Chapter 5. Future Research

The results of our literature synthesis show generally disappointing results for the efficacy of these antioxidant supplements in these doses to prevent, modify risks or treat cancer in these populations. This result is in contrast to the numerous observational studies reporting benefits in persons consuming diets that are high in these same antioxidants. Therefore, additional research is needed to understand why these two sources of evidence disagree.

Future research should include populations that were not included in the previous studies. Specifically, future research should include female subjects and should also focus on cancers particular to women such as breast, cervix, and ovarian cancer. Additionally, populations enrolled in future clinical trials should be homogeneous with respect to condition and intervention. The majority of the large trials studied here focused on primary prevention in high-risk populations. Additional research would be needed to ascertain the benefit for the secondary prevention of common cancers or for the modification of premalignant states. Research into other popular antioxidants such as selenium might also yield deterrent results.

We did find evidence of certain associations of vitamin C and E and certain cancers or intermediate outcomes that require replication before definitive conclusions of efficacy can be reached. These results need to be confirmed in larger studies.

For coenzyme Q10, preliminary research needs to be done before clinical trials would be recommended. Molecular and animal model studies need to establish a plausible reason in terms of mechanisms, dose and duration of treatment before proceeding to clinical trials.

The utilization of antioxidants to mitigate the negative effects of standard cancer therapy would also be useful to study. We would recommend, initially, that a review of antioxidants as adjunctive cancer therapy be considered.

Finally, a number of intermediate outcomes are becoming established for development of cancer. If these outcomes become validated for common cancers, it would be much more cost-effective to use these end points to gauge efficacy of any planned clinical intervention prior to undertaking large clinical trials. We would also recommend the continuing development of more appropriate and sensitive biomarkers of nutritional status.