Contents

1

2

List of figures List of tables List of boxes List of contributors	ix x xi xii
Childhood obesity – an introduction J. YEUNG AND A.P. HILLS	1
Introduction 1 Aetiology of obesity 2 The impact of the environment in the promotion of childhood obesity 3 Behavioural determinants of obesity and the effect of the environment 4 Necessary modifications to the environment to afford a shift in activity levels 5 Role of different settings 6	
Tracking of overweight and obesity from childhood into adulthood: health consequences and implications for further research M.J.M. CHIN A PAW, A.S. SINGH, J.W.R. TWISK AND W. VAN MECHELEN	11
Introduction 11 Defining overweight and obesity 11 Tracking of overweight and obesity from childhood into adulthood 12 Childhood obesity and long-term health consequences 20 Discussion 20 Conclusion 21	

s

•	Contents	
3	Clinical correlates of overweight and obesity E. DENNEY-WILSON AND L.A. BAUR	25
	Introduction 25 The prevalence of complications 25 The importance of abdominal fat 26 Complications occurring during childhood and adolescence 26 Adult complications arising from child and adolescent obesity 30 Conclusion 32	
4	Body composition assessment in children and adolescents – implications for obesity A.P. HILLS AND M. KAGAWA	37
	Introduction 37 Changes in body composition 37 Assessment of body composition 38 Anthropometry 39 Conclusions 46	
5	The importance of physical activity in the growth and development of children N.M. BYRNE AND A.P. HILLS	50
	Introduction 50 Physical activity and obesity prevention in youngsters 50 Physical activity during the growing years 52 Regular physical activity and normal motor development 54 Physical activity and public health challenges 55 Physical activity recommendations for children: what is the evidence? 56 Summary 57	
6	The role of perceived competence in the motivation of obese children to be physically active L.M. LYELL, S.C. WEARING AND A.P. HILLS Introduction 61 Background 61	61
	Definitions and models 63 Perceived competence and physical activity in the obese child 66 Recommendations for design and delivery of physical activity interventions 67 Conclusions 74	

		Contents	vii
7	Psychosocial aspects of childhood obesity S.M. BYRNE AND M. LA PUMA		80
	Introduction 80 Socioeconomic status 80 What might explain the relationship between SES and obesity in developed countries? 81 Societal attitudes toward obesity and discrimination 81 What about overweight children's views? 82 The influence of parents, families and peers on the development an consequences of obesity 83 Psychological factors 85 Conclusions 89	d	
8	Physical activity, appetite control and energy balance implications for obesity N.A. KING	:	92
	Introduction 92 Physical activity and energy balance regulation 92 Physical activity and obesity 93 Physical activity and appetite control 95 The role of physical activity in weight control 96 Conclusion 97		
9	Eating behaviour in children and the measurement of food intake J. BRESSAN, A.P. HILLS AND H.H.M. HERMSDORFF	f	103
	Introduction 103 Eating behaviour in children 103 Methods of dietary assessment 104 Assessment of energy intake 105 Measurement in children 107 Improvement of methods 109 Conclusions 110		
10	Physical activity behaviour in children and the measurement of physical activity L.M. TOMSON, T.E. CUDDIHY, M. DAVIDSON AND R.P. PANGRAZI		113
	Introduction 113 Children's physical activity levels in Australia 116		

Physical activity and girls 117

	\sim
V111	Contents

	Schools as settings for promotion of physical activity 118 Physical activity out of school hours 119 Active transport to and from school 119 Monitoring and measuring physical activity levels 120	
11	Environmental factors and physical activity in children: implications for active transport programmes J. YEUNG, S.C. WEARING AND A.P. HILLS	130
	Introduction 130 Modifications to the environment necessary to afford a shift in activity levels 131 The ANGELO framework – a means of understanding the obesogenic environment 131 Obesogenic elements in microenvironmental settings 133 Macroenvironments 135 Active commuting to school – a sound investment? 136 Conclusion 138	
12	Interventions for the prevention and management of childhood obesity B. DEFORCHE, I. DE BOURDEAUDHUIJ AND A.P. HILLS Introduction 142 Interventions within the family 143 School-based interventions 145 Interventions within the community 146 Treatment of childhood obesity 146 Negative consequences of dietary interventions 150 Programmed exercise 151 Lifestyle activities 153 Decreasing sedentary activities 153 Family involvement 154 Behavioural modifications 154 Types of programme 158 Maintenance of weight loss 159	142
	Index	164

Figures

4.1	Body mass index-for-age chart (boys)	40
4.2	Body mass index-for-age chart (girls)	41
6.1	A schematic diagram outlining the potential barriers	
	associated with physical activity in obese individuals	62
6.2	Illustration of the Competence Motivation Theory	64
10.1	Step comparisons of most active and least active boys from	
	age 6 to 15 years	117

Tables

Z.1	Summary of studies on tracking of overweight from childhood	
	to adulthood	13
2.2	Summary of studies on health consequences of childhood	
	overweight	16
3.1	Potential obesity-associated complications among children	
	and adolescents	26
4.1	Cut-off values for overweight and obesity up to 18 years of age	42
0.1	Steps/day for youth, stratified by weight status	116
1.1	Environmental considerations in promoting physical activity	
	as a method to prevent childhood obesity	132

Spirit September 1997

Boxes

12.1	Nutritional guidelines to prevent obesity in young children	143
12.2	Physical activity guidelines to prevent obesity in young	
	children	145
12.3	Guidelines to develop a school-based obesity prevention	
	programme	146
12.4	Guidelines for nutritional intervention in obese children	148
12.5	Guidelines to develop an exercise programme for obese	
	children	151