Contents

1. Introduction 1
   1.1 Risk factors 1
   1.2 Screening 2
   1.3 Causation 3

2. Nutrition 4
   2.1 Scientific background 4
      2.1.1 Fatty acids 4
      2.1.2 Plant foods 5
      2.1.3 Antioxidants 6
      2.1.4 Nutrient–gene interactions 7
   2.2 Implications for prevention and control 7
   2.3 Research recommendations 8

3. Lipids 8
   3.1 Scientific background 8
      3.1.1 New lipoprotein phenotypes 8
      3.1.2 Triglycerides 9
      3.1.3 Triglyceride–HDL relationship 10
      3.1.4 LDL–receptor interactions 10
      3.1.5 Role of HDL 10
      3.1.6 Lipoprotein (a) 11
      3.1.7 Oxidized lipoproteins 11
   3.2 Implications for prevention and control 12
   3.3 Research recommendations 12

4. Insulin resistance 13
   4.1 Scientific background 13
   4.2 Implications for public health 13
   4.3 Research issues 14
   4.4 Research recommendations 15

5. Homocysteine 15
   5.1 Scientific background 15
   5.2 Implications for prevention and control 16
   5.3 Research recommendations 16

6. Haemostatic factors 16
   6.1 Scientific background 16
   6.2 Thrombogenic/antithrombogenic factors 17
      6.2.1 Endothelial cell dysfunction 17
      6.2.2 Platelet hyper-reactivity 18
      6.2.3 Hypercoagulability 19
      6.2.4 Diminished fibrinolytic activity 20
   6.3 Conclusions 20
   6.4 Implications for prevention and control 20
   6.5 Research recommendations 21

7. Alcohol 21
7.1 Scientific background 21
7.1.1 Epidemiological evidence 21
7.1.2 Effect of wine 22
7.1.3 Biological mechanisms 22
7.2 Public health implications 23
7.3 Conclusions 23
7.4 Research recommendations 23

8. Physical activity 23
8.1 Scientific background 23
8.2 Implications for prevention and control 24
8.3 Research recommendations 24

9. Genetic influences 24
9.1 Scientific background 24
9.2 Research recommendations 25

10. Women and non-contraceptive hormone use 26
10.1 Scientific background 26
10.2 Implications for prevention and control 27
10.3 Research needs 28
10.3.1 Mechanisms of action of estrogens and progesterone on risk factors 28
10.3.2 Endometrial cancer 30
10.3.3 Breast cancer 31
10.4 Research recommendations and priorities 31

11. Social, cultural and psychosocial factors 32
11.1 Scientific background 32
11.1.1 Persistent social differences in mortality within countries 32
11.1.2 International variations in mortality 34
11.1.3 Socioeconomic differences in morbidity 36
11.1.4 Ethnic variations within countries 36
11.1.5 Psychosocial factors 37
11.2 Implications for prevention and control 38
11.3 Research needs 39
11.3.1 Medical care 40
11.3.2 Health-related behaviours 40
11.3.3 Factors operating at different stages of life 40
11.3.4 Material conditions 41
11.3.5 Psychosocial factors 41
11.3.6 Biological mechanisms 42
11.4 Recommendations 42

12. Conclusions and recommendations 42
12.1 Conclusions 42
12.2 Recommendations and research needs 44

Acknowledgements 46

References 47