

IOM: Lifestyle Changes to Prevent Breast Cancer Needed

Susan G. Komen for the Cure-Sponsored Report Proposes 'Life Course' Approach

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December 7, 2011 (San Antonio, Texas) — Women's worries about developing breast cancer are well founded: 230,000 new cases are expected to be diagnosed this year. Yet according to a new report from the Institute of Medicine (IOM), presented here at the 34th Annual San Antonio Breast Cancer Symposium (SABCS), women may be able to reduce their chances of developing invasive breast cancer by avoiding specific environmental factors, such as tobacco and alcohol use, hormone therapy, and unnecessary medical radiation.

Although women cannot control breast cancer risk factors relating to their own genetics or aging, this new study points to evidence-based behaviors that women can take to reduce their risk.

A list of specific preventive actions to reduce breast cancer risk is what Susan G. Komen for the Cure asked the Institute of Medicine (IOM) to develop, based on current epidemiological evidence. The IOM's study committee's findings, "Breast Cancer and the Environment: A Life Course Approach," was released today.

"With the Internet, patients are much better educated than ever before," study co-author Robert Hiatt, MD, PhD, professor and chair of the department of epidemiology and biostatistics at the University of California at San Francisco, told *Medscape Medical News*. "Physicians need to be ready to respond, to answer questions from their patients. Our evaluation of existing published research — thousands of studies — shows consistent evidence that they can give their patients."

Among environmental factors, the most consistent evidence of a link with breast cancer risk was the use of hormone therapy that combines estrogen and progestin. Other high correlations with increased breast cancer risk were exposure to ionizing radiation from computed tomography (CT), excess weight in postmenopausal women, and alcohol consumption. Some studies evaluated by the IOM study committee concluded that smoking is causally related to breast cancer, but other studies describe the evidence as "limited."

"We need to make healthcare providers aware of some things in research literature that have not been highlighted," study chair Irva Hertz-Picciotto, PhD, professor and chief in the Division of Environmental and Occupational Health at the University of California at Davis told *Medscape Medical News*. "The issue of CT scans and how variable they can be, for example. You can do 2 millisieverts or you can do 40 millisieverts for the same image of the same organ, and 40 is obviously much more than 2."

Dr. Hertz-Picciotto's coauthors believe that 3 CT scans at the 40-millisievert dose equals the amount of ionizing radiation received by a typical resident of Nagasaki during the dropping of the atomic bomb there. "That's what the medical profession needs to do," Dr. Hertz-Picciotto's said, "rein in this indiscriminate use of otherwise excellent diagnostic capabilities and tools. There may be impacts on women's cancer risks over time."

Several other factors show lesser but possible associations with increased breast cancer risks, including exposure to secondhand smoke, doing nighttime shift work, and inhaling chemicals contained in auto exhaust and in gasoline pumped into one's car, chemicals such as benzene, ethylene oxide, and 1,3-butadiene.

Showing no increases in breast cancer risks are the use of hair dyes and exposure to radiation from microwave ovens and mobile phones.

On the other hand, a preventive action that decreases the incidence of breast cancer is increased physical activity.

The study presented preventive actions in a decision matrix that women could use to reduce their cancer risks (see Table below). Beyond the benefit of reducing breast cancer risk, some of these actions have other health benefits, such as reducing the risk for heart disease or stroke.

The study noted the challenges that researchers face in trying to determine what environmental factors may increase the risk for breast cancer. The origin and development of the different types of breast cancer are still incompletely understood. Past studies may have focused on 1 period of women's lives, such as adulthood, but may have missed important developmental periods, when exposures to factors may have occurred earlier in life.

That is the reason the Komen Foundation champions a "life course" approach, calling for studies that will look at the relationship between exposure to potential environmental carcinogens at particular stages in a woman's life.

Susan G. Komen for the Cure President Elizabeth Thompson explained that "the role that environmental factors play in the development of breast cancer is hugely complex and IOM has done a good job laying out the challenges. We intend to use these findings to guide our decisions about research to fund so that women and their families have the best science to guide them in making important lifestyle choices."

The foundation's future research goals will be guided by the IOM study, according to Ms. Thompson. To that end, she announced to *Medscape Medical News* that an initial fund of \$5 million to fund this research has been offered by the Komen Foundation, with matching funds being requested from the federal government and other cancer groups and private donors. "I'd like to highlight that in the past 3 years, we've invested \$40 million in prevention research and \$22 million for nutrition and exercise. That \$62 million in the past 3 years says this is not a new effort for us, but it might be for others, and we'd like them to put their money in the pool and let this go forward."

Ms. Thompson believes the IOM report establishes a baseline of the best breast cancer research to date. "Having the highest body of science in the country determine what is scientifically relevant is very important because we need a scientific basis from which to make decisions," she said. "This is an area consumers are very excited about but they are confused. Primary care doctors, internists, gynecologists, frontline obstetricians all get these questions every day, and they need to know what is known, what is the real standard of science here. The new study tells us a couple of things: one, the things we can control in our environment — diet, exercise, very moderate alcohol intake, and no smoking — are still the most important things we can do to reduce our national cancer risk. With regard to chemical substances, there is still a lot of work that needs to be done with that."

Table. Opportunities for Actions by Women That May Reduce Risk for Breast Cancer

Opportunity for Action	Personal Action Possible	Requires Action by Others	Target Population Defined	Effective Form and Timing of Action Established	Other Known Risks or Benefits From Taking Action
Avoid unnecessary medical radiation	Yes	Yes	All ages	Yes, especially at younger ages	May result in loss of useful information; likely to decrease risk for other cancers
Avoid combination menopausal hormone therapy	Yes	Confer with physician	Postmenopausal women	Yes	May experience moderate to severe menopausal symptoms without hormone therapy
Avoid smoking	Yes	Others can facilitate	All ages, especially before first pregnancy	Yes (form); No (timing)	Likely to reduce risk for other cancers, heart disease, strokes
Avoid passive smoke	Varies	Yes	All ages	Yes	Likely to reduce risk for other cancers, heart disease
Limit alcohol consumption	Yes	Others can facilitate	All women	Yes (form); No (timing)	May increase risk for cardiovascular disease

Increase physical activity	Yes	Others can facilitate	All ages	No	Likely to reduce risk for cardiovascular disease, diabetes; may increase risk for injury
Maintain healthy weight; reduce obesity	Yes	Others can facilitate	Unclear	No	Likely to reduce risk for cardiovascular disease, diabetes, and other cancers
Limit or eliminate workplace and consumer exposure to chemicals that are plausible contributors to breast cancer risk	Varies by chemical	Varies	Varies	No	May reduce risk for other forms of cancer or other health problems; may result in replacement with products that have risks not yet identified
If at high risk for breast cancer, consider chemoprevention	Yes	Confer with physician	High-risk women	Yes	Depending on the agent, increased risk of endometrial cancer, stroke, deep-vein thrombosis

Reproduced from IOM report.

The full report can be accessed at the [IOM Web site](#).

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