New study: Physicians don’t understand cancer screening statistics
Patients are the ones who suffer when ineffective and possibly harmful examinations are recommended

Berlin, March 9, 2012 – In the wake of increased debate about benefits and harms of cancer screenings over the past few years, today’s patients are in even more need of doctors who can provide qualified advice regarding these examinations. However, a newly published study by the Harding Center for Risk Literacy at the Max Planck Institute for Human Development in Berlin, which included over 400 primary care physicians in the United States, shows that the majority of these doctors cannot distinguish between relevant and irrelevant – and even misleading – information.

Even though improved survival rates and increased detection of cancers (incidence rate) with screening do not prove that screening actually saves lives, both statistics are often used to promote such examinations. There is a reason behind this: As the authors revealed in their study, recently published in *Annals of Internal Medicine*, the majority of the surveyed physicians believed that improved survival rates and increased incidence rates prove that cancer screening tests reduce mortality rates. When presented with irrelevant evidence, 69% of physicians recommended a test. But when presented with relevant evidence, namely the reduction of mortality, only 23% recommended the same test.

Why do improved survival rates not necessarily mean lower mortality rates?

Imagine a group of men who were diagnosed with prostate cancer at the age of 67 after showing symptoms and who die from this cancer 3 years later. The 5-year survival rate is then 0%. Now imagine that these men had participated in prostate cancer screening and their disease was detected much earlier, say at the age of 60, but they still die at the age of 70. The 5-year survival rate then increases from 0% to 100%, without a single life being saved. Over three quarters of the physicians surveyed were unaware of this.

What is the risk of increased incidence rates, and why do they not necessarily mean lower mortality rates?

Almost half of the surveyed physicians were subject to another misbelief: that a higher number of cancers detected by screening shows that this screening saves lives. However, overtreatment can happen when, for instance, screening detects slow or non-progressive prostate cancers that would never have caused problems in a patient’s lifetime. For these patients, although treatment is not beneficial (no lives are saved), there is a risk for side effects such as incontinence and impotence.

Against the background of cancer screenings often being advertised with exactly these statistics and patients being advised to discuss their decision with their doctors, the results of the study are highly relevant.

The study surveyed a national sample of 412 U.S. primary care physicians in the years 2010 and 2011.
Background information

The article

Harding Center for Risk Literacy
The center envisions a society of informed citizens who are competent enough to deal with the risks of a modern technological world. Established through a gift from the London-based global investment manager David Harding, the Center is affiliated with the Max Planck Institute for Human Development and funds research conducted by Prof. Dr. Gerd Gigerenzer and his team.

Max Planck Institute for Human Development
The Max Planck Institute for Human Development was founded in Berlin in 1963 and is an interdisciplinary research institute dedicated to the study of human development and education. The institute is part of the Max Planck Society for the Advancement of Science – one of Europe’s most successful organizations for basic research.

Contact:
Dr. Odette Wegwarth
Senior Research Scientist
Max Planck Institute for Humand Development
Harding Center for Risk Literacy
Lentzeallee 94
D-14195 Berlin
E-Mail: wegwarth@mpib-berlin.mpg.de

Further information:
http://www.annals.org/content/156/5/340.abstract
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