

Faculty of Health Sciences, Department of Health and Care Sciences

# **Overweight, body size perceptions, lifestyle changes and health concerns in young adults, The Tromsø Study, *Fit Futures***

*A combined approach using qualitative interviews and a population-based cross-sectional study*

—  
**Anne-Sofie Sand**

*A dissertation for the degree of Philosophia Doctor – Mai 2017*





# **Overweight, body size perceptions, lifestyle changes and health concerns in young adults. *The Tromsø Study, Fit Futures***

A combined approach using qualitative interviews and a population-based cross-sectional study

**Anne-Sofie Sand**

**Clinical Research Department**

**University Hospital of North Norway**

**Department of Health and Care Sciences**

**UiT The Arctic University of Tromsø, Norway**

**2017**



**UNIVERSITETSSYKEHUSET NORD-NORGE**  
DAVVI-NOROGGA UNIVERSITEHTABUOHCCVEIUSSU



HELSE  NORD

## **Acknowledgements**

First of all, I would like to thank all the participants in the Fit Futures surveys, and especially the young women who attended for the interviews in the qualitative part of the study. Thank you for taking part and for sharing your thoughts and experiences. Your contribution is invaluable.

My main supervisor Nina Emaus has been supportive, encouraging and always available for small or big questions. Your broad competence is inspiring and your calmness despite a busy schedule is impressive. My co-supervisor Olaug Lian has made crucial contributions to this thesis. Your knowledge and wisdom on the facts and mysteries of health and illness have been eye-opening. Together you made the perfect mix of knowledge, competence and common sense. Thank you both for brilliant guidance and highly enjoyable discussions throughout this work.

I would like to thank my former leaders Elin Evensen and Sameline Grimsgaard for their encouragement and for making it possible for me to accomplish my master thesis and to apply for the PhD scholarship. The North Norwegian Health Authorities provided the necessary grant for the study.

My colleagues at The Clinical Research Department have been inspiring and supportive in work as in life through the years. A special thank to the staff at the Clinical Research Unit for their excellent work on the performance of the Fit Future surveys. Thanks to study nurse Kristin Jenssen for keeping such tidy order of the study procedures and documents, making the life of a PhD student easier. Thanks to co-authors Christopher Sivert Nielsen and Anne Winther. It is a privilege to be part of the Fit Future collaboration. The experience of being

surrounded by so much competence and enthusiasm has been rewarding. I would like to express my gratitude to Anne-Sofie Furberg for being such an outstanding project leader. We are many who are indebted to you.

A lot of people at the Clinical Research Department, the Fit Futures- and the Tromsø Study administration have contributed to this work in a lot of different ways. Thank you all for being so professional and easy to ask. Special thanks to Inger Sperstad, Ingrid Sandstad, Vidar Anderssen, Annelene Moberg, Anna-Kirsti Kvitnes and Bjørn Straume.

The Research Group for Public Health and Rehabilitation has provided important support and useful networking. A special thank to research group leader and Gunn Pettersen for initiating interesting meetings and seminars, and for bringing waffles and Twist whenever needed.

At last, I would like to thank friends and family for patience and support. Special thanks to Rolf who always makes me go the extra mile. Many thanks to Julie, Jørgen, Sigbjørn, Inger Johanne, Hilde, Jan-Åge and my father Anton, who at age 96 is the greatest inspiration for us all.

Tromsø, 6 May 2017

Anne-Sofie Sand

## Table of contents

<b>Acknowledgements</b>	<b>2</b>
<b>Summary</b>	<b>6</b>
<b>List of papers</b>	<b>8</b>
<b>Abbreviations</b>	<b>9</b>
<b>1. Introduction</b>	<b>10</b>
1.1 Definition of overweight and obesity	11
1.2 The increase of overweight and obesity	13
1.3 Causes and historical development	15
1.4 Perceptions of own body size	17
1.5 Health and well-being in relation to overweight issues	18
<b>2. Rationale and aims</b>	<b>20</b>
<b>3. Materials and methods</b>	<b>21</b>
3.1. Study population	22
3.2 Qualitative methods	24
3.2.1 Data collection for the qualitative part	26
3.2.2 Analysis and interpretation of the qualitative data	27
3.3 Quantitative methods	29
3.3.1 Measurements	29
3.3.2 Self-reported data	29
3.3.2.1 Perceived body size	29
3.3.2.2 Weight change wishes	30
3.3.2.3 Ideal weight	30
3.3.2.4 SPH	30
3.4 Statistics	30
3.5 Ethics and recruitment procedure	31
<b>4. Results</b>	<b>32</b>
4.1 Summary of papers	32
4.1.1 Paper 1	32
4.1.2 Paper 2	33
4.1.3 Paper 3	34
<b>5. Discussion</b>	<b>34</b>
5.1 Methodological considerations	34
5.1.2 Study design, a combined approach	34
5.1.3 The qualitative data	36
5.1.4 The quantitative data	39
5.1.5 The cross-sectional design, validity	41
5.1.5.1 Random and systematic errors	42
5.1.5.2 Selection bias	42
5.1.5.3 Information bias	43
5.1.5.4 Confounding	43
5.1.6 Researcher's perspective	44
5.2 Discussion of results	45

5.2.1 Perceptions and experiences regarding the focus on overweight issues	46
5.2.2 The tension between motivation and obstacles for weight management	47
5.2.3 Confusion and dissatisfaction of body size and perceptions of health	50
5.2.4 Coherence and contradictions in the results	51
<b>6. Concluding remarks and future perspectives</b>	<b>52</b>
<b>References</b>	<b>55</b>
<b>Papers I, II, III</b>	
<b>Appendices A-F</b>	

## Summary

**Background:** The steadily increasing number of people with overweight and obesity and the following health concerns have become major challenges in public health policies worldwide. The reasons behind this development are mainly connected to energy balance, and improvements of individual lifestyle habits are of high concern. Treatment and prevention for overweight in the younger populations have become matters of priority. Late adolescence and early adulthood are important stages of life-course regarding lifestyle habits. There has been a lack of research into sociocultural and other environmental determinants of food choices, physical activity and body size perceptions, which may be of especially importance in the young population

**Aims:** The overall aim of the study was to expand our knowledge on overweight issues including motivation and obstacles for weight management in the young, and especially the female population.

**Methods:** A combined approach using both qualitative and quantitative method was used in the study. The second wave of the cross-sectional youth cohort survey Fit Futures, part of the Tromsø Study, formed the data basis of the quantitative part. The sample for the present study consists of 364 young women and 265 young men, 18-22 years old. The participants for the qualitative part were recruited from the same cohort. This part of the study was accomplished as semi-structured life-world interviews with 12 young women, 18-20 years old.

**Results:** The results from the qualitative part of the study are presented as two parts or papers. In paper 1, the results showed that young women experience a huge focus on overweight issues with an attention on appearance rather than health. Their experiences were described as being in a squeeze between culturally defined body size ideals and perceptions of their own bodies. Overweight and obesity were described as sensitive issues among peers. In paper 2, the results showed an obvious presence of motivation for lifestyle changes, and this



was not just dependent on weight management. Expectations and experiences of well-being connected to better lifestyle habits were described as important for motivation factors.

However, challenges and obstacles for weight management connected to the transitions to independent adult life were prominent findings. The results from the quantitative part of the study were presented in paper 3, and showed high prevalence of overweight and obesity in both genders. Furthermore, body size confusion and weight change wishes were widespread in both genders, but not related to self-perceived health.

**Conclusions:** As a result of the qualitative findings, we suggest that when addressing overweight in young women, one should have a more relaxed attitude towards appearance and more attention on health and well-being. It is important to take into account that the inherent and unavoidable alterations in life of young adults involve obstacles for lifestyle changes. Health education and structural changes such as making healthy food and sports activities easier accessible and more affordable should be considered in health promoting strategies. The lack of relation between body size confusion, body size dissatisfaction and self-perceived health was a surprising result. Furthermore, it is somewhat incoherent to the findings of health and well-being as important aspects from the interviews. The explanation might be found in how the young define and percept their own health.

The prevalence of overweight and obesity is increasing in the relevant age group, and more in our geographical area than in other parts of Norway. This makes it important to expand our knowledge about local environmental and socio-cultural factors as influencers on weight issues and lifestyle habits. In order to catch the complexity of the field, we suggest more research including both genders and the use of combined methods.

## List of papers

The following papers are part of the thesis:

Sand AS, Emaus N, Lian OS. (2015). Overweight and obesity in young adult women: a matter of health or appearance? The Tromsø Study: Fit Futures. *International Journal of Qualitative Studies on Health and Well-being* 22;10:29026.

Sand AS, Emaus N, Lian OS. (2017). Motivation and obstacles for weight management among young women – a qualitative study with a public health focus - The Tromsø Study: *Fit Futures. BMC Public Health* 17:417.

Sand AS, Furberg AS, Lian OS, Nielsen CS, Pettersen G, Winther A, Emaus, N. (2017). Cross-sectional study on differences between measured, perceived and desired body size and the relation to self-perceived health in young adults: The Tromsø Study – Fit Futures. *Scandinavian Journal of Public Health* 45:322-330.

## **Abbreviations**

BMI: body mass index

FF1: Fit Futures 1, 2010/2011

FF2: Fit Futures 2, 2012/2013

HUNT – The Nord-Trøndelag Health Study

Kg: kilogram

M: meter

NIPH: Norwegian Institute of Public Health

NCD-RisC: Non-Communicable Diseases Risk Factor Collaboration

PE: personal exercise

SD: standard deviation

SPH: self-perceived health

SPSS: Statistical Package for the Social Sciences

UiT: UiT The Arctic University of Norway

UNN: University Hospital of North Norway

US: The United States of America

WC: Waist Circumference

WHR: Waist Hip Ratio

WHtR: Waist Height Ratio

WHO: World Health Organization

## 1. Introduction

The worldwide increase in overweight and obesity has been described as epidemic and even pandemic, causing great concern among health authorities, health professionals and researchers (Swinburn et al., 2011). The health consequences of being overweight or obese are disputed, but the increased risk of developing conditions like type 2 diabetes, cardiovascular disease, kidney disease, sleep apnoea, and musculoskeletal disorders is convincing (The Global Burden of Metabolic Risk Factors for Chronic Diseases Collaboration, 2014; Finucane et al., 2011; Romero-Corrall et al., 2010; WHO 2016). Prevention and treatment of overweight and obesity have been challenging, and no country has managed to reverse the internationally increasing trends (Roberto et al., 2015).

The increasing prevalence of overweight and obesity among children, adolescents, and young adults has raised special concerns, in terms of both prevention and treatment. The concerns reflect the fact that overweight in childhood tends to continue into adulthood, thereby causing long-term physical health effects (Summerbell et al., 2003; Bjørge et al., 2008). Furthermore, adolescence and the young adult age are crucial stages of life in terms of establishing good habits of food practice and lifestyle habits in general (Lupton, 1996; Faw, 2014). Another aspect regarding the younger generation is the psychological effects of being overweight or obese. Low self-esteem, bullying and depression have been reported (Friscoe et al., 2010; Friscoe et al., 2013; Holsen et al., 2012; Neumark-Sztainer et al., 2006). Furthermore, the adolescent tendency to worry about appearance and body size in all weight-classes is a matter of concern. Cultural definitions of the “perfect” body is neither a new nor a static phenomenon (Bordo, 1990; Lupton, 2012), but there are reasons to believe that the media attention, especially social media, through the last two decades has caused a new and more substantial focus on appearance (Fardouly et al., 2014; Tiggemann & Zaccardo, 2015;

Simpson & Mazzeo, 2017). Hence, the perceptions of body size and the following concerns in the young population may have constituted yet another weight-related health issue.

To explore these aspects, we studied the connection between overweight, perceptions of health and lifestyle issues including weight perceptions and body size dissatisfaction in a young adult population. The cross-sectional, school based youth survey Fit Futures, which is part of the population based Tromsø study, provided the opportunity to examine these issues in a local setting in Northern Norway. We used both qualitative and quantitative methods. Our aim was to improve our understanding of overweight issues, lifestyle habits and health perceptions in the young adult population. It is our hope that gained insight will provide basis for future preventive strategies.

### **1.1 Definition of overweight and obesity**

Body mass index (BMI), defined as  $\text{kg/m}^2$ , has become the international main measure used when examining and comparing body weight in populations. It has been endorsed by the The World Health Organization (WHO), which has introduced a categorization for weight classes based on BMI (WHO, 2004). For underweight, normal weight and overweight in adults, the main classification is:

Underweight:  $\text{BMI} < 18.5 \text{ kg/m}^2$

Normal Weight:  $\text{BMI } 18.5\text{-}24.9 \text{ kg/m}^2$

Overweight:  $\text{BMI } 25.0\text{-}29.9 \text{ kg/m}^2$

Obesity:  $\text{BMI} > 30 \text{ kg/m}^2$

The origin of BMI dates back to 1832, when the Belgian mathematician, astronomer and statistician Adolphe Quetelet invented the scale in an attempt to define a standard, “average” man or a “unity of the human race” as a part of a religious inspired project (Jutel, 2001). His

work comprised the development of “Quetelet’s Index”, now known as the BMI. BMI has, in many circumstances been considered as an imperfect measure of body fat and health risk (Ogden et al., 2016). With the exception of children and adolescents <18 years, the classification scale is age independent and similar for both genders. Due to different body proportions, BMI does not correspond to the same degree of fatness in different populations. The interpretations of BMI classification in relation to health risk may also differ between populations (WHO, 2016). Furthermore, one of the main criticisms of the use of BMI is that it leaves out data on muscle mass and fat mass, which also tend to differ between ethnicities (Ogden et al., 2016). Waist circumference (WC), waist-hip ratio (WHR), waist height ratio (WHtR) are other important additional measures of obesity, catching especially abdominal obesity, which is strongly associated to increased risk of negative health outcomes (Grant et al., 2015). It is also well known that an “apple-shaped” body (indicating high waist circumference and high abdominal fat content) has stronger association with obesity-related health risks than a “pear-shaped” body (Stevens & Truesdale, 2005). In addition, regional fat percentage measurements by using dual energy x-ray absorptiometry (DXA) is highly accurate but seldom available. Still, BMI is regarded as the most useful population-level measure of body size, being inexpensive and relatively simple to use, either based on standardized measures of height and weight or on self reported data (Grant et al., 2015).

Historically, scarcity of food has from time to time been a serious threat to human existence. Consequently, excess weight or fat was previously regarded as mainly good and desirable in some societies (Eknoyan, 2006). Resource availability and -security in given cultures may influence current perceptions of the idealized body size. This perspective indicates that the thin ideal has been widespread in cultures where resources are plentiful, whereas thickness may be valued higher in cultures where resource availability was limited (Mavoia & McCabe,

2008; Swami et al., 2010; Mellor et al., 2013). Furthermore, cultural and religious values have comprised celebration of food, good care and nurturance in some geographical areas, such as the Pacific Islands (Mavoa & McCabe, 2008; McCabe et al., 2012). Hence, it is important to recognize that there are sociocultural models and societal shifts in body size ideals.

Modernization and so called Westernization, especially the Western media, should be regarded strong influences on current appearance ideals globally (Swami, 2015).

The real concerns about obesity and its complications with the following increased mortality became evident in the first decades of the 20th century. By the 1920's the insurance companies started to link excess weight to increased mortality, and by the 1930's the medical profession recognised obesity as a health problem (Eknoyan, 2008).

## **1.2 The increase in overweight and obesity, worldwide and nationally**

There is convincing evidence of the worldwide increase in human overweight and obesity.

The Non-Communicable Disease Risk Factor Collaboration (NCD-RisC) has made global estimates based on 1698 population based data sources. The results show an increase in mean BMI in men from 21.7 kg/m<sup>2</sup> in 1975 to 24.2 kg/m<sup>2</sup> in 2014, and in women from 22.1 kg/m<sup>2</sup> in 1975 to 24.4 kg/m<sup>2</sup> in 2014. Furthermore, the prevalence of obesity increased from 3.2 % in 1975 to 6.4 % in 2014 in men, and from 6.4 % in 1975 to 14.9 % in 2014 in women.

Available data show remarkable differences between countries. By 2014, The Pacific Islands and the Middle East region had the highest mean BMI, whereas Ethiopia, Eritrea and East Timor had the lowest. The difference in mean BMI between American Samoa and East Timor was 14.4 kg/m<sup>2</sup> in women and 12.1 kg/m<sup>2</sup> in men. In both genders, the difference is equivalent to an approximately 35 kg difference in the mean weight per person (NCD- RisC, 2016). In

high-income regions, the average BMI is higher in English-speaking countries than in continental Europe and the Asia-Pacific region, especially among women (Ezzati & Riboli, 2013). The United States of America (US) has among the highest reported mean BMI and the highest prevalence of obesity in adults with 34.9 % in 2011-2012 (Ogden et al., 2014), and the concerns about increasing BMI and obesity in the young have become a major issue. The prevalence of obesity in children and adolescents aged 2-19 years in the US reached 17.0 % through 2011-2014 (Ogden et al., 2016).

In Norway, the prevalence of overweight and obesity are steadily increasing in the adult population. According to the Tromsø study, mean BMI increased from 25.6 kg/m<sup>2</sup> to 27.3 kg/m<sup>2</sup> in men (30-84 years old) from 1994 to 2008. The corresponding numbers in women (30-87 years old) were 24.9 kg/m<sup>2</sup> and 26.4 kg/m<sup>2</sup>. The age-adjusted prevalence of obesity in 2008 was 18.5 % in women and 20.9 % in men (Jacobsen & Aars, 2016). This number is consistent with findings in surveys from other parts of Norway, such as the Nord-Trøndelag Health Study (The HUNT study) (Drøyvold et al., 2006; The Norwegian Institute of Public Health, 2015).

In our sample from the second wave of the Fit Futures we found that mean BMI in young women was 23.4 kg/m<sup>2</sup> and 22.9 kg/m<sup>2</sup> in young men. Furthermore, the prevalence of overweight and obesity in young women was 13.3 % and 6.6 %, respectively. The corresponding numbers in young men were 20.0 % and 8.3 %. These numbers are slightly higher than the country average for the younger population. Grøholt et al. (2008) reported from school based surveys among 15-16 years old students, that prevalence of overweight and obesity in the three northernmost counties was 15.8 %, while the corresponding number for three counties in the southern part of the country was 11.3 %. A national survey in children in



third grade (8-9 years old), The Child Growth Study, showed a similar pattern with the lowest prevalence of overweight and obesity in the south/eastern part of the country with 15.0 % compared to the northern parts of Norway with 19.2 % (Norwegian Institute of Public Health, 2016).

The consequences of overweight and obesity during childhood and adolescence are potentially serious. Based on data from Norwegian health surveys conducted in 1963-1975, Bjørge et al. (2008) found that obesity in adolescence was related to increased mortality in middle age from several causes. Most common was increased risk of death because of ischemic heart disease, and from endocrine, nutritional, and metabolic diseases.

### **1.3 Causes and historical development**

There are several ways of explaining the causes of the worldwide increase in human BMI. Disturbances in energy balance are important and unavoidable factors in this discussion. The many comprehensive societal changes in the 20<sup>th</sup> century influenced the way people live, first in high-income countries and later throughout the world. These changes comprised mechanization of labour and motorization of transport, and the decreasing levels of physical activity that consequently followed. Furthermore, this development was soon followed by a rise in the food energy supply, with abundance of food and the introduction of cheap, palatable and energy-dense foods. In their historic overview of the development, Swinburn et al. (2011:807) describe the 1960's as the "energy balance flipping point". By this time in history, the reduced energy expenditure requirements for daily living, together with an increase in food energy supply, started to affect the energy balance in the populations of the Western world.

Adjustments of lifestyle habits for weight loss and weight management has been attempted both in research and in clinical practice. There are, however, no simple solutions when it comes to the multifactorial complexity of energy balance (Ferraro et al., 2015). Losing weight with a hypo-caloric diet and physical activity is possible for most individuals, but maintaining the new established weight is challenging. These challenges are often linked to the so called obesogenic environment, described by Ferraro et al., as “forced and socially accepted sedentary – sitting, widespread availability of energy-dense nutrient-poor foods” (Ferraro et al., 2015:7). In adolescents, dieting seems to be common but vaguely defined, and self-reported dieting has been connected to weight gain over time (Neumark-Sztainer et al., 2012). Reliable information, choice and autonomy in relation to food are not to be underestimated when it comes to lifestyle changes in the young (Sheperd et al., 2006). Moderate and vigorous physical activity have been found to be appropriate to prevent excess of body fat in European adolescents (Martinez-Gomez et al., 2010). However, substantial variation in level of physical activity is found, from very sedentary to very active, in the relevant age group (Winther et al., 2015). Therefore, both support and obstacles in the environment must be uncovered and recognised.

The sociocultural influences on daily living and lifestyle are probably also of huge importance but less understood. Interestingly, Swinburn et al. (2011), are pointing to the lack of research in this specific area: “...there has been very little research into understanding the changing and powerful sociocultural determinants of food choices, physical activity and body size perception” (Swinburn et al., 2011: 808). This statement refers to the relevant knowledge gap which is the focus of this thesis.

Large twin-studies have shown results suggesting that genetic factors play a major role in the variation of BMI in adolescence across populations, ethnicity and different societal and structural factors (Silventoinen et al., 2016). Wilding (2012), argues that obesity is a complex disorder caused by individual, genetic, environmental and social factors. According to Wilding (2012), increased consumption of energy dense foods together with decreased levels of physical activity are the main drivers. Hence, this knowledge is essential in order to moderate or stop the increasing rates of overweight. It is not within the scope of this thesis to evaluate the relative importance between environment and genetics regarding the causes of overweight and obesity. We will focus on the environmental and sociocultural factors, such as family, school and media influences, living conditions and financial constraints. These factors are all potentially strong influencers on lifestyle choices at an important stage of life.

The comprehension of overweight and obesity by the medical society, social and psychological researchers, as well as the lay community, has certainly also changed through the recent decades. The view of obesity as a chronic disease of multifactorial nature has become more accepted (Stunkard, 1996). The amounts of research and media attention on the subject have exploded and developed into powerful and pervasive discourses. As a consequence of this development, counter movements and counter arguments have emerged. Researchers from several disciplines suggest that the described picture of a dramatic worldwide increase in body weight is exaggerated and that the benefit of weight loss is debatable (Campos et al., 2006). There has been limited focus on the impact of these dominating discourses around the so-called obesity-epidemic on different groups of the population (Wright, 2009; Lupton, 2013).

#### **1.4 Perceptions of own body size**

It has been hypothesised that culturally influenced body size preferences could affect drivers for weight changes (Neumark-Sztainer et al., 2006; Swinburn et al., 2011). As an example of national differences in such cultural preferences, women from Tonga regard large body size as a positive attribute (Mavoa & Mc Cabe, 2008), while Japanese women idealise a small body size (Hayashi et al., 2006). Research on body image satisfaction, often defined as the degree to which individuals are satisfied with their physical appearance (Holsen et al., 2012), has emerged as an important field of study. Originally, body image research focused on self-image or self-concept within mental or psychological research and not on the physical body as such. However, since 1980 there has been an increasing interest in body image research especially in connection to eating disorders (Markey, 2010). Closely connected to body image, but not completely overlapping, is the concept of body size satisfaction or -dissatisfaction. Dissatisfaction or disturbance regarding body image or body size seems to be widespread phenomena in the young population (McCabe et al., 2006; Holsen, 2012). There is little doubt that the increasing focus on bodily appearance in media, including social media, and the “appearance -oriented society” has a great impact on individuals’ body size concerns, not least in the young population (Tiggemann & Zaccardo, 2015; Fardouly et al., 2015). Research findings also suggest that perceptions of body weight and body image are closely connected to body change intentions and eating disorder behaviours (Fredrickson et al., 2015, Mitchison et al., 2017). These associations make it even more important to gain knowledge about body size perceptions.

### **1.5 Health and well-being in relation to overweight issues**

The concept of health is highly complex and not easily defined. The traditional biomedical model of health has most easily been defined by absence of disease (Blaxter, 2010). In 1946, WHO introduced the well-known definition of health as “A state of complete physical, mental

and social well-being, and not merely the absence of disease and infirmity” (WHO, 2017).

This is more in line with the holistic, multifaceted, and socially conscious definition of health that is more typical for what has been called ‘social health’ (Blaxter, 2010). The WHO definition has, however, been much discussed and criticized over the years, mostly for being difficult to measure and impossible to achieve. The German philosopher Hans Georg Gadamer (1996) refers to the enigmatic and often “hidden character” of health, as opposed to the clear and more confronting character of illness. According to Gadamer, health is a condition of inner accord and harmony with oneself. Consequently, health is also difficult to measure by objective means.

The sociologist Sarah Nettleton (2013) argues that to get closer to the concept of health we must take the lay perspective into account and, furthermore, she points out that ‘healthy living’ and ‘healthiness’ have become commonly used phrases in peoples’ daily life. In line with Nettleton, other researchers claim that the individual notion of health is highly context, age, and gender sensitive (Kristensen & Køster, 2014; Spencer, 2014). Looking at the young population, they seem to have a broader perception of health compared to adults, often strongly connected to general well-being, happiness, having fun, and the ability to cope with challenges in life (Blaxter, 2010; Nettleton, 2013; Spencer, 2014).

The relationship between health and empowerment in young people is highly relevant when discussing how young people deal with health issues. Common negative assumptions about adolescents’ and young adults’ health and lifestyle are experienced as frustrating and even provoking among the young themselves (Spencer, 2014). According to Spencer, more attention to positive societal contributions from the young and less focus on risk behaviour is

needed. Eventually, such a change of focus can support more positive conceptions of, and approaches to, health promotion and health behaviour (Spencer, 2014).

The relationship between health and overweight issues is somewhat disputed. Some research show that there is a close relationship between obesity and depression (Friscoe et al., 2010; Friscoe et al., 2013). However, according to Wardle & Cooke (2005), this relationship is not so clear-cut. Body size dissatisfaction seems to be widespread in the young (Neumark-Sztainer et al., 2006; Holsen et al., 2012; Mitchison et al., 2017), but the actual relation between overweight issues and depression or lower self-esteem is not unequivocal (Wardle & Cooke, 2005).

Without any clear-cut definition of health, the question of how health can be measured is much debated. Self-perceived health (SPH) is often used as an item in questionnaires in population surveys. People are asked to rate their health as excellent, good, fair or poor. Although this simple question seems rather vague and subjective, it matches remarkably well with more objective measures and predicts mortality at a population level (Blaxter, 2010; Jylhä, 2009). The notion of well-being and how to measure it is closely connected to the concept of SPH, especially in the young (Breidablik et al., 2008). The concepts of health, well-being and especially SPH and their connection to weight issues will be further elaborated in the Discussion section.

## **2. Rationale and aims**

The present thesis deals thematically with overweight, lifestyle and health related issues in the young adult, and mainly the female population. The overall aim is to provide a deeper understanding of the complexities connected to these issues at an important stage of life. With

an explorative, descriptive design utilizing both qualitative and quantitative methods our aim is to answer the following research questions:

- How does the present focus on overweight and obesity affect young women? (Paper 1).
- To which extent are young women concerned about weight reduction or weight balance, and what are the main factors influencing young women's lifestyle? (Paper 1 and 2).
- Which (socio-) environmental factors are prominent obstacles regarding overweight and lifestyle issues in young women? (Paper 2).
- Does confusion or dissatisfaction regarding body size influence young adults' general health and well-being? (Papers 1 and 3).

Our hope is that more knowledge about these questions can provide guidance to prevention and treatment for overweight and obesity the young population. Importantly, we regard insight into harmful weight concerns and their connections to overall health as part of the picture.

### **3. Materials and methods**

To answer our research questions, we designed our study into three parts, reported in three papers. Two papers were based on qualitative methods and, whereas one was based on quantitative methods and data from a questionnaire.

**Table 1. Overview of studies and papers 1-3**

	<b>Participants</b>	<b>Methods</b>	<b>Data collection</b>	<b>Data analyses</b>	<b>Focus</b>
1	12 overweight and normal weight women, 18-22 years old	Qualitative	Semi-structured, in-depth interviews	Phenomenological hermeneutic approach and content analyses	Perceptions, experiences of the focus on overweight. Health versus appearance.
2	12 overweight and normal weight women, 18-22 years old	Qualitative	Semi-structured, in-depth interviews	Phenomenological hermeneutic approach and thematic analyses	Motivation and obstacles for weight reduction and lifestyle changes with a public health focus
3	364 women and 265 men, all weight classes, 18-22 years old	Quantitative	Anthropometric measurements, questionnaires	Descriptive statistics	Differences in measured, perceived and desired weight, and the relation to self-perceived health.

### 3. 1 Study population, Fit Futures

The Tromsø Study is a population based study with repeated health surveys. It has been ongoing since 1974, inviting large groups of the adult and elderly population in the municipality of Tromsø to comprehensive health examinations (Jacobsen et al., 2012). As part of the Tromsø Study, a youth cohort and school based population study, Fit Futures, was performed in two waves within a time space of two years (2010-11, 2012-13). The surveys were organized in collaboration between UiT The Arctic University of Norway (responsible for the Tromsø Study), the University Hospital of North Norway (UNN) and the Norwegian Institute of Public Health (NIPH). The overall aim was to study adolescents' health and health behaviour in a broad perspective in line with the original Tromsø Study. Students in upper-secondary school from eight schools in two neighbouring municipalities in Northern Norway,



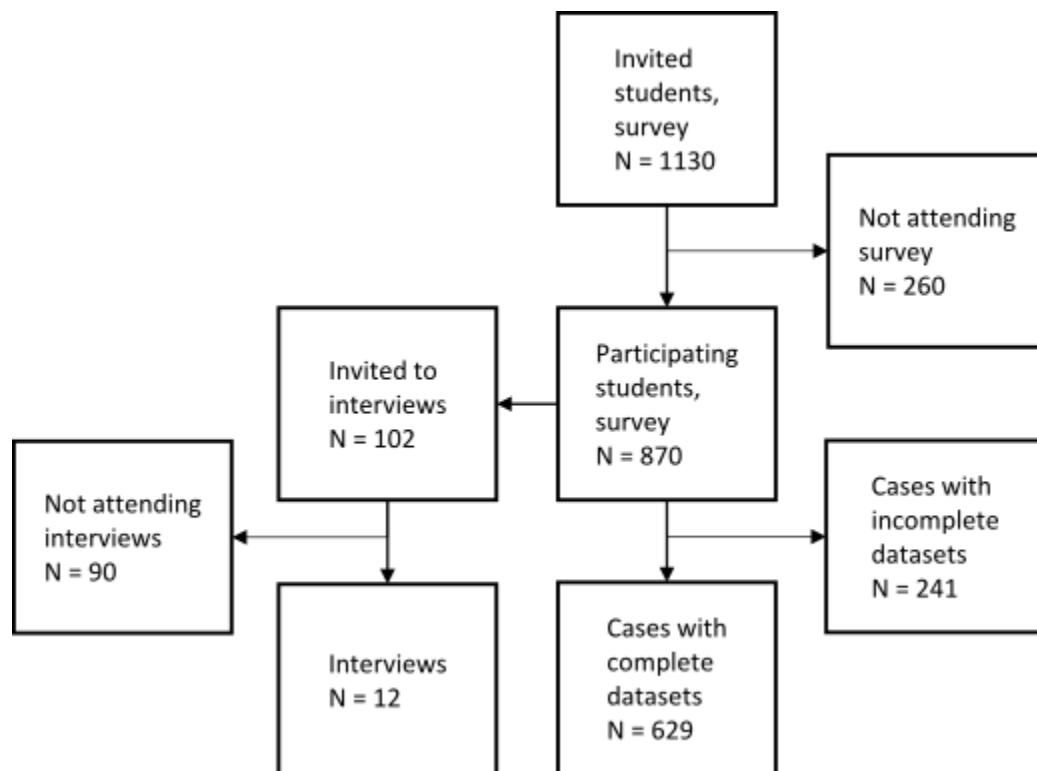
Tromsø and Balsfjord, were invited to participate. The first wave of the survey, Fit Futures 1, was accomplished in 2010/2011 when the students were in their first year of upper secondary school, at the age of 15-16 years. A total of 1,117 students were invited and 1,038 attended, giving an attendance rate of 93 %. The second wave, Fit Futures 2, was accomplished two years later in the same schools, when the participants were in the last year of upper secondary school and at the age of 18-19 years mainly. The total number of invited students was 1,130 and this time 870 attended, giving an attendance rate of 77 %. The measurements were performed at the well established Clinical Research Unit at the UNN.

The participants for the qualitative part of the present study were all recruited among the second wave participants. The sample consisted of 12 women from two different weight groups. One group was moderately overweight or slightly obese, with a BMI between 27.0 and 32.9 kg/m<sup>2</sup>. The other group was within normal weight range with a BMI between 18.5 and 24.9 kg/m<sup>2</sup>. The reason for choosing two weight groups was that we wanted to explore and compare experiences and perceptions from a wider range of perspectives. We chose not to include participants who were underweight or suffered from severe obesity, as these health issues often call for other approaches than just lifestyle modifications. There are well known substantial gender differences regarding weight and lifestyle issues (Holsen et al., 2012, McCabe et al., 2006; Nilsen et al., 2010; Wardle et al., 2006). In order to focus the study, we wanted to limit our sample to women only. All the participants in the qualitative part of the study were 18 or 19 years old at the time of the interview.

The data for the quantitative part of the study was collected from the same cohort, the Fit Futures 2 survey, consisting of anthropometric measurements and data from the

questionnaires. We excluded those who were 23 years or older, and the youngest included participants were 18 years. Mean age was 18.2 years for women and 18.3 years for men. Participants that failed to report on the relevant data were not included. The sample consisted of 629 participants, 364 women and 265 men.

**Figur 1. Flow Chart**



### 3.2 Qualitative methods

The qualitative part of this thesis is based on a phenomenological hermeneutical approach to experiential data. This means that qualitative data were collected and analysed in order to explore in-depth the meaning of human lived experiences.

As one of the main qualitative research traditions, phenomenology is rooted in the philosophical tradition developed by the German philosophers Edmund Husserl and Martin Heidegger in the 19<sup>th</sup> and 20<sup>th</sup> century (Polit & Beck, 2008). Hermeneutics is another philosophical tradition. Martin Heidegger played an important role in the development of hermeneutics, which was mainly based on existential phenomenology, and is also referred to as interpretive phenomenology. Paul Ricoeur, Maurice Merleau-Ponty and Hans Georg Gadamer are also known as important influencers of the hermeneutic tradition (Dahlberg et al., 2008). Gadamer described how we can understand the whole of a text in terms of its parts and the parts in terms of a whole, the hermeneutic circle (Polit & Beck, 2008).

The two traditions share common ground and are not to be understood separately. The life-world perspective is a central theme in of both traditions. This view or way of thinking provides ideas about how we can increase our understanding of our “being to the world”, how we relate to each other and the world (Dahlberg et al., 2008).

In the case of young adults, the major transitions that follow this phase of their life-course make the life-world perspective very relevant. The way they see themselves and their relation to their changing surroundings is difficult to capture through any other methodological approach. Decisions regarding education or work or way of living would be impossible to describe without taking into account the participants understanding of themselves and the meaning that their situation hold for them (Dahlberg et al., 2008). Openness, curiosity, reflexivity and sensitivity are all essential methodological characteristics when we are aiming at an open-minded processes of understanding. Furthermore, consciousness of our presuppositions, or prejudice (Gadamer, 1995; Dahlberg et al., 2008) is important, but nevertheless challenging.

### **3.2.1 Data collection for the qualitative part**

Data was collected through semi-structural in-depth interviews, as described by Kvale & Brinkmann (2009). These interviews are used to understand the lived day-to-day experience of the subjects. Although close to an everyday conversation, the professional interview is characterized by its purpose. Furthermore, the semi-structured technique places the interview somewhere between an open conversation and a closed questionnaire. Transcriptions and text from the interviews are subsequently analysed (Kvale & Brinkman, 2009).

We conducted the interviews with the help of a topic guide (Appendix A). The same topic guide was used for both weight groups, but the questions were slightly adjusted in the interviews with participants from the normal weight group. The guide contained the following main topics: participants' view on nutrition and eating habits, physical activity in school and leisure time, sleeping habits, stress in everyday life, media influences, lifestyle as a concept, and the 24/7 lifestyle. The opening question concerned the general focus on overweight issues as experienced by the participants. In this way, we started the interview and opened up the topic, including the participants' personal experiences. Follow-up questions were used when new topics came up and when expressions needed to be clarified. The concluding question was if anything important regarding the topics had been left out of the conversation from the participant's point of view. This turned out to be an important question because it opened up for important topics not covered initially. The interview guide therefore served as a tool for ensuring that all the predefined topics were covered at the same time as it opened up for new themes to emerge. The interviews proceeded fluently but not always in the same succession. In general, the participants seemed interested in and comfortable with discussing the themes.

The interviews were conducted between June 2013 and February 2014, within a few weeks or months after the survey. The transcriptions were done by the first author within a few days of the interviews to help memorise the non-verbal responses and the general atmosphere of the conversations. All the interviews were carried out at the Clinical Research Unit where the Fit Future surveys also took place.

### **3.2.2 Analysis and interpretation of the qualitative data**

A phenomenological hermeneutic method was the underlying approach when we analysed papers 1 and 2. Themes for the analysis were drawn inductively from the data after several readings of the transcriptions, and were not defined in advance. In the first stage of the analysis we identified several themes that emerged across the dataset (no themes were defined in advance). In the second stage, we classified meaning units related to the list of themes consistently for all interviews. During this phase we continuously discussed and revised our interpretations and classifications, eventually settling on a list of themes. Using our data-driven codes, we then classified data extracts belonging to these themes, and analysed the data systematically, first individually and then in face-to-face group discussions with co-authors.

Because of different research questions, we chose to use two different analytical approaches to the qualitative data: Content analysis according to Graneheim & Lundman (2004) in paper 1, and thematic analysis in according to Lindseth & Norberg (2004) and Fereday & Muir-Cochrane (2006) in paper 2. Content and thematic analyses are both commonly used within qualitative research, and they are regarded as similar and partly overlapping. They are regarded as suitable for researchers who are using a relatively low level of interpretation compared to, for instance, grounded theory. The search for themes and coding are typical for

both approaches, but there are some important differences between the two (Vaismoradi et al., 2013; Vaismoradi et al., 2016; Braun & Clark, 2006).

Qualitative content analysis has been widely used by researchers focusing on the characteristics of language as communication with attention to the content of the text. It can be defined as a “research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns” (Hsieh & Shannon, 2005:1278). In a content analysis, themes are often found by the frequency of their occurrence (Vaismoradi et al., 2013).

Thematic analysis is also widely used, but somewhat poorly demarcated and more vaguely described (Braun & Clark, 2006). It is regarded as a flexible method for analysing and reporting themes that organises and describes the data in detail (Braun & Clark, 2006). It is and well suited for narrative materials of life stories. The method attempts to integrate manifest and latent contents when drawing thematic maps (Vaismoradi, et al., 2013).

In paper 1, we emphasized the differences between the weight groups, and the frequency of theme occurrence was an important aspect of the analysing process. In addition, the topics in this paper were more multifaceted and probably more sensitive than those of paper 2. These were the major arguments for choosing content analyses for this paper. In paper 2, we did not emphasize group comparisons. A single comment was regarded as equally important as those that were repeated, and according to the descriptions from Fereday & Muir-Cochrane (2006) and Braun & Clark (2006), this made thematic analysis more relevant. This approach also allows a deeper sensitivity for context (Vaismoradi et al., 2013), which was important considering the main topics of the paper. The focus of this paper was mainly on the alterations

in the relevant stage of life and their implications for lifestyle habits, which were vividly described by participants in both weight groups.

### **3.3 Quantitative methods**

As the original idea and the largest part of this thesis are based on qualitative methods, we chose to limit the quantitative part to simple comparisons without multiple adjustments. This was in our opinion sufficient for the practical aim of complementing the qualitative results. Research based on quantitative methods provides specific statistical generalization of the prevalence and levels of the defined phenomena and differences between groups in the study sample. Where the qualitative researcher seeks to deepen our knowledge, the quantitative researcher seeks to broaden the picture by providing e.g. distributions, prevalence and differences in numbers.

#### **3.3.1 Measurements**

Weight and height were measured using standardized procedures, with light clothes and without shoes, and a Jenix DS 102 Stadiometer (Dong Sahn Jenix, Seoul, Korea). BMI was calculated as weight (kg) divided by height squared ( $m^2$ ) and categorised into weight classes according to the WHO definition (WHO, 2004).

#### **3.3.2 Self-reported data**

Measures of body size, weight change wishes, desired weight and SPH were collected through a self-administrated, on-line questionnaire performed at the same visit as the other measures in the survey (Appendix B).

##### **3.3.2.1 Perceived body size**

Perceived body size was measured by means of of Stunkard's Figure Rating Scale (Stunkard et al., 1983). The scale, one for each gender, consists of nine figures or images of gradually increasing size. The participants were asked to rate their body size: "Which of these figures looks most like your current body shape?"

### **3.3.2.2 Weight change wishes**

Weight change wishes was determined by the question "At present, are you trying to change your body weight?". The response options were "no", "yes, I am trying to put on weight" or "yes, I am trying to lose weight". Desired weight in those who wanted to change weight was determined by asking "Which body weight would you be satisfied with (in kg)?"

### **3.3.2.3 Ideal weight**

Ideal weight was determined by the question "Which body weight would you be satisfied with (in kg)?" This question was answered only by those who wanted to change their body weight.

### **3.3.2.4 SPH**

SPH was determined by asking "How do you in general consider your own health to be?".

The use of levels or answering categories when rating SPH varies, most commonly between four or five categories. For analysing purpose, the results are often dichotomised. In our study, the answers were given as five categories and for the analyses dichotomized into "very poor/poor" and "neither good or poor/ good/excellent".

## **3.4 Statistics**

The analyses were performed using the Statistical Package for the Social Sciences (IBM SPSS version 23). The purpose of the descriptive statistics was to define the prevalence of



overweight and obesity, the prevalence of body size dissatisfaction and to explore the amount of discordance between measured BMI and participant's perceptions of their own body size, and furthermore to investigate these relations to SPH. Numbers and percentages were calculated for categorical variables while mean and SD were calculated for continuous variables. Differences between groups and genders were evaluated with Chi-Square test for categorical variables and Student's T-test for continuous variables. All tests were two-sided, and the level of significance was set to 0.05.

### **3.5 Ethics and recruitment procedure**

In both parts of the study, informed consents were provided and signed according to the Declaration of Helsinki (2013) and the Health Research Act (2008). The qualitative part of the study and the inclusion of data from the surveys were approved by the Regional Committee for Medical and Health Research Ethics; REC North (2012/1621). Eligible participants received written and oral information about the aim of the study, the length of the interview and procedures for confidentiality before accepting to participate. The information also stated that participants should not expect neither advantages nor inconveniences by participating, as long as discussing overweight matters did not make them feel uncomfortable. Participation was presented as absolutely voluntary, and declining to participate would not have any consequences whatsoever. Those who agreed to participate returned one signed consent form in a prepaid envelope or contacted the first author by e-mail. Those who had not signed the informed consent in advance did so just before attending the interview. All the participants kept their own copy of the form (Appendix C and D). The participants received a gift voucher (value 200 NOK equivalent to 25 EUR) as compensation for travel expenses.

The Fit Futures surveys, which the quantitative part of the study was based on, was approved by The Regional Committee of Medical and Health Research Ethics, REC North (2009/1282 and 2011/1702). For the survey, information about the participation was given in the participating schools in advance and repeated just before starting the measurements (Appendix E). No study-related procedures were performed before the informed consent form was signed. All the participants kept their own copy of the form (Appendix F). After attending the survey, the participants received a gift voucher (value 200 NOK equivalent to 25 EUR) as compensation for travel expenses.

## **4. Results**

### **4.1 Summary of papers**

#### **4.1.1 Paper 1**

Following the increasing number of overweight and obese people there is a growing public health concern and focus on body size and lifestyle issues, especially in the media. Young adult women comprise a vulnerable group regarding issues of weight balance and appearance. We examined the experiences of young women on how this focus influences their attitudes concerning weight changes, appearance and health. We conducted 12 interviews with young women from two different weight groups, normal weight and overweight, recruited from The Tromsø Study: Fit Futures 2, a school-based population survey. The results from the semi-structured, in-depth interviews were scrutinized through content analyses. The main findings indicate that young women experience a considerable focus on overweight issues with a trend towards appearance rather than health. Furthermore, overweight and obesity are regarded as sensitive topics. The participants expressed strong views on the cultural definitions of normal body size and appearance leaving them in a squeeze between cultural norms and perceptions of their own body and health. This was described as a possible negative factor influencing well-being as well as motivation for lifestyle changes. As an implication of these findings, we

recommend a more relaxed focus on overweight issues and especially on appearance when addressing weight balance issues and lifestyle changes in young adult women.

#### **4.1.2 Paper 2**

Permanent weight reduction and weight balance have proven difficult to achieve, also in the young population. The aim of this study was to explore the presence of motivation and possible obstacles for weight management and lifestyle changes in young women. We used the same sample as in paper 1, 12 in-depth interviews with young women from two weight groups, normal weight and overweight. For this part of the study, we used thematic analyses to identify, analyse and report relevant themes from the data. The participants were clearly motivated for obtaining or keeping normal weight. Independent of weight status, the participants described higher levels of physical activity, better eating habits and better routines in daily life as desirable changes connected to general well-being. Parents were described as important and mainly positive influencers regarding lifestyle habits. Several participants expressed a need for more reliable information about healthy nutrition and eating. Their motivation for physical activity depended on a positive social setting and elements of joy. The participants described the transition into adulthood, including moving out of their parents' home and other structural changes in everyday life, as challenging concerning food habits and lifestyle issues. High costs of healthy food and sports activities were frequently mentioned as barriers. The results showed a complex picture with a tension between motivation for lifestyle changes in individuals and environmental challenges in young women. There seems to be a need for further health strategies aiming at strengthening the individuals' capability to master the environmental challenges in the transition into adulthood. Such strategies should include reliable and accessible information regarding healthy nutrition, better food habits and skills regarding meal preparations. The results indicate that structural

initiatives such as easier access to affordable healthy food and less expensive alternatives for participation in physical activity and sports are needed.

### **4.1.3 Paper 3**

Weight perceptions and weight dissatisfaction have become relevant aspects regarding weight management. We wanted to explore the relationships between measured, perceived and desired body weight and self-perceived health in young adults. We used data from a school-based population study in Northern Norway, The Tromsø Study: Fit Futures 2, accomplished in 2011/2012. Height, weight and self-reported data from questionnaires were used. A total of 364 young women and 265 young men (aged 18-23 years) reported on the main variables, and overweight and obesity were found in 20 % of the women and 28 % of the men. In both genders, there were considerable discrepancies between BMI and perceived body size. A substantial number of participants of both genders wanted to change their weight. Among the 174 women who reported that they were trying to lose weight, as many as 57 (32.8%) had a low, normal weight (BMI 18.5-21.9 kg/m<sup>2</sup>). Correspondingly, among the 66 men that reported that they wanted to gain weight, as many as 19 (28.8 %) had a high normal weight (BMI 22-24.9 kg/m<sup>2</sup>). However, we found no relation between body size confusion, weight change wishes and self-perceived health. This lack of relation was surprising and in conflict with results from previous research and not easy to interpret. To gain more knowledge about these matters, more research, including both qualitative and quantitative methods is needed.

## **5. Discussion**

### **5.1 Methodological considerations**

#### **5.1.2 Study design, a combined approach**

The present study started out as a qualitative study. The explorative and dynamic nature of qualitative research can sometimes lead to the emergence of new and more surprising themes during the stages of the research process (Malterud, 2012; Moen & Middelthon, 2015). The importance of appearance, perceptions of body size and the connections to the perceptions of health that we found in the results from the qualitative part of the study gave us the idea of complementing our research with available quantitative data from the Fit Futures cohort. Hence, we decided to include one paper in the present theses based on cross-sectional data with descriptive statistics, to broaden the picture.

Thus, the study was completed by combining qualitative data from a selected group of young women recruited from a youth cohort, and quantitative data from a larger sample of young women and young men from the same cohort. The experienced health issues seemed to encompass more than just “traditional” lifestyle issues connected to increasing overweight, such as nutrition and physical activity. Therefore, we wanted to pursue the concept of health related to different weight issues, and found a suitable way of doing this by using quantitative data. The use of both methodologies in one study is sometimes called mixed methods and is fairly new, stemming from the 1980’s (Creswell, 2014). However, we do not consider our approach as a true mixed methods approach as we have not actually merged the data but used them as complementary sources. According to Creswell (2014), our design has components from the Convergent Paralell Mixed Methods, as qualitative and quantitative data are compared or related and consecutively interpreted.

Different methodological approaches have different strengths and limitations. One of the ideas behind the use of combined approaches is that all methods have their weaknesses, and that these could be moderated by triangulating data sources. The combination of in-depth

knowledge from qualitative research and information of prevalence and differences in numbers on relevant factors from quantitative research have the potential to balance perspectives and contribute to holism. Multiple and diverse observations from different angles (triangulation) can be especially useful when the aim of the research is to increase the understanding of complex phenomena (Malterud, 2001). At a practical and procedural level, having access to both quantitative and qualitative data from the same cohort gave us the rare possibility to gain a more complete understanding of the research topic by comparing and combining different perspectives (Creswell, 2014). The advantages of using the survey as a base made the combined approach manageable. However, well known challenges of using both approaches include the extensiveness of the data collection and the time-intensive nature of analysing both kinds of data (Cresswell, 2014).

### **5.1.3 The qualitative data**

We originally decided on using a qualitative research design only. To get access to peoples' experiences, perceptions, thoughts and values, a qualitative design is well suited (Dahlberg et al., 2008). To understand individuals and their existence, we must also see how they relate to the world, the context, and to each other: their life-world. This perspective was useful when we tried to capture the inherent alterations and the complexity following the relevant stage of life. The attention is on the participants' understanding of themselves and their world, their search for meaning, which goes beyond objective signs and measures. We considered doing group interviews and individual interviews, but decided to perform only individual semi-structural, in depth, life-world interviews inspired by Kvale & Brinkmann (2009). Before each interview, the interviewee was reminded of the purpose of the study. Subsequently, the topics were introduced and followed up the participants' answers. The use of an interview guide secured that all the relevant topics were covered. However, awareness of new emerging

themes was a high priority. The starting and the concluding questions were rather open, and some of the most essential data emerged through these. For example, the sensitivity of overweight as a subject and the need for a more open communication came up spontaneously after the concluding question in several interviews.

The small sample size could constitute a problem in terms of a selection bias. While the size of the sample is not necessarily crucial in qualitative research, the response rate in our study was worryingly low, about 10 % and 15 % in the overweight and normal weight group respectively, in spite of well planned recruitment procedures and efforts. Possible causes for the modest response could be the sensitivity of the topic or that the participants were less motivated after attending two waves of the Fit Futures survey in two years. Furthermore, many of the participants were obviously in a transitional phase, about to finish or had just finished upper secondary school at the time of the interview. Some were about to, or had just left their local communities for studies or work. However, the participants that attended the study were all 18 or 19 years old at the time of the interview and were living in the same geographical area. They covered different experiences regarding living conditions and different educational/occupational alternatives. The required number of participants for a sample in qualitative research depends on a number of considerations, such as the scope of the study, what is known before, and not least the quality of the data. Some qualitative researchers have pointed to the possible “inverse relationship” between the number of participants and the amount of data collected from each participant (Morse, 2015). According to Malterud (2001), a large amount of material does not guarantee transferability, and could even increase the risk of superficial analysis. In our case, we regarded the rich and vivid descriptions of the relevant themes as compensatory for the small sample size. However, suggested implications of the findings from a small sample should be viewed with caution.

Furthermore, the participants were purposefully selected from two different weight groups, moderately overweight and normal weight. In short, purposeful sampling means to establish a sample with the right potential to illuminate the research question (Malterud, 2012). The two groups were equally sized. We chose the two weight groups because we wanted to study experiences from both point of views: the lived experience of being overweight, and the experiences of and perceptions of weight issues in the participants with normal weight. As we have shown, weight concerns are not restricted to those with a BMI defined as overweight. In addition, weight gain prevention in young adults is of high importance as they are about to establish new lifestyle habits for the future. We wanted to make comparisons between the groups as well as to explore similarities.

Dahlberg (2013) describes the scientific dichotomy between quantitative, or numeric, approaches with their emphasis on calculation, and qualitative, or linguistic, methods and the concerns of understanding the lived world of another human. Furthermore, qualitative research has been considered as holistic, contextualized and comprehensive, especially compared to quantitative research. However, this does not imply that qualitative researchers should not be explicit about the disadvantages as well as the advantages of their methods. For example, the researcher's question and the research setting will always be influenced by the researcher's agenda (Morse & Chung, 2003).

Regarding trustworthiness in qualitative research, the concepts of credibility, dependability and transferability are often used (Graneheim & Lundman, 2004). Credibility is connected to the focus of the research. In our study, the credibility was strengthened by the basis in a population survey with high attendance rate, securing that the participants were recruited from



the relevant age group and the general population. Furthermore, meaning-units, categories and themes were carefully chosen in order to cover the relevant research questions.

Dependability refers mainly to the stability and factors inducing undesirable changes in the data caused by the phenomena in themselves or the study design (Graneheim & Lundman, 2004). Thus, a clear and concise focus throughout the different phases of the study was important. Furthermore, we tried to enhance the study's dependability by collecting the data, doing the transcriptions and performing the analyses within a limited space of time.

Transferability of research findings to other cultures or other contexts can be challenging. However, the rapid development in media including the increasing use of social media in recent years should secure a reasonable common cultural setting for countries in the Western world. However, it is well known that concepts of the ideal body and body sizes varies between geographical areas, nations, ethnicity, and subgroups in populations (Bhuyian et al., 2003; Mavoia & McCabe, 2008; Hayashi et al., 2015; Swami, 2015). This must be kept in mind when comparing research findings.

#### **5.1.4 The quantitative data**

The quantitative data were obtained through the second wave of the Fit Futures study, which in itself was a population-based cross-sectional study. The cross-sectional design means that the study participants are examined at a certain point of time, without any follow-up in longitudinal studies. This design differs from experimental research which seeks to determine if a treatment influences an outcome (Creswell, 2014). We obtained information on participants' height and weight, in addition to self-reported data from the survey. There is no good alternative to self-reported data when our aim is to study self-perceived body size,

weight change wishes and self-perceived health. The possible shortcomings of self-reported data are mainly connected to the degree of candour in the answers and if the sample is representative.

Stunkard's Figure Rating Scale (Stunkard et al., 1983) was used in order to measure the participants' perceptions of their own body size. The scale dates back to 1983 and has been contested over the years. The main objections refer to the coarseness of the scale, restricted range in options and inconsistency between the figures (Bulik et al., 2001; Grant et al., 2015). Another limitation is the missing opportunity to detect the valuation of muscularity. However, the pictogram has been widely used and presented as both reliable and robust, especially for distinguishing overweight and obesity from normal weight, and as an adjunct for self-reported height and weight (Bulik et al., 2001; Bhuiyan et al., 2003; Grant et al., 2015; Song et al., 2016.). In the present study, there were no relevant alternatives for determining perceptions of body size. We chose a rather conservative definition of which perceptions that were discordant with the measured BMI. Furthermore, we considered the possibility for comparing the use of the scale as normative data with exact measurements of BMI from the same survey, as an important advantage. The results should, however, be interpreted in the light of the described limitations.

SPH, or self-rated/self-reported/self-assessed health, is a commonly used single item assessing an individual's overall perception of own health status. SPH has been frequently used in health surveys nationally and internationally as a general health indicator and predictor of more objective health status. Furthermore, SPH has proven a strong predictor for mortality in the adult population, but the reasons for this are not well understood (Jylhä, 2009; Blaxter, 2010; Lorem et al., 2017). According to Blaxter (2010), most people when asked

directly define their health as excellent or good, in spite of symptoms, impairments and even disease. This is usually explained as an indication of health as a social norm. Furthermore, health is often displayed as a relative concept and depending on expectations (Blaxter, 2010).

In adolescents and young adults, SPH seems to be more connected to the self-concept of health than to a medical health status, which is the case in the more adult population (Breidablik et al., 2008). According to Jylhä (2009), age specific expectations of good health in the young may lead to interpretations of their own health that differs from those of older people. Favourable health behaviour and fitness are likely to predict positive evaluations of health (Jylhä, 2009). Breidablik et al., (2008) found that in the young HUNT study, SPH was remarkably stable through adolescence, and most consistent to changes in general well-being. Piko (2007) found that psychosocial health and especially health compromising behaviour were important predictors for deteriorating SPH in adolescents. The relation between SPH and age is complex and research findings are not easy to interpret. However, as an expression of overall health, SPH matches remarkably well with other objective measures of health on a population level (Blaxter, 2010).

### **5.1.5 The cross-sectional design, validity**

The limitations of cross-sectional designs lie in the lack of ability to identify causal inference and the possibility of selection bias in the sample (Bhopal, 2008) Furthermore, the design is an approach that is prone to limitations which might affect the validity of the findings.

Internal validity concerns the inference that it is the independent variable rather than other factors that caused the outcome (Polit & Beck, 2008). A school based population survey with high attendance rate and accuracy in the performance contributed to the internal validity.

The external validity concerns the generalizability of causal inferences, and the validity of inferences that the observed relationships will hold in other settings, participations and time (Polit & Beck, 2008). The setting in a semi-urban community in a Scandinavian and Western European country and the rapid, worldwide developments in the media should make cultural references known and, with some care, comparable nationally and to some extent internationally. However, as described under transferability in the qualitative part of the study, concepts like ideal body sizes varies between geographical areas and population groups.

#### **5.1.5.1 Random and systematic errors**

In the planning and performance of Fit Futures, detailed protocols and skilled research technicians in a clinical research unit secured circumstances that should help minimize the occurrence of errors. Random errors are due to factors that we cannot control or predict. Repeated measurements will often vary in any direction, too high or too low (Jekel et al., 1996). Large samples and precision in measurements reduce the risk of random errors. Selection bias, information bias or confounding may lead to systematic errors and result in incorrect estimates.

#### **5.1.5.2 Selection bias**

Selection bias in a study is related to the procedure for selection of participants or from factors that could influence the participation (Rothman & Greenland, 1998). There might be differences between factors associated with the participants (responders) and factors associated with those who were invited to participate but did not attend the study (non-responders). The organization of Fit Futures as a school based survey resulted in high

attendance, especially in the 2010-2011 wave. Characteristics of the non-responders to the second wave were not available for the present study and are not yet published. However, participants from all BMI groups were present, and provided answers to all our items.

Therefore, we consider that the risk of selection bias is limited but not ruled out.

### **5.1.5.3 Information bias**

Information bias occurs when measurements of either the exposure or the response is systematically inaccurate (Last, 2001). There are many sources of information bias, and most relevant for our study is probably misclassification (Szklo & Nieto, 2014). In the collection of the self-reported data, misclassification of categorical variables such as weight change wishes is dependent on the candour in the answers. Furthermore, measurement errors in continuous variables such as Stunkard's Figure Rating Scale and SPH depend on how easy it is to categorize one's own health into one of the answering options. In the case of SPH, the age-dependent difference in the definition, understanding and perceptions of health is also a possible source of bias. However, we have no reason to believe that systematic inaccuracy should have occurred.

### **5.1.5.4 Confounding**

Confounding means confusion of effects, and is more likely to occur in observational studies than in experimental studies because of the actions taken to prevent this in the latter, like matching and randomisation. The concept refers to when a non-causal association between an exposure and an outcome is observed. The association is a result of a third variable associated with both the exposure and the outcome (Szklo & Nieto, 2014). Confounding may occur as the confusion of two supposedly causal variables, so that the assumed effect (or part of it) of one variable is actually due to the other (Jekel et al., 1996). In our study, matching and

randomisation was not an option. Gender could obviously be a confounder, so therefore the analysis was performed separately for women and men.

### **5.1.6 Researcher's perspective**

Before moving on to the discussion of results, I will, as a researcher, comment on the differences in the researcher's perspective when dealing with different methods. When using qualitative research methods, it is common to reflect upon the researcher's position. Dahlberg et al., (2008) describe how the qualitative researcher's openness means choosing the right scientific equipment. Awareness about biases, values and personal background is an important aspect of qualitative research (Creswell, 2014). Furthermore, an important part of the qualitative researchers' openness is the ability to be surprised and sensitive to the unexpected. The positioned researcher's human touch and reflexivity are important parts of the research and should not be ignored (Malterud, 2001). During the performance of the interviews, I tried not to dominate or steer the conversation but rather to be conscious about the participants' stories and not only their responses to our pre-determined questions, which I am fully aware were influenced by my pre-understanding of the phenomena in question. Although pre-defined, the questions served as a gateway to richer descriptions. New topics emerged and were followed up.

Contrary to the qualitative approach, the researcher's position in quantitative research is traditionally seen as an approach to phenomena from an impersonal point of view, and so-called objectivity in the research process is regarded as highly important (Creswell, 2014). It is, however, understood that all researchers are participating in the relationship between themselves and what they experience and describe (Dahlberg et al., 2008). In our study, the reasons for including the specific quantitative data came as a result of reflexivity and the

explorative and flexible nature of the qualitative approach that we started out with. We are fully aware of the subjective nature of the proposed questions.

I have had no personal experience with weight issues, but my former position as a research nurse may have influenced my interest in the research topic and the choices made in the planning and accomplishment of the study. The many challenges and often disappointing results of research on overweight issues made me curious and gave me the idea for my master thesis some years ago (Sand, 2011). That study was based on interviews with people (50-60 years old) who had succeeded in a long term reduction from overweight to normal weight. While working on that thesis, my interest in overweight and lifestyle issues increased. In addition, the many changes taking place in the fascinating years of adolescence and early adulthood had become another interest. With the accomplishment of the Fit Futures surveys, I had the opportunity to combine these research interests.

## **5.2 Discussion of results**

The dramatic worldwide increase in body weight and BMI and the following substantial attention on weight issues in young adults definitely formed the basis of this study. The original idea and aim was to gain knowledge about individual, motivational factors, and environmental factors regarding weight issues, lifestyle and health behaviour in the young population. However, through the study, we learned that the relation between weight concerns and health were more multifaceted and complex than we had expected. The perceptions of health in this age group became an important aspect of the study and its three papers. In the following, I will discuss the findings presented in the three papers and their connections to each other – the coherence and contradictions.

### **5.2.1 Perceptions and experiences regarding the focus and attention on overweight issues**

According to the qualitative results presented in our first paper, young women experience a considerable focus on overweight matters. They expressed disappointment as well as frustration over the attention towards appearance in stead of a focus on health-related issues. The participants experienced a squeeze between cultural norms and their own body perceptions. The right to be “proud of your body as it is” was often mentioned, as was frustration regarding the power of definition of ideals. Some of the overweight participants described how this made them feel bad about themselves. Interestingly, health aspects were described as important, but the matter was somewhat displaced by the appearance aspect in the public attention regarding weight issues. According to the participants’ perceptions, health and general well-being were pretty much the same. Feeling healthy was not dependent on normal weight, and worries connected to body size were present in both weight groups. This is in line with findings from other studies showing that weight management and strategies for weight loss are widespread also in people with normal weight (Nissen & Holm, 2014; Eik-Nes et al., 2015).

We also found perceptions of overweight issues as sensitive topics, even among the young women themselves. One participant from the overweight group said that her first reaction to the invitation to participate in our study was anger because she was not happy to be labelled as an overweight person. After discussing the matter with her parents, she eventually changed her mind. As the interview unfolded, she found that she had a lot on her mind regarding the topic and seemed content with sharing her experiences and views, something she had never or rarely done before. Several participants from both weight groups emphasized how talking about overweight and any other weight or health-related subject often seemed to help. The fact that overweight and weight-related health problems were described as sensitive issues



contrasts the descriptions of an omnipresent media attention on the subject. However, it is a fact that some of the messages from the media about overweight and obesity are rather normative, including cultural messages of shame and blame (Malterud & Uriksen, 2010). Interestingly, some researchers call for a more positive conceptualisation of young people and their health. Spencer (2014), found that young people tend to be critical of health promotion discourses that focus on health topics like smoking, drinking, unhealthy eating and low levels of physical activity as they tend to present young peoples' health in a negative way. Frisé & Holmquist (2010) found that adolescents with a high degree of body satisfaction were not strongly affected by comments about their appearance, neither negative nor positive, from family and friends. This finding indicates, not very surprisingly, that the degree of satisfaction or dissatisfaction with your body influences how you feel about discussing your body and appearance.

Our results suggest that the way health issues are presented and focused by the media and the health authorities may affect the way young people talk about such issues. Consequently, more relaxed and positive ways of presenting adolescents and young peoples' health behaviour and life-style habits could prove beneficial and improve communication around weight issues.

### **5.2.2 The tension between motivation and obstacles in connection with weight management**

As presented in the second paper, there was a certain tension between the presence of motivation for weight management and lifestyle changes and the obstacles which the participants experienced in their environment. Moving away from home and the transition into a more independent way of living was clearly challenging. The descriptions in our results

of parents as important and mainly positive influencers are in line with findings from other studies in the same age-group. For example, Sandvik et al., (2009) and Wind et al., (2010) found that fruit intake in adolescents were highly correlated with home environment and home availability. Other factors, such as socio-economic levels and especially higher education levels in mothers were important for health-related dietary patterns, as found in the HUNT study (Nilsen et al., 2009).

Weight gain in young women, especially when moving out of the family home, is a well known phenomenon (Mihalopolous et al., 2008; Wane et al., 2010). However, motivation for weight management and changes for better lifestyle habits were clearly present in both weight groups in our qualitative data. Some participants described how experiences from successful attempts to improve their lifestyle habits, especially higher levels of physical activity, were closely connected to improvements in general well-being. This is not very surprising. It is well known that being proactive and engaged, as people often are when they manage to raise their activity level, is related to general well-being as described by Ryan & Deci (2000) in their work on the Self-Determination Theory. In the present study, the outspoken need for more knowledge and better ability to provide (and afford) healthy meals were presented as barriers for lifestyle improvements. These matters indicate a need for increased skills and know-how on healthy nutrition and meal preparation. There is broad evidence showing that stimulating skills and action is important in nutrition education (Hawkes et al., 2015). Overall, the significance of self-empowerment has been increasingly actualized as a main concern in public health policies (Green & Tones, 2010). Empowerment and the need for health promotion to engage and resonate with young peoples' lived experience have also been highlighted (Spencer, 2014). Furthermore, lay beliefs and lay expertise can be of crucial

importance when it comes to democratization and consumer focus in the use of health and welfare services (Nettleton, 2013).

According to our findings, inhibiting environmental factors in connection with the life-stage seemed to have the potential to outweigh the motivational factors for positive lifestyle changes. These factors were largely connected to living conditions, financial constraints, stress and sleeping problems in addition to lack of knowledge and skills regarding healthy food. The respondents experienced more structured lives as members of the workforce than they did when they were students. We should not underestimate the significance of context at this stage of life (Kristensen & Køster, 2014). Planning and organising our lives around increasingly complex structures of time and space seems to be especially relevant and challenging in stages of transitions in life.

In public health strategies, we often see two competing perspectives, where the responsibility for lifestyle practices is placed either on the individual or on the environment. Roberto et al. (2015) proposes that this way of thinking in dichotomies can actually impede progress. In the case of young adults, it is important to identify and accept the inherent vulnerability of the life-stage. Thus, health strategies should aim at strengthening young individuals' ability to keep up or establish their own good lifestyle habits. Furthermore, bottom-up strategies and a more active attitude from the target group have been found to be more helpful than any top-down strategies for obesity prevention (Huang et al., 2015). With reference to our findings, structural presuppositions in the environment such as easier accessibility to healthy food and ways of being physically active could be important for individuals' lifestyle choices.

### **5.2.3 Confusion and dissatisfaction regarding body size and the perceptions of health**

In the third paper, the quantitative results showed relatively high prevalence of overweight and obesity, in a national setting. High numbers of overweight and obesity in the Northern part of Norway compared to the national average have also been found by others (Grøholt et al., 2008; The Norwegian Institute of Public Health, 2015). Little is known about the possible explanations for these geographical differences.

Confusion and dissatisfaction regarding body size were also remarkably prevalent in both genders. Perceived body size that was discordant with the BMI was more common in men (27.9 %) than in women (20.2 %). More than half of the participants, in both genders, expressed weight changes wishes. The high prevalence of weight confusion and weight change wish in men was somewhat surprising. In women, the high number of participants with normal weight who wanted to change weight was less surprising, but still worrying.

Weight confusion and –dissatisfaction are generally well known phenomena in the young (Bucchianeri et al., 2013; Voelker et al., 2015). However, the causes and consequences are not. Some researchers connect body dissatisfaction, eating disorders, lower levels of physical activity, (Neumark Sztainer et al., 2006; Voelker et al., 2015) and depression (Frisco et al., 2010). Results from the third wave of the HUNT study showed that in adult women aged 19-99 years, 58.8 % reported weight dissatisfaction (Eik-Nes et al., 2015). However, we must keep in mind that some people with overweight may not wish to change their weight. The frustration regarding weight and appearance pressure that we found in paper 1 held signs of protest among the women in the overweight group.

As earlier described, health and well-being were prominent aspects in the experiential data from the two first papers in our study. Thus, it was somewhat surprising that the results from the quantitative part of the study showed no relation between weight confusion and dissatisfaction and SPH. This is contrary to other research findings (Herman et al., 2013), and not easily explained. However, some possible hypotheses can be made and will be briefly outlined in the following paragraph.

#### **5.2.4 Coherence and contradictions in the results**

According to our qualitative findings and with support from other studies (Spencer, 2014; Nettleton, 2013), we have seen that perceptions of health in the young population, contrary to the more adult population, seem to be more independent of the concept of disease. Thus, we can assume that the health risks by being overweight such as the increased risk of developing diabetes or cardiovascular disease are probably not experienced as relevant enough at this young age. As mentioned, the definition of health is highly context- and age sensitive (Kristensen & Krøster, 2014; Blaxter, 2010). In our qualitative data, health was described as an important, but rather broadly and vaguely defined aspect in connection with weight issues and as a general concept. The clear descriptions of well-being following positive lifestyle changes were, however, striking. The fact that this was, allegedly, not solely dependent on weight change wishes is interesting. Especially when we seek to understand how, and to which extent, weight issues influence overall health in the young.

The desire for weight reduction is probably still, to a large extent, driven more by culturally defined ideals of appearance, than ill health or health worries. Consequently, this could contribute to the understanding of why we found no relation between body perceptions and SPH. We can also raise some questions. Are weight confusion and dissatisfaction important

or damaging enough to influence measured SPH? Should these concerns be considered as natural parts of life at this age? As such, the lack of relation between weight dissatisfaction and SPH could be explained as resilience against the described pressure on appearance. Furthermore, the before mentioned counter-movements and protests against the focus on weight management must be kept in mind. We can not rule out that such attitudes were relevant for some of the participants in our study.

## **6. Concluding remarks and future perspectives**

To summarize, I will return to the questions presented as the aims of the study and possible implications of the findings.

- How does the present focus on overweight and obesity affect young women?

The results of our study indicate that young women experience a substantial focus on overweight issues and appearance, and this was described as provoking and even demotivating regarding lifestyle changes. Thus, a more relaxed attitude towards appearance and more focus on health and well-being could be beneficial when addressing weight and lifestyle issues in the young. There is also a need for considerations about how overweight and health issues are communicated to the young, in order to avoid normative and patronizing messages and open up subjects for discussion. It is important to take into account that the perceptions of health and well-being are different from other age-groups when addressing overweight and lifestyle changes.

- To which extent are young women concerned about weight reduction or weight balance, and what are the main factors influencing young women's lifestyle?

- Which (socio-) environmental factors are most prominent as obstacles regarding overweight and lifestyle issues in young women?

The fact that the young were motivated and engaged concerning the need for a healthier lifestyle was promising. Strengthening motivation and self-empowerment in the young could help them face and overcome the inevitable alterations and challenges of independent, adult life. On a public health level, making healthy food and alternatives for physical activity affordable, more easily accessible and tempting for the young should be of high priority. We suggest that such structural changes are needed in order to help individuals make better lifestyle choices.

- Does confusion or dissatisfaction regarding body size influence young adults' general health and well-being?

The finding of widespread confusion and dissatisfaction regarding body size is worrying, and we should not underestimate the detrimental effects on psychological health for some groups, mainly the extremely over- or underweight. The general lack of relation to SPH in our results is, however, surprising and difficult to explain. As stated in paper 3, one possible explanation is that weight confusion and dissatisfaction could be more driven by culturally defined appearance pressure than the actual health risk. However, in paper 1, we found that young women were frustrated by the focus on appearance rather than health whenever overweight issues were discussed. Thus, the results are somewhat incoherent.

However, another possible interpretation is that health consequences and increased risk for disease in the future are just not threatening enough at this stage of life. As indicated in our qualitative results and supported by others, perceptions of health in the young population tend

to be more independent of disease. Thus, explanations for the lack of relation could lie in the perceptions of and the actual notion of health in the young. Concerns regarding appearance and body size may be regarded as inevitable parts of life in the young population, and not necessarily harmful regarding the overall health status.

To pursue possible explanations, we suggest that more research, including in-depth and longitudinal studies, are needed. We must admit that there is still a lot that we do not know regarding weight perceptions, weight dissatisfaction and the connections to overall health. The high prevalence of overweight in the young in our local region makes it important to gain more knowledge about local sociocultural influences regarding weight and health issues. Such knowledge will be necessary in order to find strategies for promoting healthier lifestyle in adolescents and young adults. When dealing with issues connected to the high complexity of human behaviour, and perceptions of health, we do see a need for more research and to combine research methods. Further research should also pay close attention to the gender specific characteristics of the described weight issues, and the connections to unfavourable health behaviour such as eating disorders.



## References

- Bhopal RS. (2008). *Concepts of epidemiology integrating the ideas, theories, principles and methods of epidemiology* 2<sup>nd</sup> ed. Oxford: Oxford University Press. XXXVII, 417.
- Bhuiyan AR, Gustat J, Srinivasan SR, Berenson, GS. (2003). Differences in body shape representations among young adults from a biracial (Black-White), semirural community: the Bogalusa Heart Study. *American Journal of Epidemiology* 158:792-7.
- Bjørge T, Engeland A, Tverdal A, Smith GD. (2008). Body mass index in adolescence in relation to cause-specific mortality: a follow-up of 230,000 Norwegian adolescents. *American Journal of Epidemiology* 168:30-7.
- Blaxter M. (2010). *Health*. 2<sup>nd</sup> ed. Polity Press, Cambridge, UK.
- Bordo S. (1990). Reading the Slender Body. In: Jacobus M, Fox Keller E and Shuttleworth S (eds.). *Body/Politics: women and discourses of science* pp 83-112. Routledge, New York.
- Braun V, Clarke V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology* 3:77-101.
- Breidablik HJ, Meland E, Lydersen S. (2008). Self-rated health during adolescence: stability and predictors of change (Young-HUNT study, Norway). *European Journal of Public Health* 19:73-8.
- Bucchianeri MM, Arikian AJ, Hannan PJ, Eisenberg ME, Neumark-Sztainer D. (2013). Body dissatisfaction from adolescence to young adulthood: Findings from a 10-year longitudinal study. *Body Image* 10:1-7.
- Bulik CM, Wade TD, Heath AC, Martin NG, Stunkard AJ, Eaves LJ. (2001). Relating body mass index to figural stimuli: population-based normative data for Caucasians. *International Journal of Obesity* 25:1517-24.
- Cresswell JW. (2014). *Research Design. Qualitative, quantitative and mixed methods approaches*. 4<sup>th</sup> ed. SAGE, Los Angeles, London, New Delhi, Singapore, Washington DC.
- Dahlberg K. (2013). The scientific dichotomy and the question of evidence. (guest ed.) *International Journal of Qualitative Studies on Health and Well-being* 8:21846.
- Dahlberg K, Dahlberg H, Nyström M. (2008). *Reflective Lifeworld Research*. Studentlitteratur, Lund.
- Declaration of Helsinki. (2013). Available from: <https://www.wma.net/policies-post/wma-declaration-of-helsinki-ethical-principles-for-medical-research-involving-human-subjects/>  
Access date: 15.03.17
- Drøyvold WB, Nilsen TI, Krüger Ø, Holmen TL, Krokstad S, Midthjell K, et al. (2006). Change in height, weight and body mass index: Longitudinal data from the HUNT Study in Norway. *International Journal of Obesity* 30:935-9.

- Eik-Nes T, Romild U, Guzey I, Holmen T, Micali N, Bjørnelv S. (2015). Women's weight and disordered eating in a large Norwegian community sample: the Nord-Trøndelag Health Study (HUNT). *BMJ Open* 5:e008125.
- Eknoyan G. (2008). Adolphe Quetelet, 1796-1874 – the average man and indices of obesity. *Nephrology Dialysis Transplantation* 23:47-51.
- Eknoyan G. (2006). A History of Obesity, or How What Was Good became Ugly and Then Bad. *Advances in Chronic Kidney Disease* 13:421-7.
- Ezzati M, Riboli E. (2013). Behavioral and dietary risk factors for noncommunicable diseases. *The New England Journal of Medicine* 369:954-64.
- Faw MH. (2014). Young Adults' Strategies for Managing Social Support During Weight-Loss Attempts. *Qualitative Health Research* 24:267-78.
- Fardouly J, Diedrichs OC, Vartainen LR, Halliwell E. (2015). Social comparisons on social media: The impact of Facebook on young women's body image concerns and mood. *Body Image* 13:28-45.
- Fereday J, Muir-Cochrane, E. (2006). Demonstrating Rigor Using Thematic Analysis: A Hybrid Approach of Inductive and Deductive Coding and Theme Development. *International Journal of Qualitative Methods* 5:80-92.
- Ferraro ZM, Patterson S, Chaput JP. (2015). Unhealthy Weight Control Practices: Culprits and Clinical Recommendations. *Clinical Medical Insights: Endocrinology and Diabetes* 8:7-11.
- Finucane MM, Stevens GA, Cowan MJ, Danaei G, Lin JK, Paciorek CJ, et al., on behalf of the Global Burden of Metabolic Risk Factors of Chronic Diseases Collaborating Group (Body Mass Index). (2011). National, regional and global trends in body-mass index since 1980: systematic analysis of health examination surveys and epidemiological studies with 906 country-years and 9.1 million participants. *Lancet* 377:557-67.
- Friscoe ML, Houle JN, Martin AM. (2010). The Image in the Mirror and the Number on the Scale. Weight, Weight Preferences, and Adolescent Depressive Symptoms. *Journal of Health and Social Behavior* 51:215-28.
- Friscoe ML, Houle JN, Lippert AM. (2013). Weight Change and Depression among US Young Women During the Transition to Adulthood. *American Journal of Epidemiology* 178:22-30.
- Frisén A, Holmqvist K. (2010). What characterizes early adolescents with a positive body image? A qualitative investigation of Swedish girls and boys. *Body Image* 7:205-12.
- Fredrickson J, Kremer P, Swinburn B, de Silva A, McCabe M. (2015). Weight perception in overweight adolescents: Associations with body change intentions, diet and physical activity. *Journal of Health Psychology* 20:774-84.

Gadamer HG. (2004). *Truth and Method*. Second revised edition. Continuum, London New York.

Gadamer HG. (1996). *The Enigma of Health*. UK:Polity Press, Cambridge.

Graneheim UH, Lundman B. (2004). Qualitative Content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today* 24:105-12.

Grant JF, Chittleborough CR, Taylor, AW. (2015). Parental Midlife Body Shape and Association with Multiple Adult Offspring Obesity Measures: North West Adelaide health Study. *PLoS ONE* 10:e0137534.

Green J, Tones K. (2010). *Health Promotion. Planning and strategies*. 2<sup>nd</sup> ed. SAGE Los Angeles, London, New Delhi, Singapore, Washington DC.

Grøholt EK, Stigum H, Nordhagen R. (2008). Overweight and obesity among adolescents in Norway: cultural and socio-economic differences. *Journal of Public Health* 30:258-65.

Hawkes C, Smith TG, Jewell J, Wardle J, Hammond RA, Friel S. (2015). Smart food policies for obesity prevention. *Lancet* 385:2410-21.

Hayashi F, Takimoto H, Yoshita K, Yoshiike N. (2006). Perceived body size and desire for thinness of young Japanese women: a population-based survey. *British Journal of Nutrition* 96:1154-62.

Health Research Act. (2008). Available from: <https://lovdata.no/lov/2015-05-07-26>. Access date: 03.04.17

Herman KM, Hopman WM, Rosenberg MW. (2013). Self-rated health and life satisfaction among Canadian adults: associations of perceived weight status versus BMI. *Qualitative Life Research* 22:2693-705.

Holsen I, Jones DC, Birkeland MS. (2012). Body image satisfaction among Norwegian adolescents and young adults. A longitudinal study of the influence of interpersonal relationships and BMI. *Body Image* 9:201-8.

Hsieh HF, Shannon S. (2005). Three Approaches to Qualitative Content Analysis. *Qualitative Health Research* 15:1277-88.

Huang TT, Cawley JH, Ashe M, Costa SA, Frerichs LM, Zwicker L, et al. (2015). Mobilisation of public support for policy actions to prevent obesity. *Lancet* 385:2422-31.

Jacobsen BK, Aars, NA. (2016). Changes in body mass index and the prevalence of obesity during 1994-2008: repeated cross-sectional surveys and longitudinal analyses. The Tromsø Study. *BMC Obesity* 3:41.

Jacobsen BK, Eggen AE, Mathiesen EB, Wilsgaard T, Njølstad I. (2012). Cohort profile: the Tromsø Study. *International Journal of Epidemiology* 41:961-7.

Jekel JF, Elmore JG, Katz, DL. (1996). *Epidemiology, Biostatistics, and Preventive Medicine*. W.B. Saunders Company. United States of America.

Jutel AM. (2001). Does Size Really Matter? Weight and Values in Public Health. *Perspectives in Biology and Medicine* 44:283-96.

Jylhä M. (2009). What is self-rated health and why does it predict mortality? Towards a unified conceptual model. *Social Science and Medicine* 69:307-16.

Kristensen ST, Køster A. (2014). Contextualizing eating problems in individual diet counselling. *Health: An Interdisciplinary Journal for the Social Study of Health, Illness and Medicine* 18:319-31.

Kvale S, Brinkmann, S. (2009). *Interviews. Learning the Craft of Qualitative Research Interviewing*. 2<sup>nd</sup> ed. Los Angeles, London, New Delhi, Singapore: SAGE Publications.

Last JM. (2001). *A Dictionary of Epidemiology*. 4<sup>th</sup> ed. Oxford: Oxford University Press.

Lindseth A, & Norberg A. (2003). A phenomenological method for researching lived experience. *Scandinavian Journal of Caring Sciences* 18:145-53.

Lorem GF, Schirmer H, Wang CE, Emaus N. (2017). Ageing and mental health: changes in self-reported health due to physical illness and mental health status with consecutive cross-sectional analyses. *BMJ Open* 7:e013629.

Lupton D. (1996). *Food, the Body and the Self*. SAGE Publications, London.

Lupton D. (2012). *Medicine as Culture. Illness, Disease and the Body*. 3<sup>rd</sup> ed. SAGE Publications, Los Angeles, London, New Delhi, Singapore, Washington.

Lupton D. (2013). *Fat*. Routledge, London and New York.

Malterud K. (2001). Qualitative research: standards, challenges, and guidelines. *Lancet* 358:483-8.

Malterud K. (2012). *Fokusgrupper som forskningsmetode for medisin og helsefag*. Universitetsforlaget, Oslo.

Malterud K, Ulriksen K. (2010). “Norwegians fear fatness more than anything else” – A Qualitative study of normative newspaper messages on obesity and health. *Patient Education and Counselling* 81:47-52.

Markey C. (2010). Invited commentary: Why Body Image is Important to Adolescent Development. *Journal of Youth and Adolescence* 39:1387-91.

Martinez-Gomez D, Ruiz JR, Ortega FB, Veiga OL, Moliner-Urdiales D, Mauru B, et al. (2010). Recommended Levels of Physical Activity to avoid an Excess of Body Fat in

European Adolescents, The Helena Study. *American Journal of Preventive Medicine* 39:203-11.

Mavoia HM, McCabe M. (2008). Sociocultural factors relating to Tongans' and Indigenous Fijians' patterns of eating, physical activity and body size. *Asia Pacific Journal of Clinical Nutrition* 17:375-84.

McCabe M, Ricciardelli LA, Ridge D. (2006). "Who Thinks I Need a Perfect Body?" Perceptions and Internal Dialogue among Adolescents about Their Bodies. *Sex Roles* 55:409-19.

McCabe MP, Waqa G, Dev A, Cama T, Swinburn, B. (2012). The role of cultural values and religion on views of body size and eating practices among adolescents from Fiji, Tonga and Australia. *British Journal of Health Psychology* 18:383-94.

Mellor D, Fuller-Tyszkiewicz M, McCabe MP, Ricciardelli L, Skouteris H, Mussap AJ. (2013). A test of the resource security and the body mass index reference point hypothesis of body dissatisfaction amongst adolescents in eight countries. *Ethnicity & Health* 19:548-64.

Mihalopoulos NL, Auniger P, Klein JD. (2008). The Freshman 15: Is it Real? *Journal of American College Health* 56:531-33.

Mitchison D, Hay P, Griffiths S, Murray SB, Bentley C, Gratwick-Sarll K, et al. (2017). Disentangling body image: The relative associations of overevaluation, dissatisfaction, and preoccupation with psychological distress and eating disorder behaviors in male and female adolescents. *International Journal of Eating Disorders* 50:118-26.

Moen K, Middelthon AL. (2015). Qualitative Research Methods. In Laake P, Benestad HB, Olsen BR, (eds.). *Research in Medical and Biological Sciences: From Planning and Preparation of Grant Application and Publication, chapter 10, pp 321-78*. Academic Press, Elsevier, London.

Morse JM. (2015). Analytic Strategies and Sample Size. *Qualitative Health Research* 25:1317-8.

Morse JM, Chung, SE. (2003). Towards Holism: The Significance of Methodological Pluralism. *International Journal of Qualitative Methods* 2:13-20.

NCD Risk Factor Collaboration (NCD-RisC). (2016). Trends in adult body-mass index in 200 countries from 1975 to 2015: a pooled analysis of 1698 population-based measurements studies with 19.2 million participants. *Lancet* 387:1377-96.

Nettleton S. (2013). *The Sociology of Health and Illness*. 3<sup>rd</sup> ed. UK: Polity Press, Cambridge.

Neumark-Sztainer D, Paxton SJ, Hannan P, Haines J, Story M. (2006). Does Body Satisfaction Matter? Five-year Longitudinal Associations between Body Satisfaction and Health Behaviours in Adolescent Females and Males. *Journal of Adolescent Health* 39: 244-51.

Neumark-Sztainer D, Wall M, Story M, Standish BS. (2012). Dieting and Unhealthy Weight Control Behaviors During Adolescence: Associations WITH 10-Year Changes in Body Mass Index. *Journal of Adolescent Health* 50:80-6.

Nilsen SM, Krokstad S, Holmen TL, Westin S. (2010). Adolescents' health-related dietary patterns by parental socio-economic position, The Nord-Trøndelag Health Study (HUNT). *The European Journal of Public Health* 20:299-305.

Nissen NK, Holm L. (2015). Literature review: perceptions and management of body size among normal weight and moderately overweight people. *Obesity Reviews* 16:150-60.

Norwegian Institute of Public Health. (2015). Overvekt og fedme. Available from <https://www.fhi.no/fp/overvekt/> Access date: 27.01.16

Norwegian Institute of Public Health. (2016). The Norwegian Children Growth Study. Available from: <https://www.fhi.no/en/news/2016/proportion-overweight/> Access date: 03.03.17

Ogden CL, Carroll MD, Kit BK, Flegal KM. (2014). Prevalence of childhood and adult obesity in the United States, 2011-2012. *Journal of the American Medical Association* 311:806-14.

Ogden CL, Carroll MD, Lawman HG, Fryar CD, Kruszon-Moran D, Kit BK, et al. (2016) Trends in Obesity Prevalence Among Children and Adolescents in the United States, 1988-1994 Through 2013-2014. *Journal of the American Medical Association* 315:2292-9.

Polit D, Beck CT. (2008). *Nursing Research. Generating and Assessing Evidence for Nursing Practice*. 8<sup>th</sup> ed. Lippincott Williams & Wilkins, Philadelphia.

Piko BF. (2007). Self-perceived health among adolescents: the role of gender and psychosocial factors. *European Journal of Pediatrics* 166:701-8.

Roberto CA, Swinburn B, Hawkes C, Huang TT-H, Costa SA, Ashe M, et al. (2015). Patchy progress on obesity prevention: emerging examples, entrenched barriers, and new thinking. *Lancet* 385: 2400-9.

Romero-Corral A, Caples SM, Lopez-Jimenez, F, Somers VK. (2010). Interactions Between Obesity and Obstructive Sleep Apnoe. *Chest* 137:711-9.

Rothman KJ, Greenland S. (1998). Precision and Validity in Epidemiological *Studies*, in *Modern Epidemiology*, Rothman KJ, & Greenland S. (eds.). Lippincott Williams & Wilkins, Philadelphia, pp 115-34.

Ryan RM, Deci EL. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist* 55:68-78.

Sand AS. (2011). Fra overvektig til normalvektig. En kvalitativ studie av varig vektnedgang. Masteroppgave i Helsefag. Universitetet i Tromsø. <http://hdl.handle.net/10037/3437>

Sandvik C, Gjestad R, Samdal O, Brug J, Klepp KI. (2010). Does socio-economic status moderate the associations between psychosocial predictors and fruit intake in schoolchildren? The Pro Children study. *Health Education Research* 25:121-34.

Sheperd I, Harden A, Rees R, Brunton G, Garcia J, Oliver S, et al. (2006). Young people and healthy eating: a systematic review of research on barriers and facilitators. *Health Education research* 21:239-57.

Silventoinen K, Jelenkovic A, Sund R, Yoon-Mi H, Yokoyama Y, Honda C, et al. (2016). Genetic and environmental effects on body mass index from infancy to the onset of adulthood: an individual-based pooled analysis of 45 twin cohorts participating in the Collaborative project of Development of Anthropometrical measures in Twins (CODATwins) study. *American Journal of Clinical Nutrition* 104:371-9.

Simpson CC, Mazzeo SE. (2016). Skinny Is Not Enough: A Content Analysis of Fitspiration on Pinterest. *Journal of Health Communication* 21:1-8.

Song M, Hu FB, Wu K, Must A, Chan A, Willett WC, et al. (2016). Trajectory of body shape in early and middle life and all cause and cause specific mortality: results from two prospective US cohort studies. *British Medical Journal* 353:i2195.

Spencer G. (2014). Young people and health: Towards a new conceptual framework for understanding empowerment. *Health: An Interdisciplinary Journal for the Social Study of Health, Illness and Medicine* 18:3-22.

Summerbell CD, Waters E, Edmunds LD, Kelly S, Brown T, Campbell KJ. (2003). Interventions for preventing obesity in children. *Cochrane Database Systematic Reviews* (3):CD001871.

Stevens J, Truesdale, KP. (2005). Fat Distribution. OBESITY/Fat Distribution. *Encyclopedia of Human Nutrition*, 2<sup>nd</sup> ed. pp 329-99. Academic Press, Elsevier, London.

Stunkard AJ. (1996). Current Views on Obesity (review). *The American Journal of Medicine* 100:230-6.

Stunkard AJ, Sørensen T, Schulsinger F. (1983). Use of the Danish Adoption Register for the Study of Obesity and Thinness. *Association for Research in Nervous and Mental Disease Journal* 60:115-20.

Swami V, Frederick DA, Aavik T, Alcalay L, Allik J, Anderson D, et al. (2010). The Attractive Female Body Weight and Female Body Dissatisfaction in 26 Countries Across 10 World Regions: Results of the International Body Project I. *Personality and Social Psychology Bulletin* 36:309-25.

Swami, V. (2015). Cultural influences on body size ideals: Unpacking the impact of Westernisation and modernisation. *European Psychologist* 20:44-51.

Swinburn BA, Sacks G, Hall KD, McPherson K, Finegood DT, Moodie, ML, et al. (2011). The global obesity pandemic: shaped by global drivers and local environments. *Lancet* 378:804-14.

Szklo M, Nieto FJ. (2014). *Epidemiology. Beyond the basics*. 3<sup>rd</sup> ed. Burlington, Mass.: Jones & Bartlett Learning. XIII, 515.

Tiggemann M, Zaccardo M. (2015). “Exercise to be fit, not skinny”: The effect of fitspiration imaginary on women’s body image. *Body Image* 15:61-7.

Vaismoradi M, Turunen H, Bondas, T. (2013). Content analysis and thematic analysis: Implications for conducting a qualitative descriptive study. *Nursing and Health Sciences* 15:398-405.

Vaismoradi M, Jones J, Turunen H, Snellgrove S. (2016). Development in qualitative content analysis and thematic analysis. *Journal of Education and Practice* 6:100-10.

Voelker D, Reel JJ, Greenleaf C. (2015). Weight status and body image perceptions in adolescents: current perspectives. *Adolescent Health, Medicine and Therapeutics* 6:149-58.

Wane S, van Uffelen JG, Brown W. (2010). Determinants of weight gain in young Women: a review of the litterature. *Journal of Women’s Health* 19:1327-40.

Wardle J, Cooke L. (2005). The impact of obesity on psychological well-being. *Best Practice & Research Clinical Endocrinology and Metabolism* 19:421-40.

Wardle J, Haase AM, Steptoe A. (2006). Body image and weight control in young adults: international comparisons in university students from 22 countries. *International Journal of Obesity* 30:644-51.

Wilding J. (2012). Are the causes of obesity primarily environmental? Yes. *British Medical Journal* 345:e5843

Wind M, Te Welde S, Brug J, Sandvik C, Klepp KI. (2010). Diet and direct interaction between environmental factors and fruit intake, mediation by psychosocial factors: the Pro Children study. *Public Health Nutrition* 13:1736-45.

Winther A, Ahmed AL, Furberg AS, Grimnes G, Jorde R, Nilsen OA, et al. (2015). Leisure time computer use and adolescent bone health—findings from the Tromsø Study, *Fit Futures: a cross-sectional study*. *BMJ Open* 5:e006665.

Wright J. (2009). Biopower, Biopedagogies, and the Obesity Epidemic. In Wright J, Harwood V. (ed.). *Biopolitics and the ‘Obesity Epidemic’*. Routledge, New York and London.

World Health Organization. (2004). BMI Classification. Available at: <http://www.who.int/features/factfiles/obesity/facts/en/> Access date: 15.09.15

World Health Organization. (2016). Obesity and overweight. Available at: <http://www.who.int/mediacentre/factsheets/fs311/en> Access date: 15.01.17

World Health Organization. (2017). Definition of health. Available at: <http://www.who.int/suggestions/faq/en/> Access date: 17.03.17



## Intervjuguide, ungdom og overvekt.

### Problemstilling:

*I hvor stor grad er overvektige unge jenter/kvinner motiverte for vektnedgang, og hva er det som kan være viktige motivasjonsfaktorer for vektnedgang? Hvilke livsstilsfaktorer og miljøfaktorer er det som kan spille inn når det gjelder vektendringer i denne gruppa og hvordan kan utvidet kunnskap om dette bidra til forebygging og behandling av overvekt?*

---

<b>Tema</b>	<b>Spørsmål</b>
Opplevelse av overvekt	Snakke litt rundt temaet overvekt: Hva er overvekt (definisjon)? Oppmerksomhet rundt temaet: Blir det for mye eller for lite synes du? Har du andre tanker om temaet overvekt?
Motivasjon for vektnedgang	Er det viktig og hvis ja, hvor viktig er det for deg å gå ned i vekt? Hvorfor? Hvis nei, hvorfor er det ikke viktig?
Kosthold	Hvilke tanker har du om hva som er et sunt kosthold? Hvordan vil du beskrive ditt kosthold, som sunt eller usunt ? Spiser du til faste måltider? Spiser du et ordentlig måltid ila skoledagen, og er det i så fall matpakke, kantine eller kioskmatt? Tror du at ungdom generelt er opptatt av kosthold? Hva kan gjøres for å bedre kostholdet i ungdomsgruppa?
Fysisk aktivitet	Hvilke vaner og holdninger har du selv når det gjelder fysisk aktivitet? Hvilket inntrykk har du av ungdomsgruppas vaner og holdninger til fysisk aktivitet generelt? Bør ungdom være mer eller mindre aktive? Hva mener du eventuelt skal til for at ungdom skal være mer fysisk aktive?
Søvn og døgnrytme	Hvor mange timer sover du vanligvis i løpet av natta? Sovner du ofte ila dagen? Er søvmangel eller mangel på døgnrytme et problem for deg? Tror du at det er det for andre på din alder? Hvis ja, hva tror du at det skyldes? Tror du tilgangen til elektroniske media

---

---

24/7 betyr noe for søvn og døgnrytme for deg selv og for ungdom generelt?

Livsstil

Hva legger du i begrepet livsstil?  
Hvem eller hva påvirker deg når det gjelder valg av livsstil?  
Hvor viktig er påvirkning fra familien?  
Hvor viktig er påvirkning fra venner og omgangskrets?  
Har skolen påvirkningskraft?

Påvirkning fra media

Blir du påvirket av media når det gjelder:  
- kroppsideal?  
- valg av livsstil?  
Tror du ungdom generelt blir påvirket av media når det gjelder disse forholdene?  
Hvilken rolle spiller facebook, twitter og blogger når det gjelder kroppsideal og livsstilsvalg?

Deltakelsen i Fit Futures

Har deltakelsen i denne helseundersøkelsen betydd noe for din holdning til eller tanker om helse og livsstil?

Stress og hverdagsmestring.

Er dette faktorer som er viktig for din livsstil? I så fall, på hvilken måte?  
Tror du dette er viktig for ungdom flest?

Avslutningsspørsmål.

Andre ting du vil si om temaet som vi ikke allerede har vært inne på?

---

## Variabelliste, FF2.

### DEG OG DIN FAMILIE

1) Er du:

- Jente  Gutt

### HELSE

14) Hvordan vurderer du din egen helse sånn i alminnelighet?

- Meget god  
 God  
 Verken god eller dårlig  
 Dårlig  
 Meget dårlig

### PUBERTET

Her har vi noen spørsmål om kroppslige forandringer som skjer gjennom ungdomstiden:

22) Har du fått menstruasjon?

- Ja  Nei

Hvor gammel var du da du fikk menstruasjon første gang?

23) År

Velg alternativ

24) Måneder

---

25) Hvis du ser bort fra svangerskap, har du noen gang vært blødningsfri i minst 6 måneder?

- Ja  
 Nei

• (

- Hvis Hvis du ser bort fra svangerskap, har du noen gang vært blødningsfri i minst 6 måneder? *er lik*  
Ja

• )

**26) Hvor mange ganger har du vært blødningsfri i mer enn 6 måneder?**

Velg alternativ

**27) Hvordan er blødningene dine nå?**

- Jeg har regelmessige blødninger
- Jeg har uregelmessige blødninger
- Jeg har ikke hatt blødninger det siste året

## **PUBERTET**

• (

- Hvis Er du: *er lik* Gutt

• )

**28) Når man er tenåring, er det perioder da man vokser raskt. Har du merket at kroppen din har vokst fort (blitt høyere)?**

- Nei, den har ikke begynt å vokse
- Ja, den har såvidt begynt å vokse
- Ja, den har helt tydelig begynt å vokse
- Ja, det virker som om jeg er ferdig med å vokse raskt

**29) Og hva med hår på kroppen (under armene og i skrittet)? Vil du si at håret på kroppen din har:**

- Ikke begynt å vokse enda
- Såvidt begynt å vokse
- Helt tydelig begynt å vokse
- Det virker som om håret på kroppen er utvokst

• (

- Hvis Er du: *er lik* Gutt

• )

• og (

- Hvis Og hva med hår på kroppen (under armene og i skrittet)? Vil du si at håret på kroppen din har: *er lik* Helt tydelig begynt å vokse
- eller
- Hvis Og hva med hår på kroppen (under armene og i skrittet)? Vil du si at håret på kroppen din har: *er lik* Såvidt begynt å vokse
- eller
- Hvis Og hva med hår på kroppen (under armene og i skrittet)? Vil du si at håret på kroppen din har: *er lik* Det virker som om håret på kroppen er utvokst

• )

30) Hvor gammel var du da du begynte å få hår i skrittet (kjønnshår)?

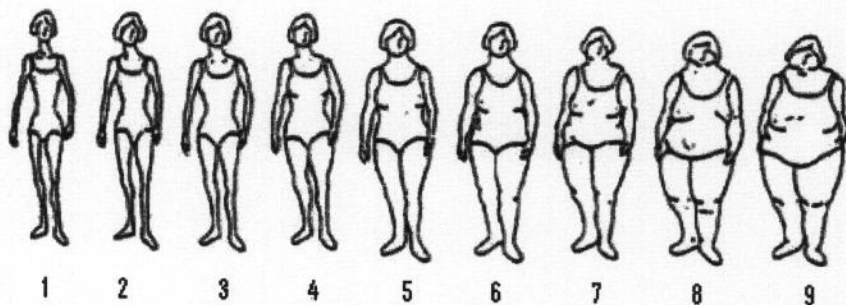
Velg alternativ

31) Har du begynt å komme i stemmeskifte?

- Nei, har ikke begynt ennå
- Ja, har såvidt begynt
- Ja, har helt tydelig begynt
- Det virker som om stemmeskifte er ferdig

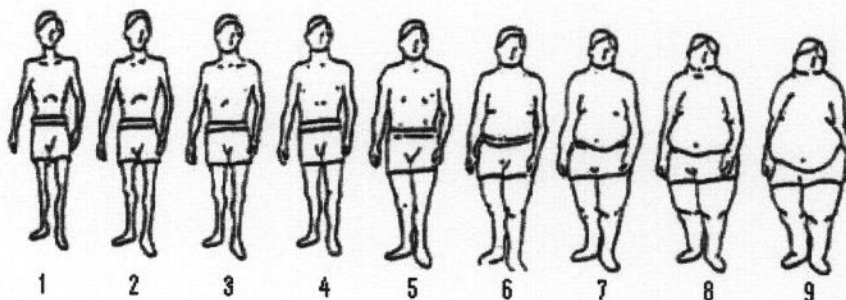
32) Har du begynt å få bart eller skjegg?

- Nei, har ikke begynt ennå
- Ja, har såvidt begynt
- Ja, har helt tydelig begynt
- ja, har fått en god del skjeggvekst



33) Hvilken av disse kroppsfasongene likner mest på din kropp slik du er idag?

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9



34) Hvilken av disse kroppsfasongene likner mest på din kropp slik du er idag?

- 1    2    3    4    5    6    7    8    9

**35) Gjør du for tiden noe forsøk på å endre kroppsvekten din?**

- Nei  
 Ja, jeg forsøker å legge på meg  
 Ja, jeg forsøker å slanke meg

Følgende kriterier må være oppfylt for at spørsmålet skal vises for respondenten:

- (
  - Hvis Gjør du for tiden noe forsøk på å endre kroppsvekten din? er lik Ja, jeg forsøker å slanke meg
  - eller
  - Hvis Gjør du for tiden noe forsøk på å endre kroppsvekten din? er lik Ja, jeg forsøker å legge på meg
- )

**36) Hvilken vekt vil du være fornøyd med (din trivselsvekt i hele kilo)?**

## **FYSISK AKTIVITET**

**48) Hvilken beskrivelse passer best når det gjelder din fysiske aktivitet på fritiden det siste året?**

- Sitter ved PC/TV, leser eller annen stillesittende aktivitet.
- Går, sykler eller beveger deg på annen måte minst 4 timer i uken (her skal du også regne med tur til/fra skolen, shopping, søndagsturer med mer).
- Driver med idrett/trening, tyngre utearbeid, snømåking eller liknende minst 4 timer i uka.
- Trener hardt eller driver konkurranseidrett regelmessig og flere ganger i uka

**53) Driver du med idrett eller fysisk aktivitet (f.eks. fotball, dans, løping, sykling, skateboard) utenom skoletid?**

- Ja    Nei

**54) Hvor mange dager i uken driver du med idrett/fysisk aktivitet utenom skoletid?**

- Sjeldnere enn 1 dag i uka  
 1 dag i uka  
 2-3 dager i uka  
 4-6 dager i uka

## Forespørsel om deltakelse i forskningsprosjektet

### *”Livsstil og overvektsproblematikk i en ungdomsgruppe”*

#### **Bakgrunn og hensikt**

Dette er et spørsmål til deg om å delta i en forskningsstudie som omhandler overvektsproblematikk i ungdomsgruppa. Formålet med studien er å få mer kunnskap om motivasjon for vektnedgang og generelle holdninger og miljøfaktorer knyttet til overvekt hos ungdom. Forhåpentligvis kan resultater fra studien bidra til forebygging og behandling av overvekt hos ungdom.

Overvekt er forbundet med en viss helserisiko og regnes som en av vår tids største helseutfordringer. Det har til nå vært vanskelig å finne effektive behandlings og forebyggingsmetoder for varig vektnedgang. Det har vært mye fokus på livsstilsendringer men også miljøfaktorer er relevante i denne sammenheng. Vi har lite kunnskap om ungdommers oppfatning av overvektsutviklingen og hva som eventuelt kan være nyttige tiltak for å snu utviklingen.

Du har vært deltaker i helseundersøkelsen Fit Futures, og vi ønsker å intervju deg fordi du ved undersøkelsen hadde en BMI på mellom 26 og 33. Studien er en oppfølgingsundersøkelse av Fit Futures som igjen er et samarbeidsprosjekt mellom Universitetet i Tromsø, Tromsøundersøkelsen og Universitetssykehuset Nord-Norge. Ansvarlige for studien er sykepleier/master i helsefag Anne-Sofie Sand (UNN) og professor Nina Emaus (UiT).

#### **Hva innebærer studien?**

Deltakelse i studien innebærer deltakelse i gruppeintervju og/eller individuelt intervju. Du kan selv velge om du vil delta i bare gruppeintervju, bare individuelt intervju eller begge deler. Gruppeintervjuet vil ha ca 90 minutters varighet. Det vil være 5-8 deltakere i hver gruppe og to forskere vil være til stede. Forskerne kommer til å stille noen spørsmål angående det å være overvektig og faktorer knyttet til overvekt og sette i gang en diskusjon blant deltakerne. Du er ikke nødt til å svare på noen spørsmål, men vi oppfordrer deg til å delta i diskusjonen når du har noe på hjertet og ønsker å bidra. Det individuelle intervjuet vil være av ca 1 times varighet. Under dette intervjuet vil det bare være deg og en forsker til stede. Intervjuene vil arte seg som samtaler eller diskusjoner om temaet. Alle intervjuene vil bli tatt opp på lydbånd. Intervjuene vil finne sted i løpet av 2013 etter nærmere avtale.

#### **Mulige fordeler og ulemper**

Det vil ikke være noen forventede fordeler eller ulemper knyttet til å delta i studien, men det er viktig at du er komfortabel med å diskutere den aktuelle problematikken med andre.

#### **Hva skjer med prøvene og informasjonen om deg?**

Informasjonen som registreres om deg skal kun brukes slik som beskrevet i hensikten med studien. Intervjuene vil bli tatt opp på lydbånd. Data fra intervjuene vil bli analysert og bearbeidet og deretter brukt i artikler fra studien. Etter at studien er ferdig og resultatet er publisert vil opptakene bli slettet. Alle opplysninger vil bli behandlet uten navn og fødselsnummer eller andre direkte gjenkjennende opplysninger. En kode knytter deg til dine opplysninger og prøver gjennom en navneliste. Det er kun autorisert personell som har adgang til navnelisten og som kan finne tilbake til deg. Etter at studien er ferdig vil navnelisten bli destruert, 5 år etter at studien er avsluttet.

Det vil ikke være mulig å identifisere deg i resultatene av studien når disse publiseres.

Det er frivillig å delta i studien og dersom du ikke ønsker å delta kan du bare se bort fra denne henvendelsen. Du kan når som helst og uten å oppgi noen grunn trekke ditt samtykke til å delta i studien. Dersom du ønsker å delta, undertegner du den ene samtykkeerklæringen på siste side og sender tilbake til oss i vedlagte svarkonvolutt. Den andre blir din egen kopi. Dersom du senere ønsker å trekke deg eller har spørsmål om studien, kan du kontakte Anne-Sofie Sand på tlf nr 971 61 968 eller Nina Emaus på tlf nr 941 37 763

**Ytterligere informasjon om studien finnes i kapittel A – utdypende forklaring av hva studien innebærer.**

**Ytterligere informasjon om biobank, personvern og forsikring finnes i kapittel B – Personvern, biobank, økonomi og forsikring.**

**Samtykkeerklæring følger etter kapittel B.**



## **Kapittel A- utdypende forklaring av hva studien innebærer**

- **Kriterier for å delta:**

Du må ha deltatt i ungdomsundersøkelsen Fit Futures, være kvinne og ha en BMI på mellom 26 og 33. Du må også være bekvem med å diskutere overvektsproblematikk med andre.

- **Bakgrunnsinformasjon om studien:**

Det er en stadig økende forekomst av overvekt i store deler av verden, og det har til nå vært vanskelig å finne gode metoder for forebygging og behandling. Både livsstil og miljøfaktorer er sentrale faktorer i dette arbeidet. Ungdomsgruppen er spesiell i denne sammenheng fordi de er i en fase der det har skjedd og skjer endringer både kroppslig og sosialt. Vi har lite kunnskap om hva ungdom selv mener om disse forholdene og ønsker å utvide vår kunnskap om dette gjennom en intervjuundersøkelse.

- **Tidsskjema – hva skjer og når skjer det?**

Det inviteres til et gruppeintervju, og noen vil bli spurt om å delta i et individuelt intervju i tillegg. Dette vil skje i løpet av 2013.

- **Eventuell kompensasjon til og dekning av utgifter for deltakere:** Det vil bli gitt et gavekort på kr 200 for dekning av reiseutgifter for hvert intervju.

## **Kapittel B - Personvern, biobank, økonomi og forsikring**

### **Personvern**

Opplysninger som registreres om deg skal kun brukes slik som beskrevet i hensikten med studien. Intervjuene vil bli tatt opp på lydbånd. Etter at studien er ferdig og resultatet er publisert vil opptakene bli slettet. Alle opplysninger vil bli behandlet uten navn og fødselsnummer eller andre direkte gjenkjennende opplysninger. En kode knytter deg til dine opplysninger og prøver gjennom en navneliste. Det er kun autorisert personell som har adgang til navnelisten og som kan finne tilbake til deg. Etter at studien er ferdig vil navnelisten bli destruert, senest 5 år etter at studien er avsluttet. Det vil noteres i din pasientjournal at du har deltatt i studien. Ingen annen informasjon fra studien vil bli notert i journalen.

Universitetssykehuset Nord-Norge ved administrerende direktør er databehandlingsansvarlig.

### **Rett til innsyn og sletting av opplysninger om deg og sletting av prøver**

Hvis du sier ja til å delta i studien, har du rett til å få innsyn i hvilke opplysninger som er registrert om deg. Du har videre rett til å få korrigert eventuelle feil i de opplysningene vi har registrert. Dersom du trekker deg fra studien, kan du kreve å få slettet innsamlede prøver og opplysninger, med mindre opplysningene allerede er inngått i analyser eller brukt i vitenskapelige publikasjoner.

Studien er finansiert gjennom forskningsmidler fra Helse Nord.

### **Forsikring**

**Intervjuene vil bli gjennomført ved UNN, og vanlig Pasientskaderstatning vil gjelde.**

### **Informasjon om utfallet av studien**

De som ønsker det kan få informasjon om resultater fra studien etter at den er ferdig.

# Samtykke til deltakelse i studien

Jeg er villig til å delta i studien

---

(Signert av prosjektdeltaker, dato)

Jeg bekrefter å ha gitt informasjon om studien

---

(Signert, rolle i studien, dato)

## Forespørsel om deltakelse i forskningsprosjektet

### *”Livsstil og overvektsproblematikk i en ungdomsgruppe”*

#### **Bakgrunn og hensikt**

Dette er et spørsmål til deg om å delta i en forskningsstudie som omhandler overvektsproblematikk i ungdomsgruppa. Formålet med studien er å få mer kunnskap om motivasjon for vektnedgang og generelle holdninger og miljøfaktorer knyttet til overvekt hos ungdom. Forhåpentligvis kan resultater fra studien bidra til forebygging og behandling av overvekt hos ungdom.

Overvekt er forbundet med en viss helserisiko og regnes som en av vår tids største helseutfordringer. Det har til nå vært vanskelig å finne effektive behandlings og forebyggingsmetoder for varig vektnedgang. Det har vært mye fokus på livsstilsendringer men også miljøfaktorer er relevante i denne sammenheng. Vi har lite kunnskap om ungdommers oppfatning av overvektsutviklingen og hva som eventuelt kan være nyttige tiltak for å snu utviklingen.

Du har vært deltaker i helseundersøkelsen Fit Futures, og vi ønsker å intervju deg fordi du ved undersøkelsen hadde en BMI på mellom 18,5 og 24,9, altså normalvektig. Vi planlegger å intervju både normalvektige og overvektige. Studien er en oppfølgingsundersøkelse av Fit Futures som igjen er et samarbeidsprosjekt mellom Universitetet i Tromsø, Tromsøundersøkelsen og Universitetssykehuset Nord-Norge. Ansvarlige for studien er sykepleier/master i helsefag Anne-Sofie Sand (UNN) og professor Nina Emaus (UiT).

#### **Hva innebærer studien?**

Deltakelse i studien innebærer et gruppeintervju av 90 minutters varighet. Det vil være 5-8 deltakere i hver gruppe og to forskere vil være til stede. Forskerne kommer til å stille noen spørsmål angående faktorer knyttet til overvekt og livsstil og sette i gang en diskusjon blant deltakerne. Du er ikke nødt til å svare på noen spørsmål, men vi oppfordrer deg til å delta i diskusjonen når du har noe på hjertet og ønsker å bidra. Noen av deltakerne vil også senere bli innkalt til et individuelt intervju av ca 1 times varighet for å utdype det som kom fram under gruppeintervjuet. Under dette intervjuet vil det bare være deg og en forsker til stede. Intervjuene vil arte seg som samtaler eller diskusjoner om temaet. Alle intervjuene vil bli tatt opp på lydbånd. Intervjuene vil finne sted i løpet av vårsemesteret 2013 etter nærmere avtale.

#### **Mulige fordeler og ulemper**

Det vil ikke være noen forventede fordeler eller ulemper knyttet til å delta i studien, men det er viktig at du er komfortabel med å diskutere den aktuelle problematikken med andre.

#### **Hva skjer med prøvene og informasjonen om deg?**

Informasjonen som registreres om deg skal kun brukes slik som beskrevet i hensikten med studien. Intervjuene vil bli tatt opp på lydbånd. Data fra intervjuene vil bli analysert og bearbeidet og deretter brukt i artikler fra studien. Etter at studien er ferdig og resultatet er publisert vil opptakene bli slettet. Alle opplysninger vil bli behandlet uten navn og fødselsnummer eller andre direkte gjenkjenner opplysninger. En kode knytter deg til dine opplysninger og prøver gjennom en navneliste. Det er kun autorisert personell som har adgang til navnelisten og som kan finne tilbake til deg. Etter at studien er ferdig vil navnelisten bli destruert, 5 år etter at studien er avsluttet.

Det vil ikke være mulig å identifisere deg i resultatene av studien når disse publiseres.

Det er frivillig å delta i studien og dersom du ikke ønsker å delta kan du bare se bort fra denne henvendelsen. Du kan når som helst og uten å oppgi noen grunn trekke ditt samtykke til å delta i studien. Dersom du ønsker å delta, undertegner du den ene samtykkeerklæringen på siste side og sender tilbake til oss i vedlagte svarkonvolutt. Den andre blir din egen kopi. Dersom du senere ønsker å trekke deg eller har spørsmål om studien, kan du kontakte Anne-Sofie Sand på tlf nr 971 61 968 eller Nina Emaus på tlf nr 941 37 763

**Ytterligere informasjon om studien finnes i kapittel A – utdypende forklaring av hva studien innebærer.**

**Ytterligere informasjon om biobank, personvern og forsikring finnes i kapittel B – Personvern, biobank, økonomi og forsikring.**

**Samtykkeerklæring følger etter kapittel B.**

## **Kapittel A- utdypende forklaring av hva studien innebærer**

- Kriterier for å delta:

Du må ha deltatt i ungdomsundersøkelsen Fit Futures, være kvinne og ha en BMI på mellom 18,5 og 24,9. Du må også være bekvem med å diskutere overvektsproblematikk med andre.

- Bakgrunnsinformasjon om studien:

Det er en stadig økende forekomst av overvekt i store deler av verden, og det har til nå vært vanskelig å finne gode metoder for forebygging og behandling. Både livsstil og miljøfaktorer er sentrale faktorer i dette arbeidet. Ungdomsgruppen er spesiell i denne sammenheng fordi de er i en fase der det har skjedd og skjer endringer både kroppslig og sosialt. Vi har lite kunnskap om hva ungdom selv mener om disse forholdene og ønsker å utvide vår kunnskap om dette gjennom en intervjuundersøkelse.

- Tidsskjema – hva skjer og når skjer det?

Det inviteres til et gruppeintervju, og noen vil bli spurt om å delta i et individuelt intervju i tillegg. Dette vil skje i løpet av 2013.

- Eventuell kompensasjon til og dekning av utgifter for deltakere: Det vil bli gitt et gavekort på kr 200 for dekning av reiseutgifter for hvert intervju.

## **Kapittel B - Personvern, biobank, økonomi og forsikring**

### **Personvern**

Opplysninger som registreres om deg skal kun brukes slik som beskrevet i hensikten med studien. Intervjuene vil bli tatt opp på lydbånd. Etter at studien er ferdig og resultatet er publisert vil opptakene bli slettet. Alle opplysninger vil bli behandlet uten navn og fødselsnummer eller andre direkte gjenkjennende opplysninger. En kode knytter deg til dine opplysninger og prøver gjennom en navneliste. Det er kun autorisert personell som har adgang til navnelisten og som kan finne tilbake til deg. Etter at studien er ferdig vil navnelisten bli destruert, senest 5 år etter at studien er avsluttet. Det vil noteres i din pasientjournal at du har deltatt i studien. Ingen annen informasjon fra studien vil bli notert i journalen.

Universitetssykehuset Nord-Norge ved administrerende direktør er databehandlingsansvarlig.

### **Rett til innsyn og sletting av opplysninger om deg og sletting av prøver**

Hvis du sier ja til å delta i studien, har du rett til å få innsyn i hvilke opplysninger som er registrert om deg. Du har videre rett til å få korrigert eventuelle feil i de opplysningene vi har registrert. Dersom du trekker deg fra studien, kan du kreve å få slettet innsamlede prøver og opplysninger, med mindre opplysningene allerede er inngått i analyser eller brukt i vitenskapelige publikasjoner.

Studien er finansiert gjennom forskningsmidler fra Helse Nord.

### **Forsikring**

Intervjuene vil bli gjennomført ved UNN, og vanlig Pasientskaderstatning vil gjelde.

### **Informasjon om utfallet av studien**

De som ønsker det kan få informasjon om resultater fra studien etter at den er ferdig.

# Samtykke til deltakelse i studien

Jeg er villig til å delta i studien

---

(Signert av prosjektdeltaker, dato)

Jeg bekrefter å ha gitt informasjon om studien

---

(Signert, rolle i studien, dato)

# STØY



## FRIVILLIG DELTAKELSE

Det er frivillig å delta i studien. Du kan når som helst og uten å oppgi noen grunn trekke ditt samtykke til å delta i undersøkelsen, og dette vil ikke få noen konsekvenser for deg. Dersom du senere ønsker å trekke deg eller har spørsmål til studien, kan du kontakte Tromsøundersøkelsen, Institutt for samfunnsmedisin, Det helsevitenskapelige fakultet, Universitetet i Tromsø, 9037 Tromsø, telefon 77 64 48 16, e-post: [tromsous@uit.no](mailto:tromsous@uit.no).

## HVA SKJER MED DE BIOLOGISKE PRØVENE?

Med blodprøven gjøres analyser av bl.a. hormoner, fettstoffer, blodsukker, vitaminer, miljøgifter og markører på betennelser og sykdommer. Det blir også hentet ut arvestoff (DNA og RNA) for genetiske analyser. Bakterierprøvene brukes til å måle forekomst av gule stafylokokker og meningokokker. Prøvene lagres i Forskningsbiobanken for Tromsøundersøkelsen ved Universitetet i Tromsø. Hvis du sier ja til å delta, gir du også samtykke til at de biologiske prøvene og analyseresultatene inngår i biobanken.

## PERSONVERN OG SIKKERHET

Alle medarbeidere som jobber med undersøkelsen, har taushetsplikt. Opplysningene som samles inn, vil bare bli brukt til godkjente forskningsformål, som beskrevet over.

Når det forskes på data fra undersøkelsen, gjøres dette uten navn og fødselsnummer eller andre direkte gjenkjennende opplysninger. En kode knytter deg til dine opplysninger og prøver. Koden oppbevares separat ved Universitetet i Tromsø, og kun noen få autoriserte personer har tilgang. Den enkelte forsker får ikke tilgang til opplysninger som gjør det mulig å identifisere enkeltpersoner. Det vil ikke være mulig å identifisere deg i resultatene av studien når disse publiseres.

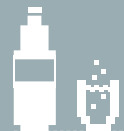
I noen tilfeller kan det være aktuelt å gjøre analyser av blodprøver eller genetiske analyser ved forskningsinstitusjoner i utlandet. Hvis dette gjøres, vil våre utenlandske samarbeidspartnere ikke få opplysninger som kan knytte prøvene opp mot deg som person.

Tromsøundersøkelsen gjennomfører Fit Futures i samarbeid med Universitetssykehuset Nord-Norge og Nasjonalt folkehelseinstitutt. Data som samles inn på sykehuset, overføres til Universitetet i Tromsø når datainnsamlingen er avsluttet. Ingen av opplysningene som framkommer i undersøkelsen, lagres i journalsystemet på sykehuset. Databehandlingsansvarlig er Universitetet i Tromsø. Tromsøundersøkelsen administrerer utlevering av data til forskningsprosjekter. Hvem som er ansvarlig for forskningsprosjektene, finner du her ([www.tromsundersokelsen.no](http://www.tromsundersokelsen.no)). Fit Futures er godkjent av Datatilsynet og Regional komité for medisinsk og helsefaglig forskningsetikk, Nord-Norge. Deltakere er forsikret gjennom Norsk Pasientskadeerstatningsordning.

## RETT TIL INNSYN, SLETNING AV PRØVER OG OPPLYSNINGER

Hvis du sier ja til å delta i studien, har du rett til å få innsyn i hvilke opplysninger som er registrert om deg. Du har også rett til å få korrigert eventuelle feil i de opplysningene vi har registrert. Dersom du trekker deg fra studien, kan du kreve å få slettet innsamlede prøver og opplysninger, med mindre opplysningene allerede er inkludert i analyser eller brukt i vitenskapelige publikasjoner.

# TANNHELSE



## BRUS & JUICE

## VIL DU DELTA?

Hvis du vil delta, melder du deg på [questback-link](#) sendt til din epost eller tar kontakt med prosjektadministratoren Annelene Moberg på 93 00 39 25 eller Siv Normann Gundersen på 93 00 39 54. Når du kommer til Forskningsposten på UNN, signerer du samtykkeskjema.

## ANSVARLIGE FOR GJENNOMFØRING AV FIT FUTURES

Fit Futures ledes av en styringsgruppe, og følgende forskere er ansvarlige for gjennomføringen:

### Anne-Sofie Furberg

prosjektleder, lege, Universitetssykehuset Nord-Norge og Universitetet i Tromsø  
e-post: [anne-sofie.furberg@uit.no](mailto:anne-sofie.furberg@uit.no), telefon 0 77 66

### Christopher Sivert Nielsen

psykolog, Nasjonalt folkehelseinstitutt  
e-post: [Christopher.Sivert.Nielsen@fhi.no](mailto:Christopher.Sivert.Nielsen@fhi.no), telefon 21 07 82 77

### Guri Grimnes

lege, Universitetssykehuset Nord-Norge  
e-post: [guri.grimnes@unn.no](mailto:guri.grimnes@unn.no), telefon 0 77 66

### Nina Emaus

professor i helsefag, Universitetet i Tromsø  
e-post: [nina.emaus@uit.no](mailto:nina.emaus@uit.no), telefon 77 66 07 62

## SPØRSMÅL?

Dersom du har spørsmål om undersøkelsen, kontakt:

- Prosjektadministratoren **Annelene Moberg** på telefon 93 00 39 25
- Prosjektadministratoren **Siv Normann Gundersen** på telefon 93 00 39 54
- **Forskningsposten UNN** på telefon 77 62 69 09

[WWW.FITFUTURES.NO](http://WWW.FITFUTURES.NO)



2012  
2013



# FitFutures

EN DEL AV TROMSØUNDERSØKELSEN

# DIN HELSE DIN FREMTID

INVITASJON TIL Å DELTA I HELSEUNDERSØKELSE BLANT UNGDOM

## AKTIVITET

## ENERGI



## MILJØGIFTER

### HVA ER FIT FUTURES?

Fit Futures er et forskningsprosjekt der vi følger helse og livsstil fra ungdom til voksen alder. Studien begynte med undersøkelser av elever på VG 1 i Tromsø og Balsfjord skoleåret 2010-2011.

### HVEM KAN DELTA?

Alle ungdommer på VG3 i Tromsø og Balsfjord blir invitert til å delta. Dette gjelder også om du er i yrkespraksis. Elever som var med i første runde av Fit Futures og siden har sluttet på skolen, er også invitert.

Vi ønsker både nye og tidligere deltakere velkommen!

### HVORFOR ER DETTE VIKTIG?

Voksnes helse undersøkes i mange studier, men man har mindre kunnskap om helse blant ungdom. Selv om få ungdommer har alvorlige sykdommer, legges mye av grunnlaget for fremtidig helse i ungdomsårene. Denne undersøkelsen kan bidra til at vi får økt kunnskap om hvordan man kan forebygge sykdom og om hvordan diagnoser kan stilles på et tidligere tidspunkt. Ved å gjenta undersøkelsen kan vi følge med hvordan helsen utvikler seg over tid.

### HVA FORSKES DET PÅ?

Hovedområdene det forskes på er:

- Smerte
- Eksem og kviser
- Beintetthet
- Astma og allergi
- Diabetes
- Infeksjoner
- Øresus
- Fysisk aktivitet og overvekt
- Medisinbruk
- D-vitamin
- Frafall fra skole
- Jernmangel
- Genmodifisert mat
- Miljøgifter
- Personlighet og helseatferd
- Tannhelse, syreskader og medfødte skader på tennene

Informasjonen fra undersøkelsen vil også bli brukt til forskning på de store folkehelseproblemene generelt, som hjerte-karsykdommer, lungesykdommer, kreft, nedsatt fruktbarhet og smerte. Det vil også bli forsket på arbeidsførhet i skole og yrke, knyttet til sykdom, helse og livsstil. En del av prosjektene vil studere samspillet mellom arv, miljø, sykdom og helse; til slike prosjekter vil det bli hentet ut genetisk arvestoff fra blodprøvene. I framtiden kan data bli brukt i forskningsprosjekter som i dag ikke er planlagt.

For alle slike nye prosjekter kreves det godkjenning av Regional komité for medisinsk og helsefaglig forskningsetikk. En oversikt over godkjente prosjekter finner du her: [www.tromsundersokelsen.no](http://www.tromsundersokelsen.no). Nettsiden holdes løpende oppdatert, og her kan du lese om våre forskningsresultater.

### SLIK FOREGÅR UNDERSØKELSEN

Undersøkelsen gjennomføres i skoletiden eller arbeidstiden og tar 2-3 timer. Du må regne med å være borte fra skolen eller praksis en halv dag. Skolene anser dette som gyldig fravær. Fravær fra lærebedriften må avklares med den enkelte arbeidsgiver, men erfaringen er at de fleste arbeidsgivere gir fri for å delta i denne typen undersøkelse.

Du blir undersøkt på Forskningsposten, Universitetssykehuset Nord-Norge, av erfarne forskningssykepleiere og tannpleiere. Undersøkelsen består av følgende deler:

- *Spørreskjema* der vi spør om livsstil, trivsel, sykdommer og helseplager gjennom livet, personlighet og familieforhold.
- *Intervju* der vi spør om hvilke medisiner du bruker, om du har tatt vaksine mot smittsom hjernehinnebetennelse, om du har noen sykdom i dag og litt om ditt sosiale nettverk. Jenter spørres også om menstruasjon og graviditet.
- *Generell helseundersøkelse* der vi måler høyde, vekt, livvidde og hoftevidde, blodtrykk og puls. Vi tar også blodprøve, spyttprøve og bakterieprøver. Bakterieprøvene tas fra nese, hals og hud med en fuktet vattpinne.
- *Kroppsscan* (DEXA) der vi måler beintetthet og forholdet mellom fett- og muskelvev. Dette skjer ved at du ligger rolig i ca. 10 minutter mens kroppen scannes.
- *Tannundersøkelse* der vi tar foto av tennene dine. Dersom du deltok i første runde av Fit Futures, vil vi også undersøke bittet ditt ved at du biter sammen med en tynn, bløt plate mellom tennene. Undersøkelsen av bittet er nødvendig for å sette sammen tannmodellene fra første runde av Fit Futures. Det vil ikke bli gjort en tannundersøkelse slik som du vanligvis får hos tannlege eller tannpleier.
- *Lungefunktionsundersøkelse* (Spirometri) der du skal puste ut så hardt du klarer gjennom et munnstykke. Mengden luft som blåses ut, er et mål på lungefunksjonen din. Etter å ha tatt undersøkelsen en gang, vil du få puste inn en dose av astmamedisinen Ventoline® som kan utvide luftveiene dine. Deretter gjentas lungefunktionsundersøkelsen en gang til, og vi måler om lungefunksjonen din blir bedre med medisin eller ikke.

Etter undersøkelsene vil du få utlevert en liten aktivitetsmåler som er festet i et smalt strikkbelte til å ha under klærne. Denne måler hvor mye du beveger deg i løpet av døgnet. Etter en ukes bruk, leverer du aktivitetsmåleren til prosjektadministrator på skolen.

Noen deltakere vil bli spurt om å undersøkes en gang til. Det vil da være aktuelt å gjenta noen av undersøkelsene og gjøre enkelte utvidede undersøkelser.

### MULIGE ULEMPER OG FORDELER

Deltakelse innebærer at du må bruke noe tid. Deler av undersøkelsen kan også innebære ubehag, dette gjelder særlig blodprøven. Dersom du vet at du har problemer med å ta blodprøve, kan du kontakte Forskningsposten på telefon 77 62 69 09 eller snakke med sykepleier når du kommer til undersøkelsen, for å finne en løsning på dette.

Dersom resultatet av prøvene dine viser at det er nødvendig med oppfølging av tannlege, lege eller henvisning til spesialist, vil du bli orientert om det. Ved behov for henvisning til spesialist, vil vi sørge for henvisning og tilbud om oppfølging ved sykehuset.

Alle deltakere får et gavekort til en verdi av kr. 200 som kan brukes i de fleste butikker i Tromsø. Transport til og fra UNN organiseres av undersøkelsen.

### TIPS OG RÅD FØR UNDERSØKELSEN

#### Har du fjernet halsmandlene?

Dersom du vet eller tror at du har fjernet halsmandlene, spør gjerne de hjemme om dette. Hvor gammel du var og hvorfor det skjedde. Mange får fjernet halsmandlene i småbarnsalderen, og da er det vanskelig å vite dette sikkert selv.

#### Bruker du astmamedisiner?

Før undersøkelsen skal du ikke bruke noen astmamedisiner som utvider luftveiene.

- Dersom du bruker Singulair, slutter du med denne 3 dager (72 timer) før undersøkelsen.
- Dersom du bruker Serevent, Oxis, Onbrez, Seretide eller Symbicort, slutter du med denne 2 dager (48 timer) før undersøkelsen.
- Dersom du bruker Ventoline, Bricanyl, Airomir, Salbutamol eller Buventol, slutter du kvelden før undersøkelsen (12 timer før).
- Det er ikke nødvendig å slutte med Pulmicort, Budesonid, Flutide, Becotide, AeroBec, Beclomet, Giona, Asmanex eller Alvesco.
- Dersom du blir verre av din astma på grunn av medisinpause, kan du likevel bruke luftveisåpnende medisiner (Ventoline, Bricanyl, Airomir, Salbutamol eller Buventol).

#### Bruker du andre medisiner?

Skriv ned navn på medisiner du bruker fast og ta med på undersøkelsesdagen. Har du brukt antibiotika siste 3 måneder, noter ned navnet på denne også.

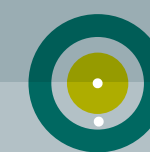
### INFORMASJON FRA ANDRE KILDER OG BRUK AV DATA I FRAMTIDEN

Opplysninger og prøver som du gir, blir oppbevart på ubestemt tid til bruk i forskning omkring helse og sykdom som omtalt i denne brosjyren. Det kan også hende at vi tar kontakt med deg igjen for å spørre om du vil være med på en ny undersøkelse. For spesielle forskningsprosjekter kan det være aktuelt å sammenstille informasjon fra Fit Futures med nasjonale helseregistre som Reseptregisteret, Medisinsk fødselsregister, Kreftregisteret, Norsk pasientregister, Dødsårsaksregisteret og andre nasjonale registre over sykdommer som det forskes på i Tromsøundersøkelsen. I tillegg kan det være aktuelt å innhente helseopplysninger fra spesialist- og primærhelsetjenesten og Den offentlige tannhelsetjenesten, for eksempel informasjon om beinbrudd, høyde- og vektdata fra helsestasjon, og røntgenbilder av tenner, til bruk i forskning på sykdommer og helseproblemer som det forskes på i Tromsøundersøkelsen. Det kan også bli innhentet data fra registre i Statistisk sentralbyrå slik som miljø, befolkning, utdanning, inntekt, offentlige ytelser, arbeidsdeltakelse og andre forhold som kan ha betydning for helsa. For å undersøke om sykdommer går i arv, kan opplysninger om deg sammenstilles med opplysninger om dine slektninger, dersom disse har deltatt i deler av Tromsøundersøkelsen. Dette blir gjort ved å innhente opplysninger om slektskap fra Familieregisteret. Fra skolen vil vi innhente dine opplysninger om studieprogram, klasse, kjønn, antall fraværsdager, om du fullfører skoleåret og om karakterer i fagene norsk, matematikk og engelsk.

Sammenstillinger av informasjon krever noen ganger nytt samtykke og/eller annen type godkjenning slik som dispensasjon fra taushetsplikten eller godkjenning av offentlige instanser, for eksempel Regional komité for medisinsk og helsefaglig forskningsetikk, Datatilsynet eller NAV.



## ASTMA OG ALLERGI





## VIL DU DELTA?

---

### Samtykke til å delta i studien Fit Futures 2

Jeg er villig til å delta i studien

---

(DITT FULLE NAVN I BLOKKBOKSTAVER)

Sted \_\_\_\_\_

Dato \_\_\_\_\_

---

(DIN SIGNATUR)