

Contents

PREFACE	1
LIST OF PAPERS	3
CONTRIBUTION TO THE PAPERS	4
LIST OF ABBREVIATIONS	5
OBJECTIVES	6
ENGLISH SUMMARY	7
DANSK RESUMÉ (DANISH SUMMARY)	9
1 BACKGROUND	11
1.1 Growth in infancy and early childhood	11
1.1.1 Birth weight and relation with later body composition.....	12
1.1.2 The growth acceleration hypothesis	13
1.1.3 Age of adiposity rebound and later obesity risk	14
1.2 Infant feeding practice	15
1.2.1 Breastfeeding and formula feeding – relation with later body composition	16
1.2.2 Complementary feeding.....	17
1.2.3 The protein-adiposity hypothesis.....	19
1.3 Insulin-like growth factor I, growth and body composition	20
1.3.1 IGF-I regulation and function.....	21
1.3.2 IGF-I – influence by nutrition.....	22
1.3.3 IGF-I effect on body composition	23
1.4 Assessing body composition in childhood	24
1.4.1 BMI and weight-for-length.....	24
1.4.2 Prediction techniques to estimate body composition	25
1.4.3 Bioelectrical impedance analysis.....	26
1.4.4 Dual Energy X-ray Absorptiometry	27
1.4.5 Height adjusted indices for fat mass and fat-free mass.....	27
2 METHODOLOGY	29
2.1 Overview of the SKOT study	29
2.2 Recruitment and maintenance	29

2.3	Examination details.....	30
2.4	Anthropometry.....	31
2.5	Bioelectrical impedance.....	32
2.6	Dual-energy X-ray absorptiometry.....	32
2.7	Infant feeding practice.....	33
2.8	Diet records.....	33
2.9	Blood samples.....	34
2.10	Data processing and statistics.....	34
3	RESULTS AND DISCUSSION.....	35
3.1	General results from the SKOT study.....	35
3.2	Characteristics of the study population.....	35
3.3	Gender differences in body composition and IGF-I at 3 years.....	37
3.4	Infant feeding practice in the SKOT cohort.....	39
3.5	Main results and discussion - paper I.....	40
3.6	Main results and discussion - paper II.....	42
3.6.1	Duration of full breastfeeding as effect modifier for birth weight and early weight gain.....	45
3.7	Main results and discussion - paper III.....	49
3.8	Strengths and weaknesses.....	52
4	CONCLUSIONS.....	53
5	PERSPECTIVES FOR FURTHER RESEARCH.....	55
6	REFERENCES.....	57
7	PAPER I – III.....	73