

Contents

Preface 2

Message from The Nippon Foundation 3

Introduction Characteristics of school health: How are they learned and taught? 16

1. What does it mean for people to live a lifetime in good health? 16
2. Significance of learning and teaching school health 17
3. Characteristics of health as a school subject 18
4. Sustainable Development Goals (SDGs) and school health 19

Chapter 1 Health 21

1. Aspects of health 21
2. Health is a human right 23
3. Health during the developmental period 23
4. Health promotion 24
 - 1) Background to the concept of health promotion 24
 - 2) The Ottawa Charter for Health Promotion 24
 - 3) The Bangkok Charter for Health Promotion in a globalized world 25
5. School health initiative 26
 - 1) School health objectives and initiatives 26
 - 2) Significance and importance of health education in schools 27
 - 3) The link between education and health 27
6. Cambodian initiatives Focusing Resources on Effective School Health 27
7. The future of school health in Cambodia 28

Chapter 2 How your bodies function (Mechanisms and functions of your body) 32

1. Structure and functions of the human body 32
 - 1) Basic structure of the human body (cells, genes, tissues, and organs) 33
2. Structures and functions of organs 35
 - 1) Motor system 35
 - (1) Skeleton 35
 - (2) Muscle 35

- 2) Circulatory system 36
 - (1) Circulation 36
 - (2) Blood pressure regulation 37
 - 3) Respiratory system 38
 - 4) Nervous system 38
 - (1) Central nervous system 39
 - (2) Peripheral nervous system (somatic nervous system and autonomic nervous system) 40
 - 5) Digestive system 41
 - 6) Urinary system 42
 - 7) Endocrine system 42
 - 8) Sensory system 43
 - 9) Reproductive system 44
 - (1) Male reproductive system (structure and functions) 45
 - (2) Female reproductive system (structure and functions) 45
 - 10) Immune system 46
3. Mechanisms that support human activities in daily life 47
 - 1) Homeostasis of internal environment and its regulatory mechanism 47
 - 2) Thermoregulation 47
 - (1) Body heat production and dissipation 48
 - (2) Thermoregulation mechanism 48
 - (3) Diurnal fluctuation 49

Chapter 3 Children's growth and development 54

1. Human development 54
2. Principles of growth and development 55
 - 1) Most children follow a certain developmental order 55
 - 2) A certain direction is observed in growth and development 56
 - 3) Continuity of growth and development and difference in growth velocity by organ and tissue 56
 - 4) There are critical periods and sensitive periods in a child's growth and development 57
 - 5) Individual variability of growth becomes significant with age 57
3. Growth and developmental periods by age 58
 - 1) Growth and development during early childhood 58
 - (1) Physical growth 58
 - (2) Motor development 58
 - (3) Cognitive development 59
 - (4) Emotional and social development 59
 - 2) Growth and development during the middle childhood period 59
 - (1) Physical growth and development 59
 - (2) Motor development 59
 - (3) Cognitive development 60
 - (4) Emotional and social development 60
4. Factors that influence children's growth and development 61

Chapter 4 Cleanliness, hygiene and health 65

1. Personal and environmental cleanliness and hygiene (home, school, town/community) 65

- 1) Personal cleanliness and hygiene 65
- 2) Home cleanliness and hygiene 67
- 3) School hygiene 68
- 4) Town and community hygiene 71
 - (1) Waste disposal 71
 - (2) Drinking water and wastewater treatment 71

2. Tips for creating a clean and hygienic personal environment 73

- 1) Preventing food poisoning 73
- 2) Cleaning 73

3. Good hygiene practices 74

- 1) Effective handwashing technique 74

Chapter 5 Lifestyle habits and health 78

1. Children's lifestyle habits and health 78

- 1) Growth/development and lifestyle habits 78
- 2) Establishment of basic lifestyle habits 80

2. Diet/nutrition and health 81

- 1) What it means to human health to eat 81
- 2) Characteristics of dietary effect 81
- 3) Healthy diet 82
 - (1) Nutritional significance of carbohydrates 83
 - (2) Nutritional significance of lipids 84
 - (3) Nutritional significance of proteins 84
 - (4) Nutritional significance of minerals 85
 - (5) Nutritional significance of vitamins 85
 - (6) Nutritional significance of dietary fibers (nondigestible saccharides) 86
 - (7) Recommended dietary allowances of nutrients 86
- 4) Habit of choosing foods with safety and security assured 88

3. Exercise and health 90

4. Rest/sleep and health 92

5. Health habits of adults and life expectancy 92

Chapter 6 Prevention of lifestyle diseases 96

1. Common lifestyle diseases among Cambodians 96

2. Lifestyle diseases and other conditions related to lifestyle habits 98

- 1) Lifestyle diseases 98

2) Other health issues related to lifestyle habits 101

- (1) BMI-mortality relationship 101
- (2) Obesity and underweight 102
- (3) Anemia 103

3. Prevention of lifestyle diseases and diet/nutrition 104

- 1) Acquiring desirable lifestyle habits 104
- 2) Importance of healthy proteins 105

4. Acquiring a better rhythm of everyday life 106

- 1) Maintenance of biological homeostasis 106
- 2) Biological clocks 107
- 3) Lifestyle habits to maintain a normal biological rhythm 107

5. Improper diets and health problems 108

Chapter 7 Infectious diseases and their prevention and protection 112

1. Definition of infectious diseases and three major factors for the establishment of infection 112

- 1) Definition of infectious diseases 112
- 2) Pathogens 113
- 3) Infection routes: vertical and horizontal transmissions 114
- 4) Host susceptibility 114

2. Biological defense mechanisms 114

- 1) Physical defense 115
- 2) Chemical defense 116
- 3) Immune system 116
 - (1) Natural immune system 117
 - (2) Acquired immunity 118
 - (3) Immunological tolerance 119

3. Prevention of infectious diseases 119

- 1) What can individuals do? 120
- 2) What are schools expected to do? 121
- 3) What is society expected to do? 121

4. Common infectious diseases in Cambodia 122

- 1) Dengue fever 122
- 2) Malaria 123
- 3) Tuberculosis 123
- 4) Rabies 125
- 5) Parasitic infections 125
 - (1) Trematode infections 125
 - (2) Nematode infections 126
- 6) Enteric infections 126
 - (1) Food poisoning caused by pathogens 127

(2) Prevention of food poisoning 127

5. New challenges with infectious diseases 128

Chapter 8 Eye and dental health 131

1. Eye health 131

- 1) Importance of eye health 131
- 2) How we can see an object 132
- 3) Eye diseases that can cause visual impairment 132
 - (1) Cataracts 132
 - (2) Glaucoma 133
 - (3) Diabetic retinopathy 133
 - (4) Trachoma 133
 - (5) Vitamin A deficiency 133
 - (6) Refractive errors (hyperopia, myopia, and astigmatism) 134
- 4) Correction of refractive errors 136
 - (1) Glasses 136
 - (2) Contact lens 136
- 5) Protecting your eyes 137
 - (1) Posture 137
 - (2) Brightness 137
 - (3) Rest eyes frequently 138

2. Dental health 138

- 1) The roles and development of teeth 138
- 2) Dental caries 140
 - (1) Mechanism of the development and progression of dental caries 140
- 3) Gingivitis and periodontal disease 142
- 4) Prevention of dental caries and periodontal disease 143
 - (1) Toothbrushing 143
 - (2) Dental floss 144
 - (3) Eating habits to maintain dental health (how and what to eat between meals) 145

Chapter 9 Significance of health checkups and their methods 148

1. Significance of health checkups 148

2. Health checkup methods 149

- 1) Height measurement and weight measurement 149
 - (1) Height measurement method 149
 - (2) Weight measurement method 151
 - (3) Assessing height and weight 152
- 2) Eye test 155
 - (1) Eye test method 155

(2) Evaluation of eyesight 157

3) Hearing test 158

(1) Hearing test method 158

(2) Evaluation of hearing 158

4) Recording 159

3. Practice 160

1) Flow of health checkups 160

2) Let's practice for measurement 160

4. Use of records 161

5. Implementation at schools 163

1) Importance of creating a school health organization 163

2) Example of implementation (Plan-Implementation-Evaluation) 164

Chapter 10 Health effects of tobacco use, alcohol consumption, and drug abuse 172

1. Tobacco use and health 172

1) Health effects of tobacco use 172

2) Harmful chemicals contained in tobacco 173

2. Alcohol consumption and health 174

1) Health effects of alcohol 174

2) Alcohol dependence 175

3) Social impacts caused by alcohol 176

3. Harm of tobacco use and alcohol consumption by minors 176

4. Drug abuse and health 176

1) What is drug abuse? 176

2) What is drug dependence? 178

3) Spread of drugs in the Western Pacific region 179

5. Spread of tobacco use, alcohol consumption, and drugs in Cambodia 180

1) Tobacco use in Cambodia 180

2) Alcohol consumption in Cambodia 182

3) Drug abuse in Cambodia 183

4) Psychological/social factors related to tobacco use, alcohol consumption, and drug abuse 184

Chapter 11 Mental and physical changes during adolescence 189

1. Characteristics of mental and physical growth and development in adolescence 189

1) Physical changes 189

(1) Significance of adolescence as a period of transition from childhood to adulthood 189

(2) Secondary sexual characteristics 189

(3) Functions of the male reproductive system 191

(4) Functions of the female reproductive system 192

- (5) Sexual desire 195
- 2) Mental and social changes 195
 - (1) Understanding mental development and problem behaviors during adolescence 195

2. How pregnancy and childbirth work and the current situation around them 197

- 1) Pregnancy 197
 - (1) Somatic changes 197
 - (2) Changes to the uterus 198
- 2) Childbirth (delivery) 198
 - (1) First stage of parturition (dilation stage) 198
 - (2) Second (expulsion) stage to third (placental) stage of parturition 198
- 3) Today's circumstances surrounding pregnant and nursing mothers 199
- 4) Contraception 200
 - (1) Methods of contraception 200
- 5) Youth sexual health and its challenges in today's Cambodia 201
 - (1) Child marriage 201
 - (2) Youth pregnancy and childbearing 201
 - (3) Use of contraception during sexual intercourse 202
- 6) Reproductive health and rights 204

3. Sexually transmitted infections 205

- 1) AIDS 205
 - (1) Causes and routes of transmission 205
 - (2) Symptoms and course of the disease 205
 - (3) Issues surrounding sexually transmitted infections (prejudice/discrimination against people with HIV/AIDS) 206
- 2) Other sexually transmitted infections 208

4. Social challenges and solutions surrounding sexual health 209

- 1) Handling information concerning sex 209
- 2) Sexual violence 210
- 3) Sexual norms in Cambodia 210
- 4) Comprehensive sexuality education 211
- 5) Menstrual hygiene management 213

5. Sexual diversity 214

- 1) Gender 214
- 2) Gender identity 215
- 3) Sexual orientation 215

Chapter 12 Mental health 218

1. Concept and development of the mind and mental health 218

- 1) Three viewpoints on the mind 218
- 2) Development of the mind 219
 - (1) Mental development in the biological aspect 219
 - (2) Mental development in the mental/psychological aspect 221

- (3) Development of the mind in the social aspect 222
- 3) What is mental health? 223
- 4) Adolescents in the world and mental health 223

2. Stress in daily life and mental health 224

- 1) Mechanism for protecting the mind 224
- 2) Relation between mind and body, and psychosocial stress 225
 - (1) Hans Selye's stress theory 225
 - (2) Mechanism of the mind-body connection 227
 - (3) Coping behavior toward, social support for, and a sense of control over stress 229

3. Mental health challenges in Cambodia 231

- 1) Externalizing problems and internalizing problems 231
- 2) Post Traumatic Stress Disorder (PTSD) in relation to the Khmer Rouge and 2nd generation PTSD 231
- 3) Bullying, violence, and harassment 233
- 4) Loneliness, anxiety, and depression 235
- 5) Suicide attempts, suicide 236
- 6) Addiction and dependence 238

4. Common mental diseases (schizophrenia and epilepsy) 239

- 1) Schizophrenia 239
- 2) Epilepsy 239

5. Mental health care 240

- 1) Help-seeking behavior 240
- 2) Counselling, mental health services 241

Chapter 13 Environment and health / Ecohealth 244

1. Importance of environmental health 244

2. What is an environment? 245

3. Human survival and the Earth's environment 246

4. Health and environment 247

- 1) Host-environment interaction 247
- 2) Dose-response relationship 250

5. Ecosystem health and human health 252

- 1) What is an ecosystem? What is an ecological health approach? 253
- 2) Economic growth and social development in Cambodia 254
- 3) Environmental issues in Cambodia 254
 - (1) Coastal development and loss of mangroves 255
 - (2) Deforestation 255
 - (3) Soil degradation 256
 - (4) Water pollution and water shortages 256
 - (5) Climate change and natural disasters 256
 - (6) Land mines and unexploded ordnance (UXO) 257
 - (7) Urban environment and health issues 259

Chapter 14 School safety and crisis management 262

1. Concepts of safety and danger 262

- 1) Concept of safety 262
- 2) Disasters and accidents 263

2. Characteristics of accidents involving children from the standpoint of developmental stages 263

- 1) Characteristics of the mind and body and behavior in early childhood 264
- 2) Characteristics of the mind and body and behavior of elementary school students 264
 - (1) Challenges in the safety education of elementary school students 265
- 3) Characteristics of the mind and body and behavior of junior high school students 266
 - (1) Challenges of the safety education of junior high school students 266

3. Causes of injuries in accidents involving minors 267

4. Traffic safety and the prevention of traffic accidents 268

5. Prevention of criminal damage 269

- 1) Hardware aspect of crime prevention measures (facilities/installations) 270
- 2) Software aspect of crime prevention measures 270

6. School safety 273

7. Crisis management in schools 274

- 1) Concept of crisis management in schools 274
- 2) Actual practice of crisis management in schools 275
 - (1) Prevent incidents/accidents from occurring [Prevention] 276
 - (2) Prepare for the occurrence of incidents/accidents [Preparation] 277
 - (3) Promptly respond to incidents/accidents [Response] 278
 - (4) Subsequent response to incidents/accidents and restoration [Restoration] 278
- 3) Experience of an incident/accident and mental health care 280
 - (1) Mental health care provided immediately after the occurrence of a crisis 280

8. Roles of school personnel in creating safe schools 282

9. Safety education of schoolchildren 282

- 1) Development of the ability to predict and avoid danger 283
- 2) Use of human resources/resources in communities 283

Chapter 15 First aid at school 286

1. Necessities for learning first aid 286

2. Vital signs 287

- 1) Consciousness 287
- 2) Respiration 288
- 3) Pulse 289
- 4) Blood pressure 289
- 5) Body temperature 290

3. First aid procedures 291

- 1) Observation 291
- 2) Assessment 291
- 3) Action 292

4. Appropriate first aid care for different situations 292

- 1) First aid for injuries 292
 - (1) Head trauma 292
 - (2) Facial trauma 292
 - (3) Chest or abdominal trauma 293
 - (4) Limb trauma 293
 - (5) Burns 299
- 2) First aid for illnesses 300
 - (1) Abdominal pain / diarrhea 300
 - (2) Headache 301
 - (3) Fever 301

Chapter 16 Disability and special education needs 305

1. Aspects of disease, impairment disability, and handicap 305

- 1) Disease 305
- 2) Impairment, disability, and handicap 306
 - (1) Definition of impairment, disability, and handicap 306

2. Models of disability 306

- 1) The medical model of disability 306
- 2) The social model of disability 306
- 3) International Classification of Functioning, Disability, and Health (ICF) as an integrated model of disability 307

3. How does Cambodian society view disease and disability? 308

4. Special education needs for disabled children in Cambodia 309

Index 311

The contributors 320

Column List

Introduction

- Diseases, disabilities, and the concept of eugenics 18

Chapter 1

- What is the WHO? 23
- National School Health Policy 2019 is promulgated 29

Chapter 2

- Why do elderly people fall easily? (Aging of bones and muscles) 36
- Autonomic nerves referred to as “fight or flight” and “rest and digest” 40
- Why can we see in the dark? (Mechanism allowing to see in the dark) 44
- Body temperature rhythm of women during and after puberty 49

Chapter 3

None

Chapter 4

- Vector insects 67
- Drinking water in Cambodia 67
- Best-before and use-by dates 68
- School environmental hygiene in Japan 70
- Disinfectants by efficacy 74

Chapter 5

- Things to consider when using dietary supplements 83
- Food allergy 84
- Prevalence of underweight, overweight and obesity in Cambodian children and adolescents aged 5-19 years 88
- UN WFP (United Nations World Food Programme) 89

Chapter 6

- What is inflammation? 100
- Plaque and tartar 100
- Health information obtained based on body height and weight 102
- Cambodians and anemia 103
- Environmental stimuli, homeostasis, and autonomic function 108
- Dietary habits that prevent lifestyle diseases will also help prevent infectious diseases 110

Chapter 7

- Vaccines and immunization 120
- Fighting smallpox 120
- A new lifestyle 121
- What are complements? 123
- Carriers (asymptomatic carriers) 124
- Zoonosis 125
- What is invert soap? 128
- Preventing discrimination and prejudice from being induced by infectious diseases 129

Chapter 8

- Eye and ophthalmus 132
- Asians and myopia 134
- Fashionable contact lenses caused eye disorder!! 137
- Causes and prevention of bad breath 142
- A variety of toothpaste 144

Chapter 9

- Health checkup is “Screening.” 149
- What is standard deviation? 153
- Situation of thinness and obesity in children in Cambodia 154
- Single eye chart 156
- Example of activities of Children’s Health Club 163

Chapter 10

- Emergence of heated tobacco products, a new type of tobacco 173
- What is a conflict of interest (COI)? 174
- Is cannabis legal or illegal? 177
- What is drug tolerance? 179
- What are narcotic drugs? 180
- Most At Risk Young People (MARYP) Survey at Hot Spots 183
- Global strategies regarding tobacco and alcohol 185
- How to use pharmaceuticals 186

Chapter 11

- Factors contributing to the onset of menstruation and health consequences of age for menarche 191
- Keep track of your menstrual cycle 194
- What is ambivalence? 196
- Traditional culture that supports childbirth (Ang Pleung) and changes in childbirth 199
- Sexual behaviors among university students in today’s Cambodia 204
- Harmful practices performed around the world 211
- Ingenuities for lessons and guidance on sex at school 215

Chapter 12

- What are the prefrontal cortex and synapses? 220
- Various emotions and the control of emotions 225
- Mental health of Cambodian people 227
- Stress hormones and happy hormone 228
- Psychosomatic disease 228
- Manic defense 228
- The Western mind and the Asian mind 230
- Whole school approach 237
- Loss and grief, and grief care 238

Chapter 13

- Environmental pollution of methylmercury and the health of people 247
- Environmental risk factors in low-middle income countries 251
- Truth behind banana plantations 252
- Ecohealth and systems thinking 253
- Community-based tourism and ecotourism 257

Chapter 14

- Hazard risk model 263
- School commuters’ situations and the challenge of helmet use in Cambodia 269
- Children living in the digital age 271
- Natural disasters that frequently occur around the world 272
- Response to lightning 272
- Anniversary reaction 281
- Measures related to land mines in Cambodia 283

Chapter 15

- What is orientation? 288
- Non-contact body thermometer 291
- What is shock? 292
- Management of nosebleeds 293
- Special considerations when treating bleeding 295
- Management of outdoor injuries caused by animals or insects 295
- Preparedness for injuries at school 298
- First aid in school 298
- Care for injuries provides an opportunity for health education 300
- Disposal of bodily waste / vomit 300
- Responsible self-medication, self-care and self-healing mechanisms 301
- Cardiopulmonary resuscitation and AED 302

Chapter 16

- Inclusive education for children 309
- Child-friendly schools 309
- What is UNICEF? 310