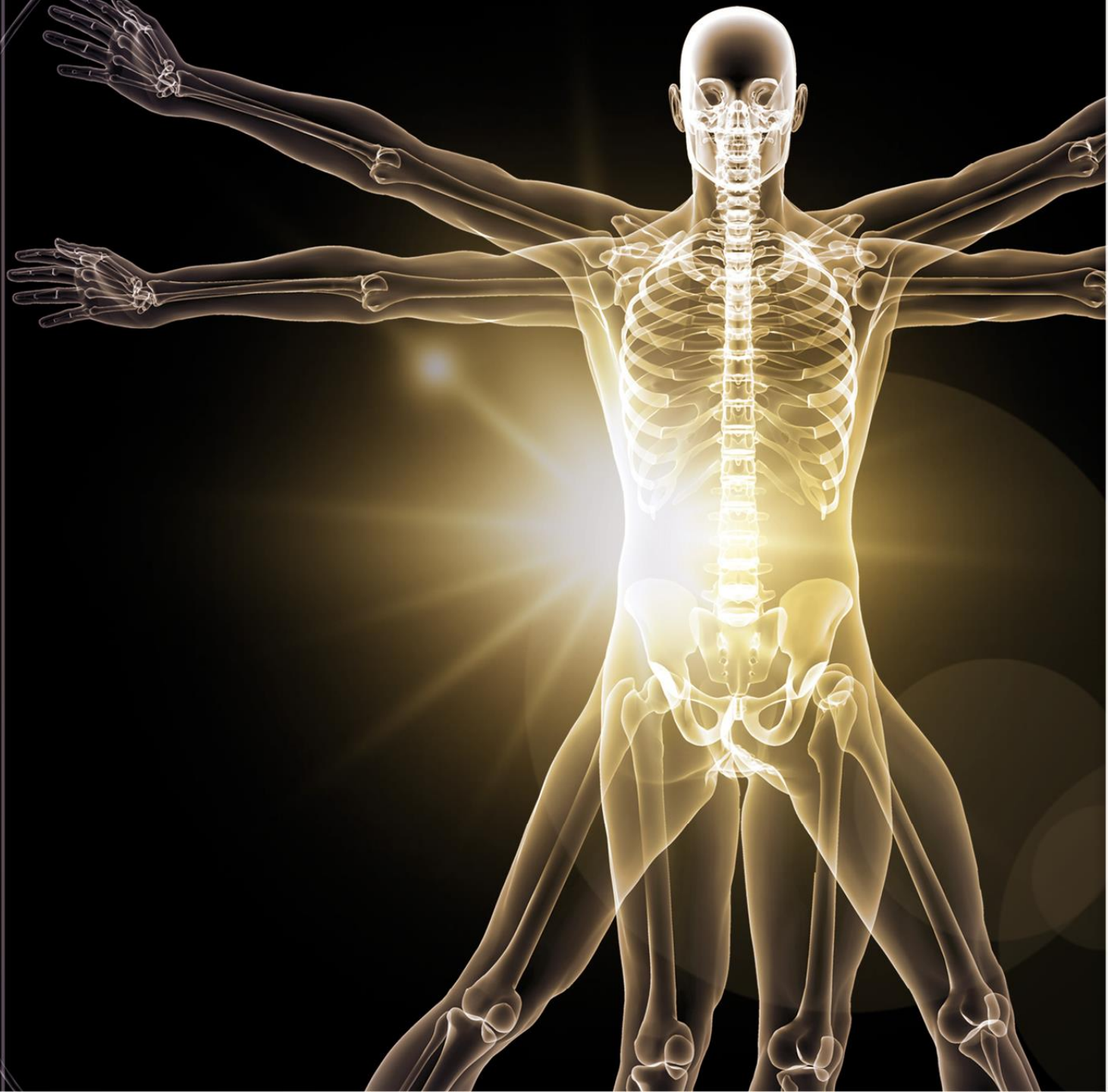
Primary and Secondary Prevention:

7. Ensure that tobacco and alcohol control policies, as well as other interventions promoting healthy behaviours, are addressed to the whole population, with additional emphasis among socially vulnerable groups.

8. Improve equitable access and compliance with cancer screening programmes –

Include all population especially socially vulnerable

Include Equity as a QA measure.



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