

Early Detection and Screening

ICCC-3

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The Prevention Hierarchy Paradigm

- **Primary Prevention**
 - Behavioral (do and do not do)
 - Chemoprevention (vaccinations and medications)
 - Surgical (preventive removal of organs at risk)
- **Secondary Prevention** (early detection)
 - Detection of risk-factors/ high-risk situations/ pre-malignant lesions (Primary prevention?)
 - Detection of malignancies at an early(ier) stage
- **Tertiary Prevention**

What is screening?

- An organized, population-based, activity (involving a technology) that is meant to bring about a reduction in mortality rate of the disease at stake. Usually carried out by national/local governments/organizations.
- Different from case-finding which is individually initiated and carried out
- Population outcome of screening usually much superior to case-finding

Candidates for screening

- Breast cancer
- Cervical cancer
- Colorectal cancer
- ??? Lung, prostate, ovarian cancer....

Advantages of organized screening

- Policy – clear message to population
- Invitation – better uptake
- Resources set aside to promote success
- Quality control program to improve outcome
- Fairness, equity

On making screening policies

- **Disease** (amenable for early detection, significant: mortality/ prevalence/ QOL/ cost)
- **Technology** (Good/ cheap / easy / RCT proven)
- **Population** (high significance of disease, aware of disease, accepts screening measure)
- Resources (cost-effectiveness/ feasibility)
- **NOT ALL COUNTRIES NEED SAME POLICY**

Table 4.3: Colorectal Cancer: Age-Standardized Incidence Rates* and Incidence Rate Ratios (IRR) of Colon and Rectal Cancers in Selected Countries and in Cyprus, Israel (Jews and Arabs), Egypt, Jordan, and US SEER – 1993-1997

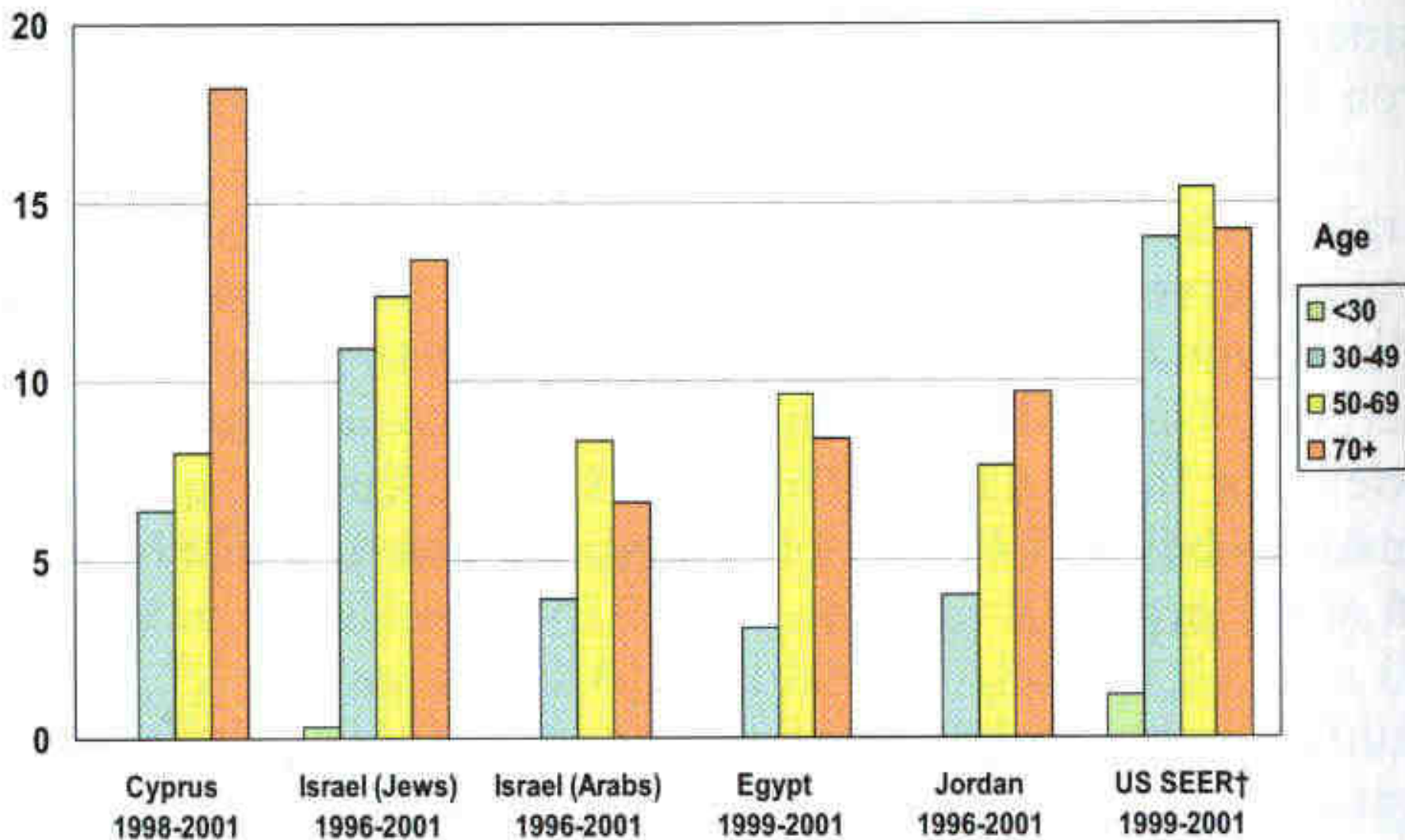
Country/Registry	Male			Female		
	Colon	Rectum	IRR	Colon	Rectum	IRR
Canada	25.7	15.8	1.6	19.8	8.8	2.2
China - Shanghai	11.5	9.0	1.3	12.0	7.5	1.6
Japan - Osaka	24.7	15.1	1.6	15.5	7.3	2.1
Denmark	20.5	17.6	1.2	18.4	11.2	1.6
Poland - Krakow	14.5	11.7	1.2	10.4	6.9	1.5
Cyprus	12.7	6.3	2.0	11.2	4.8	2.3
Israel (Jews)	29.6	12.1	2.4	24.7	8.6	2.9
Israel (Arabs)	10.5	6.8	1.5	9.4	4.2	2.2
Egypt →	4.6	2.3	2.0	3.3	1.8	1.8
Jordan →	7.6	3.9	1.9	7.2	4.0	1.8
US SEER (Whites) →	25.9	13.0	2.0	19.6	8.2	2.4
US SEER (Blacks)	32.3	12.7	2.5	26.0	8.2	3.2

Table 8.2. Breast Cancer: Age-Standardized and Age-Specific Incidence Rates among Females in Cyprus, Israel (Jews and Arabs), Egypt, Jordan, and US SEER – 1996-2001*

	Cyprus 1998-2001	Israel (Jews) 1996-2001	Israel (Arabs) 1996-2001	Egypt 1999-2001	Jordan 1996-2001	US SEER† 1999-2001
Total rate‡	57.7	93.1	36.7	49.6	38.0	97.2
Age Groups (Rates)§						
00-04 y	0.0	0.0	0.0	0.0	0.0	0.0
05-09 y	0.0	0.0	0.0	0.0	0.0	0.0
10-14 y	0.0	-	0.0	0.0	0.0	0.1
15-19 y	0.0	0.3	0.0	-	-	0.2
20-24 y	-	1.7	0.0	1.4	0.8	1.3
25-29 y	4.9	9.5	8.7	9.8	5.7	7.1
30-34 y	27.2	27.8	11.8	28.9	20.8	25.2
35-39 y	43.5	69.5	35.2	63.6	47.1	61.7
40-44 y	96.3	124.4	53.4	96.7	73.6	117.5
45-49 y	148.8	205.9	93.5	144.9	82.6	192.1
50-54 y	185.8	275.3	104.2	171.5	129.3	253.1
55-59 y	166.7	310.1	124.0	181.2	114.6	332.4
60-64 y	198.3	346.8	144.0	144.2	134.8	386.8
65-69 y	195.1	359.1	136.8	105.0	131.1	431.1
70-74 y	225.4	405.1	118.7	94.1	103.0	458.7
75+ y	203.7	379.9	96.4	99.6	77.6	458.7

Figure 9.2. Cervical Cancer: Age-Standardized Incidence Rates* by Country and Age in Cyprus, Israel (Jews and Arabs), Egypt, Jordan, and US SEER – 1996-2001

Rate per 100,000



About Breast Cancer

Early Detection and Screening

Survivors

Resources and Publications

Events and Press Room

How to Help

Early Detection Plan

[Home](#) » [Early Detection and Screening](#) » Early Detection Plan

The best way to protect yourself against breast cancer is by maintaining routine checkups. The most appropriate course of action will depend on your age and your risk, so talk to your doctor about any risk factors that you may have.

Early Detection Plan

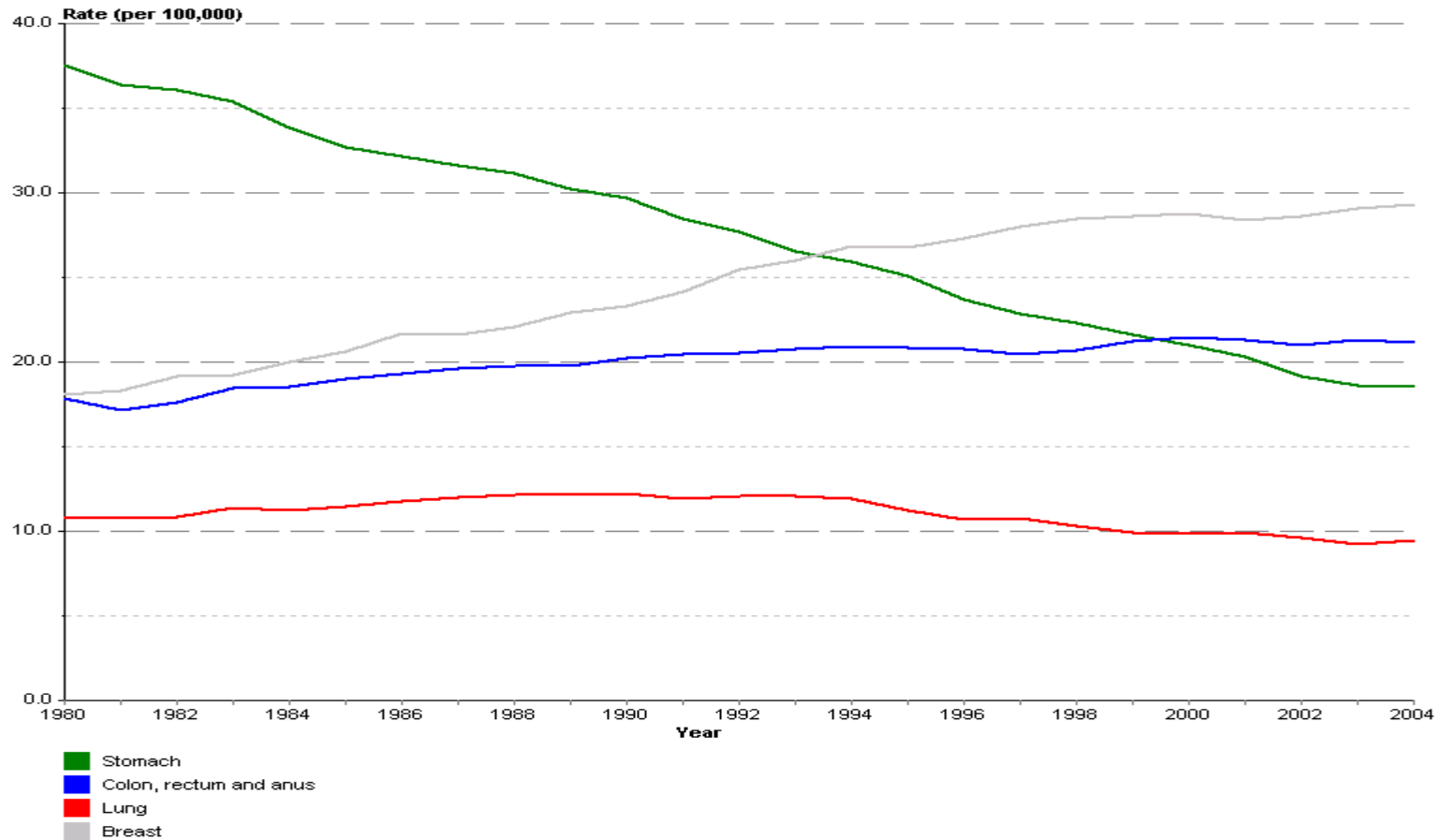
Women at normal risk can follow the Early Detection Plan below, which summarizes the national recommendations in [Breast Cancer](#).

Screening/ Age	20-29	30-39	40-49	50+
Self Breast Exam	Monthly	Monthly	Monthly	Monthly
Clinical Breast Exam	Once every 1-3 years	Once every 1-3 years	Annually	Annually
Mammogram	-----	-----	Every two years	Annually

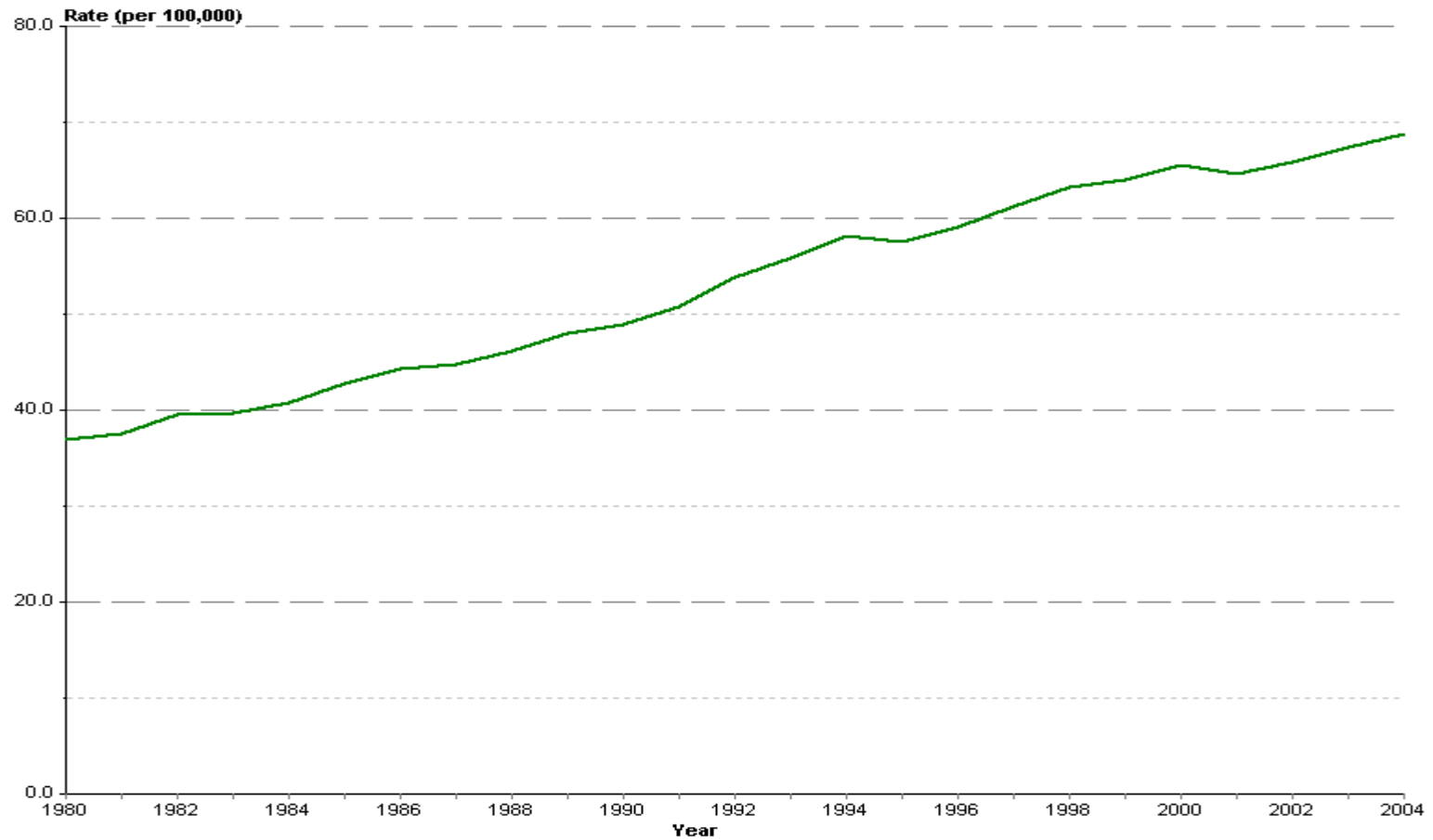
If you are a woman at increased risk, you have many options. Your doctor may suggest that you start getting annual mammograms earlier, and that you have more frequent Clinical Breast Exams (CBEs). Make sure that your doctor follows the National Breast Cancer Screening and Diagnosis Guidelines for [Breast Cancer](#).

Adopting a healthy lifestyle is also important. As risk factors that you can control, you should try keeping your weight within healthy limits, particularly after menopause. You should also commit to regular exercise, quit smoking, limit your alcohol consumption and maintain a well-balanced diet that is low in fats and includes plenty of fruits and vegetables.

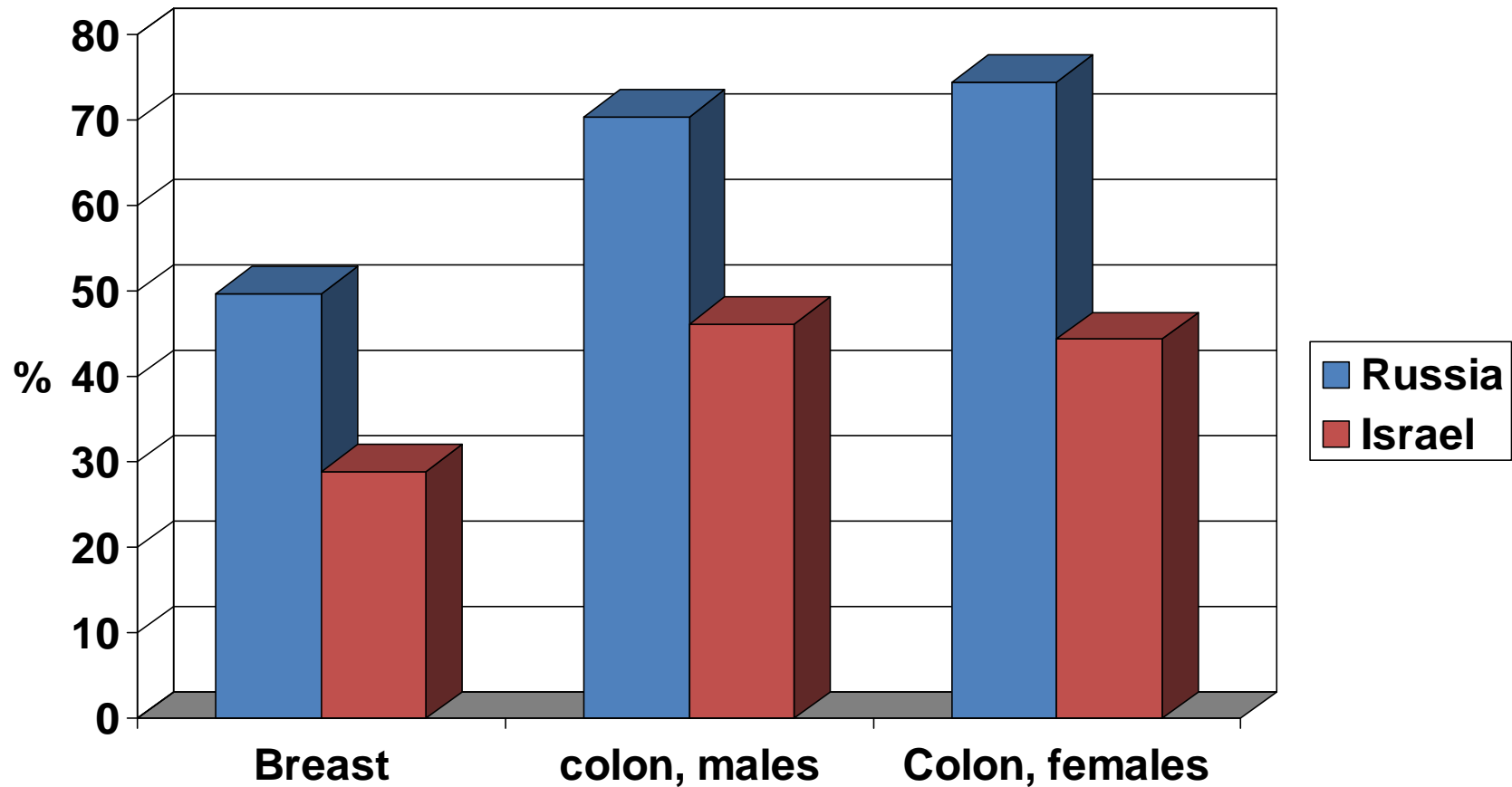
Cancer Mortality (ASR), Females age 20+ Russian Federation, 1980-2004



Female breast mortality, ages 50-85 Russian Federation



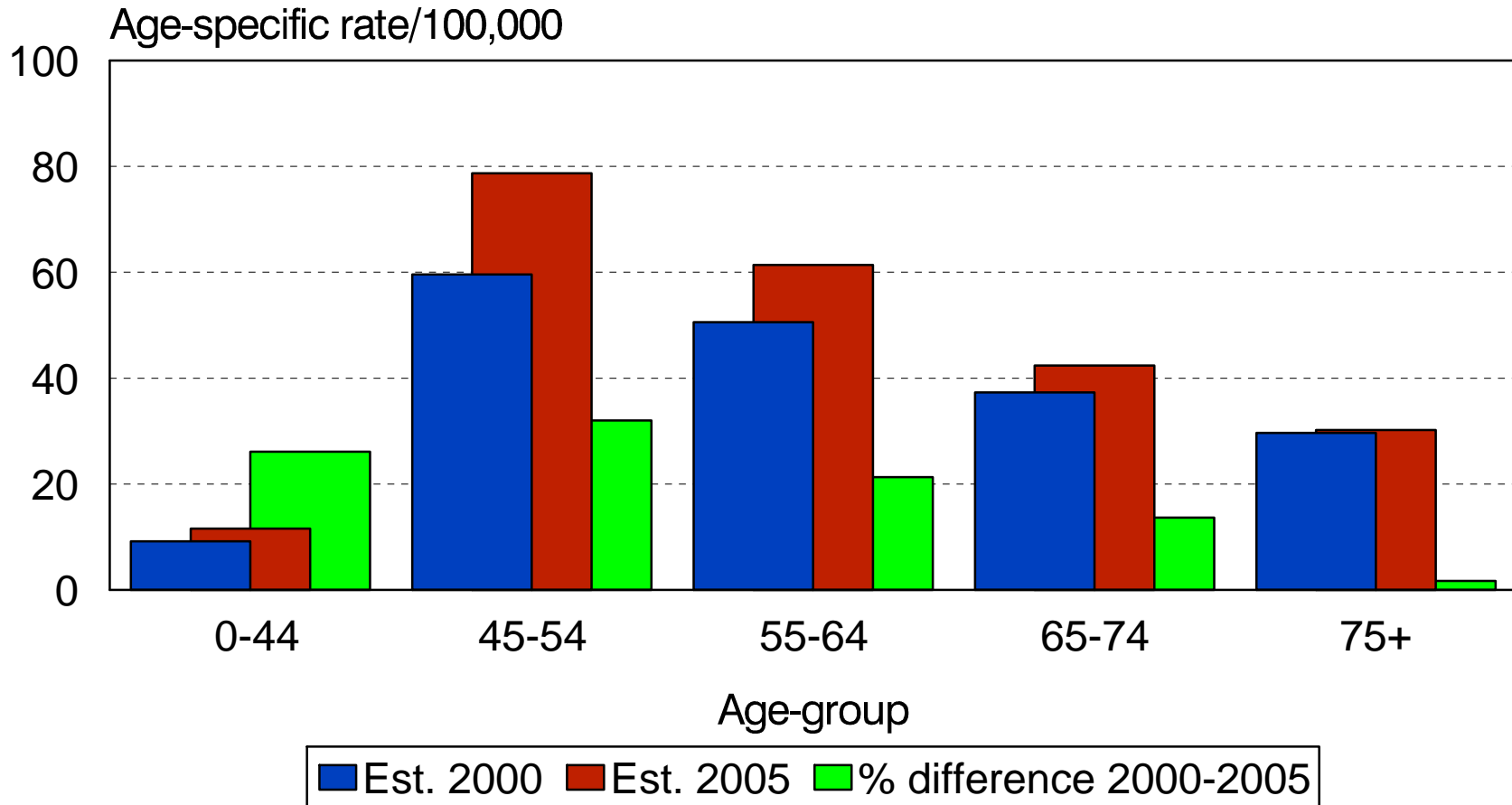
Mortality/incidence ratio Russia and Israel, 2002



Russia

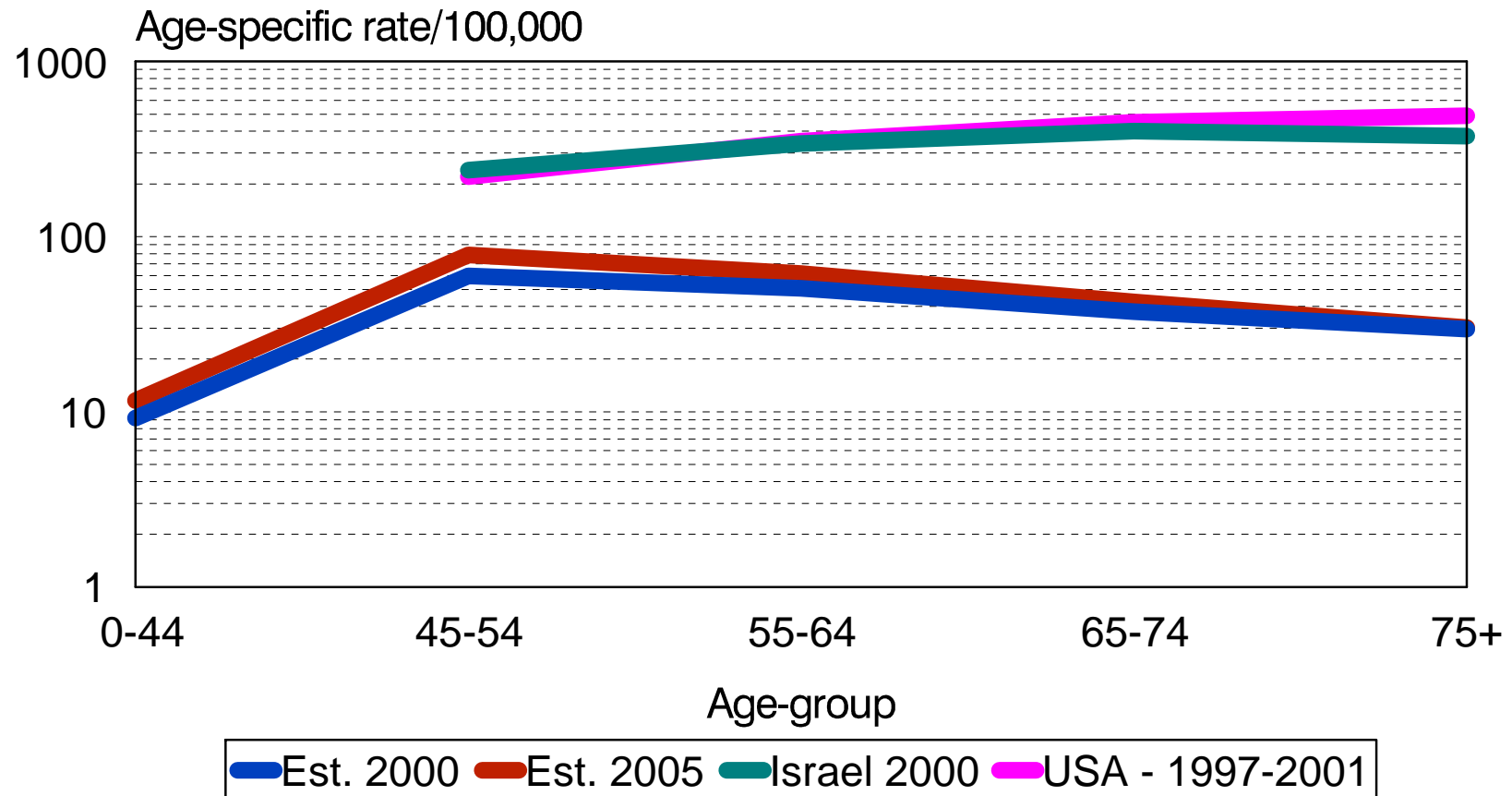
- Need for immediate action
- Screening measures to rely on standard tools such as mammography after 50 and FOBT

Estimated breast cancer incidence in China



Source: Yang et al, Cancer Epidemiol Biomarkers Prev 2005;14:243-50

Estimated breast cancer incidence in China



Source: Yang et al, Cancer Epidemiol Biomarkers Prev 2005;14:243-50

China

- Low rates but increasing steeply
- Main affected age group 45-54
- Start screening at 40-45
- Search for suitable and tailored tools (down-staging or early detection? feasibility/cost)

Thank you