香港防癌會
THE HONG KONG ANTI-CANCER SOCIETY

Guidelines for Cancer Prevention, Early detection & Screening

Breast cancer

Intervention	Recommendation
For **primary prevention** of breast cancer, women should eat diets rich in vegetables & fruits, perform regular physical activity & avoid alcohol	Fair evidence to recommend to general female population.
Breast Self Examination (BSE)	BSE has low sensitivity (17-26%) in detecting breast cancer. 2 large randomized controlled trials in Shanghai & Russia found that intensive instructions in BSE did not reduce mortality from breast cancer. Evidence is still insufficient to recommend for or against teaching or performing routine BSE. However, women are encouraged to be familiar with their breasts at different times of the month & at different ages and should report any obvious changes promptly.
Clinical Breast Examination (CBE)	Meta-analysis showed CBE had a sensitivity of 54% and specificity of 94%. For CBE, there was a lack of randomized controlled trial data to indicate whether CBE is effective in reducing breast cancer mortality. Thus, evidence is insufficient to recommend for or against routine CBE alone to screen for breast cancer. Recent Cochrane review concluded that screening by BSE or CBE could not be recommended at present.
Routine	The role of regular Mammography (MMG) screening for

population-based Mammography screening every 1-2 years in accordance with internationally accepted protocols for asymptomatic women at average risk of breast cancer	asymptomatic women remains a controversial issue. Women with screen-detected impalpable breast abnormality require aspiration cytology or core biopsy to establish histological diagnosis. Results of a meta-analysis indicated that the sensitivity of annual mammography screening for detecting breast cancer varied from 83% to 95% & the false-positive rate ranged from 0.9 – 6.5%. When screened at every 2 years, the sensitivity dropped. The sensitivity was higher in women above age 50. Several meta-analyses of Western randomized controlled trials (RCT) data found approximately a 20% reduction (95% confidence interval: 19-26%) in breast cancer mortality among the screened group when compared with unscreened group. The magnitude of reduction was higher for women aged 50 or above and lower for 40-49 age group. However, recent systematic review by Cochrane showed the following results: ● Among the 6 trials reviewed, only 2 trials were adequately randomized & their results did not show a significant reduction in breast cancer mortality, with relative risk (RR) 0.93 (95% CI: 0.8-1.09) at 13 years. (If relative risk is 1, there is no increased or decreased risk) ● 4 trials with suboptimal randomization showed a significant reduction in breast cancer mortality, with RR 0.75 (95% CI: 0.67-0.83). ● RR for all 6 trials combined was 0.8 (95% CI: 0.73-0.88). Based on these data, the mortality reduction was 20%. ● However it was commented that as the effect was lower in the highest quality trials, a more reasonable estimate was a 15% relative risk reduction with an absolute risk reduction being 0.05%. Thus, the number needed to screen in order to prevent one death is 2000. ● Besides, it was estimated that mammography screening resulted in 30% increase in over-diagnosis and over-treatment. ● Thus the authors concluded that whether screening caused more benefit than harm was unclear and women invited for screening should be fully informed of its potential benefits and harms.
Routine population-based Mammography screening every 1-2 years in accordance with internationally accepted protocols for asymptomatic women at average risk of breast cancer	

Routine population-based Mammography screening every 1-2 years in accordance with internationally accepted protocols for asymptomatic women at average risk of breast cancer	Concerning the risk of radiation-induced cancer due to MMG screening: ● UK National Health Service Breast Screening Programme (NHSBSP) estimated that for women screened over a 10-year period using two view MMG, the risk of radiation-induced fatal breast cancer was 0.1 per 1,000 women aged 50-59 and 0.04 per 1,000 women aged 60-69 (or an average of 0.07 cancer per 1,000 women screened at age 50-70). ● Thus, for every 14,000 women aged 50-70 screened by NHSBSP over a 10-year period, about 1 fatal radiation-induced breast cancer will occur. Local Considerations for Population-Based Screening Programme: ● Currently there was no RCT data that showed reduction of breast cancer mortality from mammography screening among Asian or Chinese population. ● No doubt, local breast cancer incidence rate has been increasing in the past 20 years and breast cancer has surpassed lung cancer as the commonest female cancer in Hong Kong since early 1990's. However, the predicted rate in the next decade will be still half of those in Western population. ● Thus the relatively low prevalence rate will lead to high false-positive rate and low positive predictive values of MMG screening. ● In one local study, the positive predictive value of MMG screening was reported to be only 4.9%. Thus the false positive rate could be as high as 95%. This will result in many women undergoing unnecessary invasive procedures causing potential harms. ● It has also been estimated by local modeling studies that annual MMG, screening of every 100,000 women age 50 or above for 10 years would prevent fewer than 77 breast cancer related deaths but generate 8,980 false positive cases and 134 iatrogenic adverse events. In other words, about 1,300 healthy Hong Kong Chinese women age 50 years or above would need to be screened annually for 10 years in order to prevent 1 cancer-related death. ● Therefore, women invited for breast cancer screening

	using mammography should be fully informed of the potential benefits, risks and limitations before receiving MMG screening.

After due consideration, it is fair to recommend the following:

1. At present, there is insufficient evidence to recommend routine population-based mammography screening to asymptomatic women in Hong Kong as it is still unclear whether screening would cause more good than harm.

2. Women who wish to consider mammography screening in accordance with internationally accepted protocols (e.g. mammography every 1-2 years starting at age 50 or above) should be fully informed of the potential benefits, risks and limitations of screening in order to make an informed choice.

3. Women who are at higher than average risk of breast cancer (e.g. positive family history of breast cancer) should seek medical advice about whether they should receive screening, age to start and the frequency of screening because the risk of developing breast cancer may be sufficiently high to justify mammography screening.

4. The precise age at which to discontinue screening mammography is still uncertain. Most countries do not actively invite women older than 69 years to attend screening.

Appendix: Recommendations of Other Countries

	Breast Self Examination (BSE)	**Clinical Breast Examination (CBE)**	**Screening by Mammography (MMG)**
United States Preventive Services Task Force (2002 update)	Insufficient evidence to recommend for against routine BSE	Insufficient evidence to recommend for against routine CBE alone	Recommends MMG screening every 1-2 years for women aged 40 and older
National Cancer Institute (USA)			MMG screening every 1-2 years for women aged 40 and older. Women at higher risk should talk with their physicians about schedule
American Cancer Society (2007)	BSE is an option for women starting in their	CBE every 3 years for ages 20-39, every	Yearly MMG starting at age 40 & continue as long as a woman is in good health

	20s	year for ages 40 and older	
Canadian Task Force on Preventive Health Care	Fair evidence to recommend BSE to be excluded from Periodic Health Examination (2001 update)	Good evidence for screening women 50-69 years by CBE (in conjunction with MMG) (1998 update)	Good evidence for screening women aged 50-69 by clinical examination and MMG every 1-2 years (1998 Rewording) Current evidence does not support the recommendation that screening MMG be included in or excluded from periodic health examination of women aged 40-49 at average risk of breast cancer (2001 Update)
Australian Department of Health & Ageing (program began in 1991)			MMG screening every 2 years for women aged 50-69 (women 40-49 & 70 years & above are able to attend for free screening)
Finland			MMG screening for women 50-59 every 2 years since 1987
Netherlands			Women aged 50-69 are screened every 2 years, extended to women aged 70-75 from 1998 onwards
United Kingdom (NHS)			MMG screening for women aged 50-70 every 3 years.
Singapore	Recommends monthly BSE for women above 20 years (2002)		Recommends yearly MMG for women aged 40-49, every 2 years for age 50 & above (2002)
Japan		Annual CBE of women aged 30 & above since 1987	In 2000, national guidelines recommended one-view MMG every 2 years for age 50 & above

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