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Speakers' abstracts

Session 1: Cancer prevention and health politics

S1. Do we make optimal use of the potential of cancer prevention?

P. Greenwald*

Division of Cancer Prevention, National Cancer Institute, USA

Three decades of intensive experimental and clinical research on cancer prevention has yielded an impressive body of scientific knowledge about cancer epidemiology and etiology. The question remains whether we are making optimal use of the knowledge we have gained for cancer prevention. The recent release of the World Cancer Research Fund/American Institute for Cancer Research report on diet and lifestyle strategies for cancer prevention – based on an evidence-based, systematic review of the published literature – is the strongest acknowledgement to date of the benefits of a lifestyle approach to reduce cancer risk. The report also emphasized the need to increase basic nutritional science research to make optimal use of the knowledge gained in the past three decades. Medical approaches-represented by chemoprevention and clinical study strategies-also have become more focused based on results from basic nutritional sciences research. Expansion of pre-clinical chemoprevention studies and greater attention to “first-in-human” prevention trials to safely shorten the timeline for new drug development is needed. Development of a prevention focus for what the U.S. Food and Drug Administration calls “Exploratory Investigational New Drug Studies” and what therapists at the National Cancer Institute are calling “phase zero” clinical trials will help in decision making for larger cancer prevention clinical trials. Past success in phase 3 prevention clinical trials-such as the Prostate Cancer Prevention Trial, the Breast Cancer Prevention Trials, and the Prostate, Lung, Colon, and Ovarian cancer screening

trial-provide vital primary results and secondary benefits for basic and clinical research. Making optimal use of these findings in clinical practice and in designing future prevention trials remains a challenge. Current strategies for cancer prevention include identification of individual risk levels for several cancers; optimal strategies for using this information can be developed based on emerging basic and clinical research. Progress on identification of biomarkers for cancer risk are being evaluated and validated by NCI's Early Detection Research Network. A recent progress report indicates that biomarkers of cancer susceptibility and exposure have been identified. Using this information optimally for prevention through lifestyle changes will demand commitments from public and private research institutions. Another area of emerging research is the development of a systems biology approach to cancer prevention. The approach will demand creation of multidisciplinary teams of researchers from biological and nutritional sciences, informatics and engineering scientists, and researchers from many fields not generally focused on disease prevention. To facilitate this and other new approaches, and to make effective use of information and strategies for cancer prevention, intensive training efforts must be implemented to develop the next generation of basic and clinical scientists, and physician researchers, capable of working in a cross-discipline and multidisciplinary research environment. Re-training current researchers in new approaches also can make optimal use of their combined research experiences.