



INVESTIGATING LIFE- STYLE AND WEIGHT IN EQUESTRIAN RIDERS

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Summary

The objective of this study is to gain a better understanding of rider weight and the possible relationship regarding lifestyle choices. Firstly equestrian riders were questioned by the use of an questionnaire, provided online. Secondly a case study among five riders was carried out by the use of a three day nutritional diary.

The results of the questionnaire, which are based on the answers of 443 respondents, show that the majority of the respondents is female (99%), has an age between 18-31 (69%), does not smoke (86%) or use any drugs (93%) and does not have any children (90%).

Excessive weight and/or obesity was found in 23% of the respondents. In relation to their overall physical activity riders who cycle daily tend ($p=.000$) to have a lower BMI level (21.825 ± 3.6700) compared to riders who do not cycle daily (23.474 ± 4.8035). In addition the number of daily snacks ($p=.003$, $r = -.228$) and daily main meals ($p=.019$, $r = -.112$) can be negatively correlated with BMI level. A higher amount of both daily snacks and main meals are related to a lower BMI in riders. Also the quality of sleep can be related to BMI level in riders ($p=.012$). Riders who scored “very good” tend to have a lower BMI (21.074 ± 2.6659) compared to those who scored “adequate” (23.920 ± 4.0236) or “medium” (24.349 ± 8.8214).

Furthermore, the analysis of the nutritional diaries indicates that riders often consume an excessive amount of carbohydrates in relation to their daily calorie intake, the overall nutritional intake among riders is too low and the nutritional pattern has an overall shortage in fat and protein.

In conclusion, the overall lifestyle of riders can be a crucial factor concerning their excessive weight and/or obesity. This research showed that the overall unbalanced nutritional intake, lack of daily exercise and quality of sleep could be causing the excessive weight and/or obesity among riders.

To fight excessive weight and improve the overall health, it is advisable to consume less processed high-energy foods, improve the balance of the overall diet, resolve the overall lack of nutritional intake and gain more knowledge about the appropriate nutritional intake by attending lectures or by seeing a personal trainer. Furthermore the overall rider fitness needs to be considered as an influencing factor and improved where necessary. By informing and advising riders about the quality and importance of their nutritional intake, FitBewust is able to reach its new target market. In addition FitBewust can help to accomplish overall better rider fitness by adapting current – or developing a riders specific physical training.

1. Introduction

Nowadays worldwide studies indicate that people from all over the world are becoming more and more obese. Different studies, (Vissscher, et al., 2002; Gast, et al., 2007), show that the prevalence of excessive weight and obesity is steadily increasing. Within the Netherlands, according to Nationaal Kompas Volksgezondheid (Nationaal Kompas Volksgezondheid, 2012), 48% of the population in 2011 were overweight and 11% were obese, which is, despite of its increasing factor, relatively low compared with other European countries and the USA. (International Obesity Task Force Prevalence Data, 2012) This worldwide struggle with obesity can, e.g., be dedicated to several aspects of the modern life we are living.

Over the past few decades, a host of new technologies have been replacing our actively spend free time. Sedentary hours have been increased by the introduction of computers, the internet and other devices that make it possible to reach other people, and be reachable, anywhere and anytime.

Due to this modern and busy lifestyle, a lack of time to exercise, cook and eat healthy can be considered as a risk factor for obesity. Skipping breakfast seems to be highly underestimated as well as the low frequency of daily eating. Also other factors, that often appear in this current lifestyle, like stress, insomnia and depression, can have highly consequences concerning our overall health and are found to cause a higher risk at obesity.

Obesity is a chronic disease that can be associated with several health issues like e.g. hypertension, coronary heart disease and an increased prevalence of heart failure. An indication that is often used to see whether people do or do not suffer from excessive weight and/or obesity is the Body Mass Index (BMI). Where a BMI of ≥ 25 indicates excessive weight and a BMI ≥ 30 indicates obesity.

If we want to avoid and cure obesity, fundamental changes in dietary behaviour as well as physical exercise are very important. Unfortunately the physical exercise required to burn off calories from fast-food and others unhealthy substances is very high, therefore other aspects influencing the overall weight can use some changing. Especially changing the diet, as people are nowadays commonly unaware of the actual available nutrient in their food, is very important. By switching from high-energy density food (e.g. fast-food) to food with a low-energy density (vegetables, fruit etc.) it is highly presumable to lose weight. This weight loss does not only improve the respiratory function and reduces risks of cancer, it also improves the mental wellbeing and quality of life. (BMJ, 2006)

Despite of the fact that equestrian sports can be seen as sport where skills like flexibility, balance, coordination and a good physical condition is required, several studies show that at least 20% of all riders has to deal with excessive weight and/or obesity. The actual cause of this relatively high number remains uncertain.

This research is conducted to create an overall view concerning the cause, consequences and prevention of excessive weight and/or obesity among riders. With the help of this overall view the expanding possibilities concerning FitBewust Personal Coaching will be clear and enable FitBewust to understand and serve its potential new target market.

Problem Definition

Regardless of the required physiological condition during horse riding, at least 20% of the horse riders has to deal with excessive weight and therefore increased health and incident risks. (VEP, 2009) The cause of the rider's excessive weight is still uncertain and can be influenced by different factors like lifestyle, diet or maybe the fact that riders do not see themselves but their horses as the athletes that need to be fit.

Research Objective

The objective of this research is to gain a better understanding of rider weight and the possible relationship with lifestyle choices. By investigating the overall lifestyle factors that could possibly be influencing or causing the excessive weight and/or obesity among riders, an overall view can be provided.

Research Questions

Main Question

Is there a relation between excessive weight and/or obesity among riders and their overall lifestyle?

Sub Questions

1. Is there a relation between excessive weight and/or obesity among riders and their physical activity?
2. Is there a relation between excessive weight and/or obesity among riders and equestrian sports?
3. Is there a relation between excessive weight and/or obesity among riders and their nutritional intake?
4. Is there a relation between excessive weight and/or obesity among riders and the lifestyle of the riders?

2. Literature Review

2.1 The modern lifestyle

According to Finkelstein (Finkelstein & Strombotne, 2010), not only economic forces have allowed us to be increasingly sedentary, at work, at home and in between, also the overall technical developments are supporting the sedentary lifestyle.

A cross-sectional study (Bann, et al., 2015), containing 1130 relatively sedentary older adults (age 70-89) who were assessed by the use of an accelerometer (3-7days) and by self-report, showed that this sedentary lifestyle can have considerable consequences concerning health. Greater sedentary time can be related to the increase of the Body Mass Index (BMI) and in some studies also to indicators of higher fat mass. One of the biggest problems, not only caused but also maintained by this upcoming sedentary lifestyle, can be considered obesity.

Over the past few decades, a host of sedentary new technologies (e.g. computers, the internet, video games, cable television etc.) have been introduced and replaced our “actively spend” free time. (Finkelstein & Strombotne, 2010) A cross-sectional study (Péneau, et al., 2011) provides evidence for the fact that the duration of watching television, which is part of a sedentary lifestyle, can be associated with behavioural and sociodemographic factors, which included e.g. child’s age, weight status, physical and lifestyle activities.

This excessive use of technological devices may also cause insomnia, weight gain and other health issues. Insomnia for example, has become a frequently mentioned complaint that can be caused by different factors of our modern lifestyle (e.g. use of alcohol, smoking, stress and whether or not an individual is active), that interfere with the quality and duration of our sleep. (Rossi, et al., 2010; Tamaki, et al., 2010)

According to current epidemiological studies (Galilicchio & Kalesan, 2009), short duration of sleep (<7 hours) can be related to cardiovascular health and general mortality. In addition, the duration of sleep can not only be associated with overeating, glucose intolerance, increase in weight and loss of lean body, analysis of causality between sleep and health consider the quality of sleep as an even more important factor. (Knutson, 2010; Mendes & Martino, 2012) Another study (Hargens, et al., 2013) indicates that the detection and treatment of sleep disturbances could be a potential therapeutic intervention for obesity.

Obesity/weight issues

Obesity, a chronic disease with important health and psycho-social consequences e.g. increased prevalence of heart failure, hypertension and coronary heart disease, is becoming a worldwide problem. (Finer, 2014) Around 10.2% of the population within the Netherlands has to deal with obesity.

The phase before obesity, called excessive weight, is even more common, 31.3% of the population has to deal with excessive weight. (VEP, 2009)

An indication that is often used to see whether people do or do not suffer from excessive weight and/or obesity is the Body Mass Index (BMI). Which is a calculation ($\text{weight}/\text{height}^2$) for a person older than 18, a $\text{BMI} \geq 25$ indicates excessive weight and a $\text{BMI} \geq 30$ indicates obesity. (Debray, 2012)

The accuracy of BMI in diagnosing obesity is limited, despite of the specificity it misses more than half of people with excess fat. (Romero-Corral, et al., 2008)

Because of the fact that the BMI calculation does not take any muscle-weight into account (which can lead to misinterpretations) it might be wise to also take a look at the overall fat percentage. This percentage can be estimated by different formulas or by the use of a high-tech scale. The following numbers are an indication concerning the recommended fat percentage. (HealthFit, 2013)

Women Fat %	Low	Healthy	High	Unhealthy
20 till 39 years old	< 21%	21% - 33%	33% - 39%	>39%
40 till 59 years old	< 23%	23% - 34%	34% - 40%	>40%
60 till 79 years old	< 24%	24% - 36%	36% - 42%	>42%
Men Fat %	Low	Healthy	High	Unhealthy
20 till 39 years old	< 8%	8% - 20%	20% - 25%	>25%
40 till 59 years old	< 11%	11% - 25%	34% - 40%	>28%
60 till 79 years old	< 13%	13% - 25%	36% - 42%	>30%

BMI Indication		
BMI	< 16	Extremely underweight
BMI	16 – 18,5	Underweight
BMI	18,5 - 25	Normal weight
BMI	25 - 30	Excessive weight
BMI	>30	Obesity

Nutrition

Beside the fact that people are commonly not aware of the actual ingredients in their “healthy” diet (like e.g. sugar or other unhealthy additives), high-calorie food has become much cheaper than the healthier alternatives. (Finkelstein, et al., 2008) In addition, the chocolate-candy consumption can be the cause of weight gain. (Greenberg, et al., 2015) According to Finkelstein, much of the decrease in relative prices is a result of advances in food technology that disproportionately affect processed foods (e.g. freeze drying and the discovery of mass production of high-fructose corn syrup), with all its consequences taken for granted.

According to a literature study of Finkelstein and Strombotne, (Finkelstein & Strombotne, 2010) economic forces have made it easier and cheaper to consume high-energy, tasty and affordable foods which can cause (definitely in high amounts) obesity and other forms of physical/mental health issues.

In other words, the rise in obesity rates is a direct result of changes in relative prices (or costs) that promote excess food consumption, inactivity and that decrease the motivation to engage in health-seeking behaviours (because of advances in medical technology, the health consequences of e.g. being obese have decreased).

Due to the modern busy lifestyle, lack of time to cook and eat healthy can be considered as a risk factor of obesity. Skipping breakfast seems to be highly underestimated as it has been shown to increase obesity by 5 times. (Watanabe, et al., 2014) Also the frequency of daily eating seems to influence BMI, according to a cross-sectional study by Holmback a low daily eating frequency can be associated with higher alcohol consumption, smoking and physical activity. The consumption of 3 or fewer daily meals was found to increase likelihood of general and central obesity in men. (Holmback, et al., 2010)

Smoking

Smoking can, according to a literature review of Freedman (Freedman, et al., 2006), be considered a risk factor for abdominal obesity, in both sexes, and for excessive weight in women. The hormonal imbalance, caused by smoking, is conducive to an accumulation of central fat followed by insulin resistance. According to Cena (Cena, et al., 2011), smokers should be informed about the fact that smoking is not an efficient way to control body weight, does not help to prevent obesity, could favour visceral fat accumulation and increases the risk of Metabolic Syndrome (MBS) and diabetes.

Alcohol

Several studies showed that the fat-sparing effect of alcohol and its energy are similar to that of carbohydrates. (Murgatroyd, et al., 1996; McCarty, 2000) Despite of the fact that consuming more than 14 units of alcohol a week can be associated with increasing symptoms like depression and anxiety (Wilson, et al., 2013), the regular and moderate consumption of alcohol seems to cause a decrease in BMI levels. (McCarty, 2000) This reduction in BMI levels could possibly be caused by the fact that regular moderate consumption of alcohol temporarily stimulates the AMP-activated protein kinase which supports the efficiency of fat oxidation. (McCarty, 2001) According to Sonko, the consumption of alcohol will only cause fat gain when consumed in excess of normal energy needs. (Sonko, et al., 1994)

Associations between alcohol consumption and obesity are rather complex and influenced by many factors such as patterns and levels of drinking; types of alcoholic drinks consumed; gender; genes; body weight; diet; physical activity levels and many other lifestyle factors. (Suter, 2005; Dennis, et al., 2009)

2.2 How to fight excessive weight

Sport and nutritional intake

Regardless of whether we are engaged in an exercise or resting, the body uses energy. Which requires an intake of energy, in forms of food. In the resting state the body depends, in almost equal ratios, on the use of fats and carbohydrates to produce energy, while during exercise the body mainly depends on the use of carbohydrates. This, in both cases, depends on their availability and the metabolic system of the muscles, which is responsible for the conversion of carbohydrates to glucose. Once the carbohydrate reserves in the muscles are used up, the body starts to rely more on the oxidation of fats, mainly used during less intensive but long lasting exercise, to supply the muscles with energy. (Bailey, et al., 2009)

To avoid and cure excessive weight and obesity, fundamental changes in dietary behaviour and physical exercise are needed. Especially changing the diet is a critical factor since the amount of physical exercise required to burn off the calories from fast-food and other unhealthy substances, can be extremely high. (Hyde, 2008) The amount of energy used up during exercise is often overestimated. Effective weight loss requires >150 min/week of exercise with an energy consumption rate of 1200 to 1800 kcal/week. (Donnelly, et al., 2009) Increasing the intensity of the training can increase post-exercise energy expenditure and fat oxidation. (Warren, et al., 2009) According to Holloszy et al. moderate to high intensity training programs result in a higher reduction of visceral adipose tissue (VAT), the most pathogenic fat depot. (Holloszy, et al., 1998) In addition, high volume training programs result in a higher VAT reduction. (Friedenreich, et al., 2011)

When large muscle groups are used, the intensity is moderate to high, and the exercise work is of long duration, weight loss can be expected. (Wirth, et al., 2014) However, after losing 7 to 14kg, physically active persons regain half their lost weight within 1 or 2 years and therefore need to be informed about the nutritional value concerning weight loss and weight gain.

The cross-sectional study of Bann (Bann, et al., 2014), showed that replacing sedentary activities with light intensity activities could lead to lower BMI levels and obesity prevalence. In some studies greater sedentary time has been related to indicators of higher fat mass. (Bann, et al., 2015)

Concerning an average adult, it is stated that a daily intake of 2000kcal (8400KJ) is required for females and 2500 (10500KJ) for males. The female adult requires an intake of around 70g of fat (20g saturated fatty acids), 260g of carbohydrates (90g sugars) and 50g of proteins. As the male requires a higher intake of kcal, the other average numbers are allowed to be a bit higher. (Voedingscentrum, 2013) Genetic differences make it hard to generalize diets, as people all respond differently to a certain diet. The American Heart Association has warned that even though some people might benefit from the low-fat-diets others could suffer from dangerous side-effects. (BMJ, 1998)

Other studies and the personal communication with an expert (Gerard Sombroek, personal communication) suggest to lower the intake of carbohydrates to a maximum of 40% and higher the amount of protein and fat, not only because of the potential negative side effects of a high-carb-diet, but also to prevent and/or cure obesity. (Saarbrücken, 2012) Other studies concerning weight loss in obesity clients even advice to lower the carbohydrates to a percentage of 12, the amount of fat to 43% and the amount of protein to 45%. This type of diet is called low-carbohydrate-high-protein diet and is known for its little negative effects concerning health. (Foo, et al., 2009) It is not desirable, according to Dr. Krauss (BMJ, 1998), to stick to a low-fat diet as this could have adverse effects.

Considering the nutritional cause of obesity, people should consume less food with a high energy density and more food with a low energy density. Fast food often contains a high proportion of (processed) fat and sugar and is thus very energy-dense. (Rosenheck, 2008) Not only drinks sweetened with sugar, but also fruit juice and juice-based drinks, have a high sugar content and are not very filling. (Vartanian, et al., 2007) Foods that have a low energy density due to their high water or fibre content, such as wholegrain products, fruit and vegetables, are comparatively more filling and lower in energy content. (Wirth, et al., 2014) A energy deficit of 500 to 600 kcal/day will allow weight loss to occur at around 0.5kg/week over a period of 12 up to a maximum of 24 weeks. (Witham, et al., 2010) Nevertheless, excessive caloric restriction can cause overall health problems and will ultimately cause weight gain as the body is set to starving-mode and will therefore store energy. (Amigo & Fernandez, 2007)

Unfortunately the European Union's Common Agricultural Policy tends to subsidise surpluses of foods which are high in calories, but low in vitamins, minerals and fibre, rather than foods that could help to prevent obesity. This, and all the other daily temptations, make it harder to resist the mainly cause of obesity, which is food. (Alvarez, 2010)

Effect of both exercise and nutrition on the cardiovascular system

Diet as well as exercise patterns can have a big influence on the current state of the cardiovascular system, which is a crucial factor in horse riding.

The composition of the diet can have negative effects on the health of blood vessels, by e.g. causing cholesterol plaques built up in the arteries. A more healthy diet (high in fruit, vegetables, whole grains, reduced fat dairy and low in fast-food, soda and red-/ processed meat) can prevent or even cure this clogging or clotting of the blood vessels and is associated with smaller gains in waist circumference and BMI (Morin, et al., 2004; Hendrickson, 2010).

Exercise, on the other hand, can have highly positive effects on the cardiovascular system. A long-term response to exercise is building up new capillaries, which drop off and collect blood at your muscles and lungs, so more oxygen can be delivered to and more carbon dioxide can be removed from your working muscles. As another long-term benefit to exercise, your red blood cell count increases as you get fitter, which makes it possible to transport greater amounts of oxygen throughout the body. (Dale, 2014)

2.3 Equestrian Sports

Metabolic costs of horse riding

Beside the required skills like flexibility, balance and coordination, also a good physical condition is decisive, whereas experienced riders use at least 60% of their maximal aerobic power in trot and canter. (Westerling, 1983) Riding at a walk reaches values indicative of light exercise (average heartrates between 102 and 108 beats/minute), where trot (average heartrates of 163 beats/minute at rising- and 170 beats/minute at sitting trot) and canter (average heartrates of 172 beats/minute) are physically more demanding. (Devienne & Guezennec, 2000)

All the bones, ligaments, tendons and muscles of the musculoskeletal systems work together to ensure that riders can manage to stay on their horses. The cardiovascular system is responsible for the delivery of fuel to muscles and other cells of the body, in order to keep them working at an optimal efficiency. It also ensures, together with the respiratory system, that oxygen is delivered to the body's cells and carbon dioxide is removed. (Wolframm, 2013)

Different studies show that despite of the required physiological condition at least 20% of all riders has to deal with excessive weight (VEP, 2009). Unfortunately we still do not really know why several riders deal with excessive weight. Does it have to do something with their diet, lifestyle or is it because riders do not see themselves as the athlete but rather consider the horse as the one that needs to be fit?

Issues relating to horse welfare and rider safety

Not only riders can suffer from being overweight or obese. Recent studies show that the optimal weight of a rider should not be more than 10-15% of their horse's bodyweight. This is a percentage seen as "satisfactory" to prevent the horse from suffering from health problems as it will adjust to the load of its rider. Only 1 out of 20 riders retrieves the standard of 10% or less and approximately 32% of the riders weigh more than 15% of the weight of their horse, which is considered a welfare risk. (Randle, 2014) However, other studies concluded that well trained endurance horses were required to carry additional loads of 20-30 percent of their body weights. (Garlinghouse & M, 1999)

In general, the cardiovascular system of riders is very important to prevent e.g. muscular fatigue and therefore a decrease in accidents. The cardiovascular system can be trained through moderate to high intensity endurance training which is known to positively affect the VO₂max. The cardiovascular system can also be improved, especially in riders who suffer from excessive weight, through more healthy diet changes and weight loss (due to e.g. lowering blood pressure and fatty deposits in the veins).

Incidentally, athletes (and therefore riders) who are able to exercise at higher intensities without accumulating lactate (which causes muscular fatigue due to a lack of oxygen) are generally at an advantage. Also preliminary findings seem to suggest that there is a relationship between lower levels of fitness and higher fall rates in jockeys. (Wolframm, 2013)

3. Methodology

3.1 Quantitative Research

Data collection

A questionnaire was developed, distributed and promoted on a number of social media channels (e.g. Bokt, Facebook, other social media and Facebook pages of riding/livery stables).

The questionnaire was available from 21-02-2015 till 21-03-2015 (Annex A) and was used to provide an indication of the weight of the current riders, their life style and their level of riding.

Questionnaire

The questionnaire was developed by the use of references (literature review), other relevant sources and the personal opinions of experts Dr. Inga Wolframm (Dr. Inga Wolframm, personal communication) and Gerard Sombroek (Gerard Sombroek, personal communication) to determine possible affecting factors concerning (excessive) weight gain.

After a consultation with an expert concerning rider psychology (Dr. Inga Wolframm, personal communication) and an Personal Coach concerning nutrition and training (Gerard Sombroek, personal communication) the following appropriate questions and categories were developed:

1. General information; gender, age, height, weight and zip code
2. Nutritional intake: breakfast, number of daily meals, number of daily snacks, estimated daily calorie intake, weekly candy consumption, weekly fast food consumption, daily soda consumption and the psychological reason to consume food
3. Lifestyle; smoking, drug use, sleep quality/pattern, parenting and profession
4. Physical activity/sedentary hours; walking, cycling, housekeeping, sports, sedentary hours, light physical work and heavy physical work

The questionnaire was put online by the use of www.thesistools.nl and contained 40 questions of which 4 ordinal, 13 nominal and 23 scale variables.

At the end of the questionnaire riders were asked if they would like to be contacted by email for further research. An E-book and a consultation (among five riders) was promised after participation.

Among the 443 respondents, 57 respondents were willing to participate in further research, they were contacted by email (Annex B). The email contained a three-day diary (Annex C) they were asked to fill in for the next three days. This diary contained daily exercise (including equestrian sports), nutritional intake and sedentary hours.

Data analysis

The outcomes of the questionnaire were downloaded as an Excel file at www.thesistools.nl, which could be imported in SPSS. IBM SPSS Statistics 21 was used for the analysis of the results.

The following tests were used to find a relation between the BMI Level (or other dependent factors) and different variables.

The One-way ANOVA (alpha value .05) was used to investigate whether there was a relation between BMI-level and quality of sleep.

In addition, the Mann-Whitney U test was used to investigate whether there was a relation between daily housekeeping and daily walking or daily cycling. The breakfast consumption was compared to daily snacks, daily meals and weekly alcohol consumption. In addition, the weekly alcohol consumption was compared to daily cycling.

The Independent Sample T-test (alpha value .05) was used to investigate whether there was a relation between BMI-level and daily cycling, daily housekeeping, parenting or daily breakfast consumption.

The Spearman rho correlation (alpha value .05) was used to investigate whether there was a relation between BMI-level and daily sedentary hours, riding level, daily main meals, weekly fast-food consumption, daily (healthy) snacks, weekly candy consumption, age of the children, sleep interruptions, hours of daily training, weekly riding hours, daily soda consumption, hours of light-physical work, hours of heavy-physical work, daily number of cigarettes, hours of daily stable activities, hours of sleep or weekly alcohol consumption. Moreover, the weekly fast-food consumption was compared to daily snacks, weekly alcohol consumption and daily soda consumption. The weekly candy consumption was compared to weekly fast-food consumption and daily (healthy) snacks.

Furthermore, the Kruskal-Wallis test was used to investigate the possible relation between riding level and daily cycling.

Finally the Two-way ANOVA (alpha value .05) was used to investigate whether there was an interaction between main meals and daily snacks, estimated daily calories and main meals or estimated daily calories and daily snacks concerning BMI-level.

3.2 Case Studies

Data collection

A nutritional diary was developed by the use of Microsoft Excel 2013 and distributed by e-mail. After the personal communication with expert and Personal Coach Gerard Sombroek (Gerard Sombroek, personal communication), appropriate questions/layout concerning nutritional intake and daily exercise were developed.

To reach the expected amount of 10 individual riders, all qualified riders were reached by email and asked to fill in the nutritional diary for three days (no abnormal days like e.g. birthdays). After three reminders send by email from 23-03-2015 till 8-04-2015, only 5 participants were willing to fill in the nutritional diary for three days.

Nutritional diary

The nutritional diary (Annex C) was analysed by the use of IBM SPSS Statistics 21, Microsoft Excel 2013 and the professional opinion of an expert and Personal Trainer (Gerard Sombroek, personal communication). The expected number of ten riders was not reached, instead five riders were analysed.

Data analysis

The diaries were studied on nutritional intake (to indicate the amount of protein, carbohydrates and fat) and other factors like exercise (both horse riding and other sports) and unhealthy habits (like e.g. smoking or consuming alcohol on a regularly base). Based on this data, differences in the diet, life style and BMI level are analysed.

The application “MijnEetmeter” (mijnvoedingscentrum.nl) was used to calculate the daily nutritional intake by importing the consumed products listed in the nutritional diary. The total daily nutritional intake concerning carbohydrates, fat, protein and overall calories, according to “MijnEetmeter” were compared to the recommended daily intake and analysed by expert and Personal Coach Gerard Sombroek (Annex D).

All selected riders are divided concerning their lifestyle, healthy patterns and unhealthy habits by Personal Trainer Gerard Sombroek. The self-made scheme called “HealthyIndex” (1= very unhealthy and 5= very healthy) makes it easier to categorise the individual riders and find possible relations (ANNEX D).

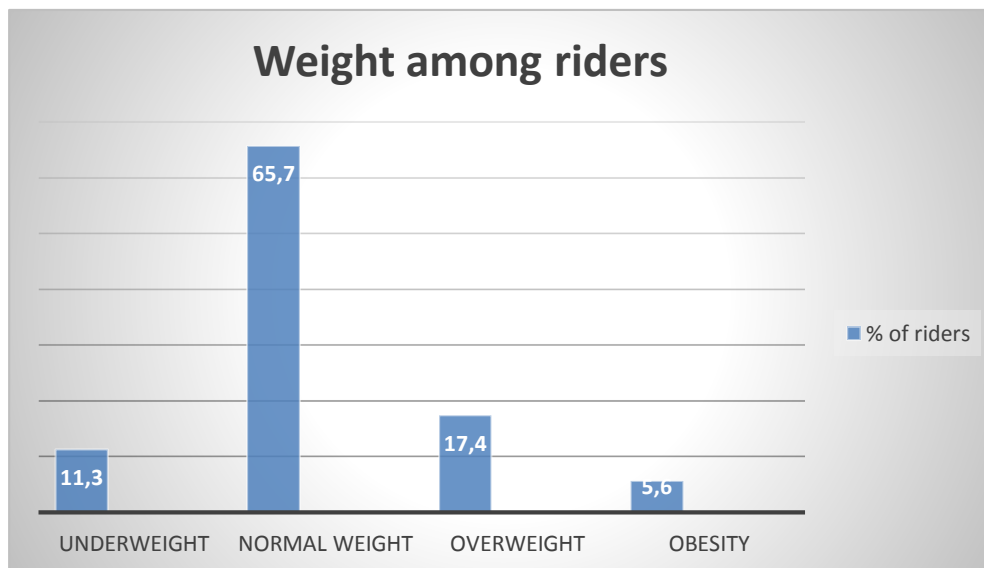
The Spearman rho correlation with an alpha value of .05 was used to test whether there was a correlation between BMI in relation to fat percentage, carbohydrates, protein, fat or calories. The test was also used to find a correlation between fat percentage in relation to carbohydrates, protein, fat or calories and finally to see whether there was a correlation between calories and protein, fat or carbohydrates.

4. Results

The questionnaire results provided in this chapter are based on the answers given by 443 respondents. The majority of the respondents is female (99.1%), has an age between 18 – 31 (68.8%), does not smoke (86%) or use any drugs (92.8%) and does not have any children (90.1%).

Regarding the equestrian sports, 55.1% of participants practises dressage, 5% jumping and 40% practises other sorts of equestrian sports (e.g. western, recreation riding etc.). Concerning the riding level, 32.5% is competing at B-level, 27.1% at L-level and 13.8% at M-level. Only 8% of the respondents is competing at Z or ZZ-level and 18% of them is not competing at all.

Within the respondents (n=443) excessive weight was found in 17.4% of the riders and 5.6% had to deal with obesity. As expected the findings of previous studies, ~20% of the riders has to deal with excessive weight and/or obesity, can be confirmed.



4.1 Physical activity and sedentary behaviour in relation to BMI

A significant difference ($p=.000$) in BMI was found with the use of an Independent Sample T-test between riders who cycle daily ($n=176$) and riders who do not cycle daily ($n=267$). A lower BMI level (21.825 ± 3.6700) was found in riders who cycle daily compared to those who do not cycle daily (23.474 ± 4.8035).

Independent Sample T-test BMI in relation to:	p	t	Daily cycling	Mean/St. Dev. BMI Level
<i>daily cycling</i>	.000	-3.868	Yes No	21.825 ± 3.6700 23.474 ± 4.8035
			Daily housekeeping	
<i>daily housekeeping</i>	.000	3.563	Yes No	23.491 ± 4.9878 21.994 ± 3.5474

*The mean difference is significant at the 0.05 level

In addition a significant difference ($p=.000$) was found in BMI level concerning daily housekeeping. Riders who spent hours on daily housekeeping tend to have a higher BMI level (23.491 ± 4.9878) compared to riders who do not spend hours on daily housekeeping (21.994 ± 3.5474).

Furthermore, according to the Spearman rho, a correlation was found between BMI level and daily sedentary hours ($p=.016$, $r=-.141$). Riders who spent less hours sedentary tend to have a higher BMI and riders who spent more hours sedentary tend to have a lower BMI. In addition, no other significant differences in relation to daily sedentary hours were found.

Other than expected, no significant difference and/or correlation was found in BMI level in relation to daily training other than riding, stable activities, light physical work, daily walking, soda consumption, the duration of the daily cycling and the hours of daily housekeeping.

Spearman rho BMI in relation to:	p	Correlation Coefficient
<i>Daily sedentary hours</i>	.016	-.141

*The correlation is significant at the 0.05 level

According to the Mann-Whitney U test, less time is spend ($p=.000$, $U=17972$) on daily cycling (253.39) by riders who spent time on housekeeping compared to riders who do not spent time on housekeeping (201.31). On the other hand, riders who spent time on daily housekeeping seem to be more active ($p=.021$, $U=19152.5$) concerning their daily walking (213.49) in comparison to rider who do not spent their time on housekeeping (239.32).

Mann-Whitney U Daily housekeeping in relation to:	P	U	Z	Housekeeping	Mean Rank Cycling (1=yes/2=no)
Daily cycling	.000	17972	-4.863	Yes No	253.39 201.31
					Mean Rank Walking (1=yes/2=no)
Daily walking	.021	19152.5	-2.317	Yes No	213.49 239.32

*The mean difference is significant at the 0.05 level

4.2 Equestrian Sports in relation to BMI

According to the Spearman rho test, BMI is significantly correlated ($p=.001$, $r=.152$) with riding level. Other than expected, riders at a higher level seem to have a higher BMI.

Spearman rho BMI in relation to:	P	Correlation Coefficient
<i>Riding Level</i>	.001	.152

*Spearman rho correlation is significant at the 0.01 level

However, a significant difference was found with the help of the Kruskal-Wallis test. The outcome indicated that riders who cycle daily are more likely ($p=.001$) to ride at a lower level (198.16) compared to those who do not cycle daily (237.72).

Kruskal-Wallis Riding level in relation to:	p	Chi-square	Cycling	Mean Rank <i>Riding level</i>
Daily cycling	.001	10.812	Yes	198.16
			No	237.72

*The mean difference is significant at the 0.05 level

4.3 Nutritional intake in relation to BMI

The Independent Sample T-test showed that BMI was significantly different ($p=.033$) in riders who daily consumed breakfast ($n=401$) and riders who daily skipped breakfast ($n=42$). A higher BMI (22.928 ± 4.5648) was measured in riders who consumed breakfast compared to riders that skipped breakfast (21.772 ± 3.1109).

Independent Sample T-test BMI in relation to:	P	T	Breakfast	Mean/St. Dev. BMI level
Daily breakfast	.033	2.176	Yes	$22,928 \pm 4,5648$
			No	$21,772 \pm 3,1109$

*The mean difference is significant at the 0.05 level

According to the Spearman rho, weekly fast-food consumption can be significantly correlated with BMI-level in riders ($p=.001$, $r= -.112$). The lower the weekly fast-food consumption the higher the BMI level of riders seemed to be. Concerning the weekly candy consumption, a negative correlation was found ($p=.000$, $r= -.228$), the higher the amount of weekly candy consumption the lower the BMI level in riders.

In addition, the number of daily snacks ($p=.003$, $r= -.146$) and main meals ($p=.019$, $r= -.112$) consumed can be negatively correlated to BMI level. A higher amount of both daily snacks and main meals are correlated with a lower BMI level in riders.

Concerning the daily soda consumption, no significant difference was found.

Spearman rho BMI in relation to:	P	Correlation Coefficient
Daily main meals	.019**	-.112
Weekly Fast-food consumption	.001	-.173
Daily snacks	.003	-.146
Weekly candy consumption	.000	-.228

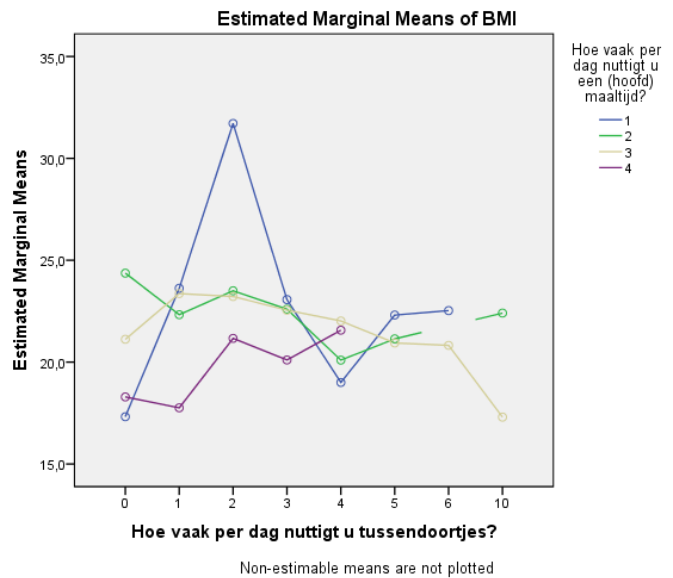
*The correlation is significant at the 0.01 level (2-tailed)

**The correlation is significant at the 0.05 level (2-tailed)

With the Two-way ANVOA test an interaction was found between daily meals*calories ($p=.000$), daily snacks*calories ($p=.000$) and daily meals*daily snacks ($p=.005$) concerning BMI level in riders. A lower BMI level was found in riders who consumed three main meals in combination with ten (healthy) snacks, riders who consumed around 1000 calories combined with one main meal and in riders who consume around 1000 calories combined with no daily snacks.

Two-way ANOVA	P	F
Interaction concerning BMI		
<i>Daily calories*daily meals</i>	.000	3.310
<i>Daily calories*daily snacks</i>	.000	2.206
<i>Daily main meals*daily snacks</i>	.005	2.209

*Significant at the 0.05 level



The Mann-Whitney U test showed a difference in consumption of daily (healthy) snacks ($p=.002$, $U=5578.5$), daily main meals ($p=.000$, $U=3328$) and weekly fast-food consumption ($p=.007$, $U=5055.5$) in relation to breakfast consumption. Riders who consumed breakfast were more likely to consume daily (healthy) snacks (217.36) compared to riders who skipped breakfast (157.06). Furthermore, riders who consumed breakfast also consume a higher amount of daily main meals (231.10) compared to riders who skipped breakfast (102.17). The riders who consume breakfast also tend to have a lower weekly fast-food consumption (193.16) compared to riders who skipped breakfast (239.36)

Mann-Whitney U Breakfast in relation to:	P	U	Z	Breakfast	Mean Rank Daily snacks
Daily snacks	.002	5578.5	-3.172	Yes	217,36
				No	157,06
					Daily meals
Daily meals	.000	3328	-8.353	Yes	231.10
				No	102.17
					Fast-food
Weekly fast-food consumption	.007	5055.5	-2.714	Yes	193.16
				No	239.36

*The mean difference is significant at the 0.05 level

The spearman rho test showed a correlation between daily snacks ($p=.001$, $r=.175$) and weekly soda consumption ($p=.000$, $r=.190$) in relation to weekly fast-food consumption. Riders who consume more fast-food seemed to consume more daily (healthy) snacks and more weekly soda.

Spearman rho Fast-food consumption in relation to	P	Correlation Coefficient
Daily snacks	.001	.175
Weekly soda consumption	.000	.190

*The correlation is significant at the 0.01 level (2-tailed)

When focusing on weekly candy consumption a positive correlation was found between daily snacks ($p=.000$, $r=.431$) and weekly fast-food consumption ($p=.001$, $r=.166$) by the use of the spearman rho test. Riders who consumed more candy seemed to consume more daily snacks and more weekly fast-food.

Spearman rho Weekly candy consumption in relation to:	P	Correlation Coefficient
<i>Daily snacks</i>	.000	.431
<i>Weekly fast-food</i>	.001	.166

*correlation is significant at the 0.01 level (2-tailed)

4.4 Lifestyle of riders in relation to BMI

The quality of sleep seems to effect the BMI-level of riders ($p=.012$). A difference was found between the scores “very good” - “medium” ($p=.016$) and “very good” – “adequate” ($p=.039$).

Riders who scored their sleep quality as “very good” had a significantly lower BMI ($21,074 \pm 2,6659$) than riders who scored “adequate” (23.920 ± 4.0236) or “medium” (24.349 ± 8.8214).

One-way ANOVA BMI in relation to:	P	F	Bonferonni
			<i>between sleep qualities (score 1-10)</i>
Quality of sleep	.012	2.380	(9) Very good – (5) medium $p= .016$ (9) Very good – (6) adequate $p= .039$

*The mean difference is significant at the 0.05 level

According to the Spearman rho, it can be said that the weekly alcohol consumption influences the BMI level in riders ($p=.000, r= -.369$). Riders who consume less alcohol have a higher BMI level compared to riders who consume more alcohol.

In addition the spearman rho test showed a positive correlation between weekly alcohol consumption and fast-food consumption ($p=.011, r=.128$), both increase accordingly. Furthermore the Mann-Whitney U test indicated that riders who cycle daily are more likely to consume alcohol (239.06) compared to riders who do not cycle daily (210.75).

Spearman rho Weekly alcohol consumption in relation to:	P	Correlation Coefficient
<i>Fast-food consumption</i>	.011	.128

*The correlation is significant at the 0.05 level (2-tailed)

Mann-Whitney U Weekly alcohol consumption in relation to:	P	U	Cycling	Mean Rank <i>Alcohol consumption</i>
<i>Daily cycling</i>	.022	-2.292	Yes No	239.06 210.75

*The mean difference is significant at the 0.05 level

The Independent Sample T-test shows that parenting seems to affect the BMI-level of riders. Riders who have children tend to have a significant higher BMI (24.407 ± 4.1237) than riders without children (22.644 ± 4.4632).

Independent Sample T-test BMI in relation to:	P	T	Parenting	Mean/St. Dev. BMI level
Parenting	.010	2.669	Yes	24.407 ± 4.1237
			No	22.644 ± 4.4632

*The mean difference is significant at the 0.05 level

The spearman rho test showed a correlation between the age of the children and BMI level in riders ($p=.004$, $r=.135$). The older the children, the higher the BMI of the riders, and vice versa. Also the number of sleep interruptions seems to be a crucial factor concerning BMI level, the higher the number of interruptions the higher the BMI level among riders.

Spearman rho BMI level in relation to:	P	Correlation Coefficient
<i>Weekly alcohol consumption</i>	.000	-.369
<i>Age of children</i>	.004	.135
<i>Sleep interruptions</i>	.049**	.093

*The correlation is significant at the 0.01 level (2-tailed)

** The correlation is significant at the 0.05 level (2-tailed)

Smoking as well as the number of daily cigarettes do not seem to influence the height of the BMI level among riders. Moreover, no significant differences were found concerning BMI level among riders in relation to drug use, hours of sleep and sleep interruptions.

4.5 case studies

The overall database contained 57 qualified riders of which, according to their BMI level, 2 participants had to deal with obesity, 12 with excessive weight and 43 had an normal weight. Among these qualified riders 5 were selected for further research.

This case study contained one rider with obesity and four riders with a normal weight. Concerning their fat percentage one rider could be categorised to “unhealthy”, three riders had a normal fat percentage and one rider has a low fat percentage.

After analysing the nutritional diaries and the personal opinion of expert and personal coach Gerard Sombroek, the following results could be presented (see below). To lose weight and accomplish a healthier lifestyle, according to FitBewust, the nutritional structure should be 40% carbohydrates, 20-30% protein and 30-40% fat. (BMJ, 1998; Foo, et al., 2009; Saarbrücken, 2012)

No significant difference was found between the nutritional intake and BMI level, calories or fat percentage according to the Spearman rho correlation.

	BMI	Fat %	Healthy-Index	Recommendent daily intake Gerard (g)	Average intake	% of calorie intake
1	24.4	28.5%	2.3	Calories: 2163 (1730) Carbohydrates: 216.3 Fat: 72 Protein: 162	Calories: 1553 Carbohydrates: 189.0 Fat: 47.8 Protein: 80.4	48.7% 27.7% 20.7%
2	29.6	47.9%	2.3	Calories: 1868 (1495) Carbohydrates: 187 Fat: 62 Protein: 140	Calories: 1934 Carbohydrates: 256.9 Fat: 47.7 Protein: 105.5	53.1% 22.2% 21.8%
3	19.8	23,81%	3.33	Calories: 2064 (1651) Carbohydrates: 232 Fat: 73 Protein: 119	Calories: 1252 Carbohydrates: 167.5 Fat: 46.1 Protein: 35.5	53.5% 33.1% 11.3%
4	19.2	15.92%	4.1	Calories: 2404 Carbohydrates: 301 Fat: 88 Protein: 108	Calories: 2040 Carbohydrates: 185.4 Fat: 87.8 Protein: 115.5	36.4% 38.7% 22.6%
5	23.3	23.2%	2.16	Calories: 2464 (1970) Carbohydrates: 277 Fat: 82.1 Protein: 154	Calories: 2039 Carbohydrates: 312.9 Fat: 51.0 Protein: 69.6	61.4% 22.5% 13.7%

*Red indicates an excessive intake where Orange indicates a shortage of nutritional intake

This analysis indicates that riders consume often an excessive amount of carbohydrates in relation to their daily calorie intake. The nutritional pattern has an overall shortage in fat and protein, 4 out of 5 riders do not reach their daily standards.

Another finding of this research is that the overall nutritional intake among the riders is too low.

5. Discussion

This research was conducted to investigate whether a relation between the overall lifestyle of the rider and excessive weight and/or obesity can be found.

Daily cycling has a positive effect on the BMI level of riders, as a study done by Bann confirms light intensity activities can lead to an decrease in BMI level. (Bann, et al., 2014)

Riders who consume more daily meals and/or (healthy) snacks tend to have a lower BMI level. A lower daily eat frequency consumption can be associated with an increase in BMI level, also seen in other studies. (Holmback, et al., 2010) The excessive amount of carbohydrates within the composition of the diet among riders as well as the overall shortage of fat and protein can, according to Saarbrucken and the outcome of this study, increase the BMI level of riders. (Saarbrucken, 2012)

Although no other studies relating to parenting were found, according to this study parenting caused an increase in BMI level. This could possibly be explained due to the weight gain during pregnancy, but also due to the change of lifestyle of parents. In addition, the older the children the higher the BMI level measured in riders.

As different studies showed (Knutson, 2010; Mendes & Martino, 2012), the quality of sleep can be considered as an important factor concerning BMI level. The better the quality of sleep, the lower the BMI level in riders seemed to be. Furthermore “insomnia” as well as a higher number of sleep interruptions can cause the increase in BMI level. (Hargens, et al., 2013)

Despite all efforts, there are some limitations regarding the conducted investigation that need to be acknowledged. In the collection of the data an questionnaire was used, the questionnaire was filled in online without any supervision or possible communication with the respondents. Therefore it might be possible that the respondents gave misleading estimated numbers, also the height and weight of the respondents could not be checked. Another limitation is the use of BMI as an indicator of excessive weight and/or obesity. Different studies show that according to BMI more than half of the people with excess fat does not have excessive weight and/or obesity in relation to the BMI levels. (Romero-Corral, et al., 2008) The fat percentage used in the case studies is a more accurate measurement.

5.1 Physical Activity and sedentary behaviour

Regarding physical activity, a relation in both “daily cycling” and “daily housekeeping” concerning BMI was found. As other studies confirm (Bann, et al., 2014), daily light intensity activity, such as daily cycling, can have a positive effect on the BMI levels of riders. On the other hand the results of daily housekeeping indicate a negative relation towards BMI. Because of the fact that we do not want to jump into the conclusion that daily housekeeping is bad for your health, we might consider the following factors.

Although no evidence was found, there might be a possibility that riders who spent their time on daily housekeeping are overall spending more time at home than riders who do not spend their daily time on housekeeping. Another possibility can be that riders who spent their time on housekeeping are more often parents, as parenting seem to have an increasing effect on BMI level.

Among riders who spent their daily time on housekeeping, a lower number of daily cycling and a higher number of daily walking was found compared to those who do not spend their daily time on housekeeping. This could explain the height of their BMI level as daily cycling causes an decrease in BMI (Bann, et al., 2014) and daily walking tends (according to this study) to have an increasing effect on the BMI level of riders.

Other than expected, no significant difference was found in daily walking and BMI level of the riders. Factors like sedentary hours, daily main meals and daily snacks could not explain this unexpected outcome. Beside the relation between daily walking and daily housekeeping, no other relation could be found. A study done by Bann (Bann, et al., 2014) showed that low intensity activity can lead to weight loss, therefore it is unlikely these findings are correct. We need to consider the incorrectness of the estimated values given by the respondents.

Furthermore, sedentary behaviour showed a decrease in BMI level in riders. As other studies pointed out that the increase of sedentary behaviour can cause weight gain (Péneau, et al., 2011; Bann, et al., 2015), other influencing factors have to be taken into account. This unexpected outcome might be caused by the incorrectness of the BMI level among the respondents caused by false height and weight numbers or the inaccuracy of BMI as an indicator for excessive weight and/or obesity.

5.2 Equestrian Sports

Other than expected, no relation could be found between the riding discipline and the BMI level of riders. This might be due to the fact that 243 respondents were dressage riders, only 22 of them were jumpers and 178 of the respondents represented all sorts of other equestrian sports which vary from recreational riding to training a young horse (only a few times per week). Although it might not be significantly proven, the results indicate that jumpers, as expected, tend to have the lowest BMI levels compared to dressage and “recreational” riders.

Concerning the different riding levels, a relation was found between riding level and BMI. The results insinuate that a higher riding level is combined with a higher BMI level. This could indicate that riders with a higher BMI are not impaired with their performance. These results suggest that riders are not physically limited by the height of their BMI. Moreover it suggests that the higher the riding level, the higher their BMI gets or that equestrian sports do not require any physical endurance and cannot be considered a sport. However, previous researches have shown otherwise (Westerling, 1983), therefore we should consider the fact that this research is based on the outcomes of a questionnaire that was provided online and completed by the respondents without any supervision and/or communication. In addition the fact that height and weight of the riders were not calculated but filled in by the respondents themselves could give misleading indications of their calculated BMI-levels.

Furthermore, the fact that a difference was found between daily cycling concerning riding level might explain the unexpected outcome, as daily cycling can (according to this study and a previous study done by Bann) be related to weight loss (Bann, et al., 2014). Riders within the lower levels tend to practice “daily cycling” more often than those at higher levels.

5.3. Nutritional Intake

Concerning nutritional intake breakfast can be associated with a higher BMI according to results found in this study. Because of the fact that other studies (Watanabe, et al., 2014) have shown otherwise, the skewness of the data might be taken into account. Whereas 401 respondents consumed their daily breakfast and only 42 of the respondents skipped their breakfast. As about 23% of all the respondents has to deal with excessive weight and/or obesity it is likely that most of them are eating breakfast.

Also the following factors are found to influence the consumption of breakfast and could therefore “manipulate” the findings. Riders who consumed breakfast were more likely to consume daily (healthy) snacks and main meals, which can be related to a decrease in BMI level. (Holmback, et al., 2010; Wirth, et al., 2014) On the other hand riders who consume breakfast are less likely to consume a high number of weekly fast-food (which is according to this study associated with an decrease in BMI level).

These influencing factors make it hard to say whether the height of the BMI level among the examined riders is actually caused by the influence of these factors or by the consumption of daily breakfast.

Furthermore, a significant difference was found in the weekly fast-food consumption in relation to the BMI level of the riders. Riders who consume a higher amount of weekly fast-food have a lower BMI than those who consume less fast-food a week. Considering the fact that fast-food can be seen as a high energy density food and therefore causes excessive weight and/or obesity (Rosenheck, 2008; Finkelstein & Strombotne, 2010), possible other influencing factors need to be considered.

Factors like, exercise, overall nutritional intake and lifestyle have not been taken into account. Therefore, the possibility might exist that these riders compensate their weekly fast-food consumption by activities or other healthy lifestyle indicators. Significant differences were found in breakfast consumption, daily snacks and weekly soda consumption.

Riders who consume breakfast, which according to this study increases the BMI level, tend to consume less fast-food than those who skip their breakfast. This interaction might be an explanation for this odd outcome, which can be caused by the incorrectness of the given answers by the respondents. A correlation between daily (healthy) snacks and weekly soda consumption was found in relation to weekly fast-food consumption. Riders who consume a higher amount of weekly fast-food tend to consume more (healthy) daily snacks. These daily snacks can be seen as low energy density food with a high water and/or fibre content which can be , according to this and other studies (Holmback, et al., 2010; Wirth, et al., 2014), associated with an increase in BMI level.

Although according to this study soda consumption does not seem to effect BMI level, the study of Vartanian (Vartanian, et al., 2007) showed that sweetened drinks (soda) contain a lot of sugar and therefore increase the risk of excessive weight and/or obesity. The fact that riders with a higher fast-food consumption and a higher soda consumption seem to have a lower BMI indicates a incorrectness among this data. The possibility occurs that the given estimated amount of fast-food, soda consumption and/or BMI level of the riders might be incorrect.

According to the results, weekly candy consumption can be related to BMI level. Other than expected, a higher candy consumption leads to a decrease in BMI level. This, assuming that candy is unhealthy and can cause health and/or weight issues (Vartanian, et al., 2007; Greenberg, et al., 2015), can possible be explained by other influencing factors.

Riders who have a higher candy consumption are more likely to consume daily snacks and have a higher fast-food consumption. As the consumption of daily snacks can be associated with an decrease in BMI, according to this study and other studies done by Holmback and Wirth (Holmback, et al., 2010; Wirth, et al., 2014), these influencing factors might explain the rather unexpected outcome.

5.4 Lifestyle

As expected the results hypothesize that the consumption of alcohol has a lowering effect on the BMI level. Even though other studies support these outcomes (McCarty, 2000) the inaccuracy of BMI as a measurement has to be taken into account.

Also the other differences that were found concerning alcohol consumption could be influencing the outcomes. The fact that riders with a higher fast-food consumption or daily cycling tend to have a higher alcohol consumption, could be an explanation for the lower BMI level in relation to higher alcohol consumption. Whereas daily cycling can be, both according to this study and another study by Bann, associated with an decrease in BMI level (Bann, et al., 2014). According to this and other studies (Holmback, et al., 2010; Wirth, et al., 2014), the consumption of daily (healthy) snacks can lead to decrease in BMI. In addition the (possible incorrect) outcomes of this study indicate that a higher fast-food consumption also leads to an decrease in BMI.

5.5 Case studies

The expected number of 10 riders was unfortunately not achieved, instead 5 riders were analysed by the use of a 3-day nutritional diary. The relative low number of cases made it hard to find significant differences but the fact that all cases are analysed individually resolves this problem.

The specific questions, expertise and experience of Gerard Sombroek have improved the accuracy of this research. Also the studies that support the vision of FitBewust on a healthy diet make this research more reliable. (BMJ, 1998; Foo, et al., 2009; Saarbrucken, 2012)

Genetic differences make it hard to generalize diets, as people respond differently to a certain diet. (BMJ, 1998) Therefore, in this case study all 5 riders can be seen as individuals, calculations concerning their recommended daily intake (based on their lifestyle, age, sex etc.) have been made and compared with their 3-day diaries.

As other studies have already pointed out (HealthFit, 2013), the accuracy of the BMI-level as indicator of excessive weight and/or obesity can be questioned as it misses more than half of the people with excessive fat. (Romero-Corral, et al., 2008) The case study done in this current research shows that even if riders have excessive weight according to the BMI-level, they can have an extremely high (obese) fat percentage. Therefore, it might occur that riders who do not have excessive weight and/or obesity according to their BMI-level are battling with a unhealthy fat percentage in real life. For example in this case, subject 2 has a BMI of 29.6 (excessive weight) and a fat percentage of 47.9% where 21%-33% is recommended (>39% Unhealthy).

6. Conclusion

This research was conducted to investigate whether there is a relationship between excessive weight and/or obesity and the overall lifestyle of the riders. The answer is yes.

The excessive weight and/or obesity amongst approximately 23% of the riders could be explained by their overall lifestyle.

It can be stated that riders in general have a lack of knowledge if it comes to nutritional intake. Especially the high intake of carbohydrate combined with the shortage in fat (BMJ, 1998) and protein can have highly negative effects. This type of diet can not only be a cause of excessive weight and/or obesity, it can also endanger their overall health. In addition, the overall low daily eating frequency concerning daily snacks as well as daily meals can be a crucial factor if it comes to the increase in BMI level.

In general the composition of the diet among riders has an lack of overall nutritional intake combined with a high amount of processed food. This chronic shortage of nutritional intake can cause a survival response in the human's body which leads to excessive storage of energy in e.g. forms of fat. (Gerard Sombroek, personal communication; Amigo & Fernandez, 2007) Moreover, the high amount of fast-food and soda can increase the risk at excessive weight and/or obesity. At least 20% of the riders has an excessive number of 2 or more weekly fast-food consumptions and/or 2 or more daily soda consumptions.

Also the quality of sleep can be a crucial factor if it comes to excessive weight and/or obesity amongst riders. Riders who scored an "adequate" quality (11%) had an increase in BMI level by 2.8 compared to those who scored "very good". Riders who scored "medium" (8%) had an increase in BMI level of 3.3 compared to those who scored "very good". In addition, 23% of the riders has two or more interruptions during their sleep, which might be causing the increase in BMI and the risk at excessive weight and/or obesity.

If it comes to sports other than riding, the results vary from no exercise at all to a few times a week. In general riders tend to put more effort in training their horse than their own physical fitness. This research showed that 60% of the riders do not practice daily cycling which causes a BMI rise of 2 compared to those who do cycle daily.

7. Recommendations

To gain more insight in the exact number of riders that has to deal with excessive weight and/or obesity and the possible cause, further research is recommended. It is advisable to replace the BMI level as indicator by fat percentage, muscle and visceral fat. In addition, the online questionnaire could be replaced by field research and the number of nutritional diaries should be increased.

7.1 Rider

In general it can be stated that riders tend to put more effort in the training and wellbeing of their horse than their own physical health and fitness. The following recommendations are supported by literature and the personal communication with an expert. (Gerard Sombroek, Personal Communication)

Riders tend to follow a very unbalanced diet with lots of carbohydrates and a shortage in fat and protein. By consuming less processed high-energy foods and more low energy density foods with a high fibre and water content the composition of their current diet can be improved. The shortage in fat and protein can be solved by consuming (raw) nuts, fish (preferable minnow), meat (preferable lean meat, chicken, turkey and steak), egg, quark or yoghurt. The overall lack of nutritional intake among riders can be resolved by increasing the frequency of daily eating by consuming at least three main meals and three (healthy) snacks a day. As a result, the overall nutritional intake will increase.

To fight the excessive weight and/or obesity among riders it is important to gain more knowledge about overall nutrition and nutritional intake. Lots of information regarding nutrition is provided through books and other forms of media, in addition it might be considerable to consult a nutritionist. Despite of the fact that BMI is still used as an indicator for excessive weight and/or obesity, it is recommended to check fat and muscle percentage as well, which is a more accurate indicator regarding excessive weight and/or obesity.

Concerning the overall fitness, it is advisable to increase the daily activity. Especially daily cycling can have a positive effect concerning weight loss. In addition, it is advisable to practice other forms of sports besides the horse riding. Especially high volume interval training (strength) can be highly effective regarding losing weight, in addition moderate to high intensity (cardio) interval workouts can help improving the overall fitness/stamina.

Furthermore, the overall quality of sleep and the number of sleep interruptions can be related to excessive weight and/or obesity. Riders seem to suffer from the side effects caused by insomnia and therefore need to tackle its causes. By increasing the overall activity, decrease the alcohol consumption and reduce stress the quality of sleep and number of sleep interruptions can be improved.

7.2 FitBewust

This research indicates that riders lack knowledge if it comes to nutritional intake and behaviours, especially the composition of their diet could use some improvements.

By organizing readings at riding stables and attaining horse related fairs, FitBewust is able to reach its new target market and inform/advise riders about the importance and quality of nutrition and the overall nutritional intake.

Furthermore, riders tend to put more effort in training their horse instead of their own physical fitness. As an addition FitBewust can help to accomplish overall better rider fitness by adapting current – or developing a specific physical training that covers all the muscles that are important during the equestrian sports. This new program can be promoted during readings and by the use of the website and Facebook page of FitBewust.

It is important that this specific fitness program covers aspects that will improve the overall (horse-riding) performance of the riders and thereby decrease the fall risk. Horse riding requires an overall fitness with aspects like balance, coordination, rhythm, strength and stamina but especially the core stability is required to be able to stay on your horse.

By developing this fitness program combined with the nutritional advice, FitBewust is able to create a happy athlete!

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Annex A

Het doel van deze (anonieme) enquête is inzicht te krijgen in de levensstijl van ruiters en de daarbij horende effecten op het huidige gewicht.

Door middel van de onderstaande vragen hopen wij een algemeen beeld te krijgen omtrent de mogelijke oorzaken van over- en/of ondergewicht bij ruiters, wat onder andere de gezondheid maar ook zeker de sportprestaties zou kunnen beïnvloeden.

Alle ingevulde gegevens zullen geheel vertrouwelijk en anoniem behandeld worden. Door deel te nemen aan deze enquête geeft u automatisch toestemming voor publicatie van deze (anonieme) resultaten.

Alvast heel erg bedankt voor uw medewerking!

Algemene Informatie:

1. Wat is uw postcode?
2. Wat is uw geslacht?
3. Wat is uw leeftijd?
4. Wat is uw lengte in centimeters?
5. Wat is uw gewicht in kilogram?

Eetpatroon:

6. Ontbijt u (normaal gesproken) elke dag?
 - a. Ja
 - b. Nee
7. Hoe vaak per dag nuttigt u een (hoofd)maaltijd?
8. Hoe vaak per dag nuttigt u tussendoortjes?
9. Hoeveel kilocalorieën denkt u dat u naar schatting dagelijks binnen krijgt?
10. Hoe vaak in de week eet u snoep (chocolade, drop, pepermunt, etc.)?
11. Hoe vaak in de week eet u fastfood? (bijv. patat, pizza, shoarma, kroketten e.d.)
12. Hoe vaak per dag consumeert u frisdranken?
13. En zijn deze dan light of gewoon?
14. Wanneer heeft u de neiging om te gaan eten? Als u;
 - a. Verdrietig bent
 - b. Geïrriteerd/boos bent

- c. Gestrest bent
- d. Anders, namelijk;

Levensstijl:

- 15. Rookt u?
 - a. Ja
 - b. Nee
- 16. Hoeveel sigaretten en/of shag rookt u per dag?
- 17. Hoeveel glazen alcohol consumeert u ongeveer per week? (1 glas = 125 ml)
- 18. Heeft u het afgelopen halfjaar gebruik gemaakt van drugs?
 - a. Ja
 - b. Nee
 - c. Tijdens feestjes
- 19. Zo ja, welke?
 - a. Softdrugs (o.a. marihuana, hasj)
 - b. Harddrugs (o.a. heroïne, cocaïne, XTC, GHB, amfetamine)
- 20. Hoeveel uur slaapt u normaal genomen per nacht?
- 21. Hoe vaak wordt u gemiddeld per nacht wakker?
- 22. Welke score zou u de kwaliteit van uw nachtrust geven op een schaal van 1-10 (waar 1 slecht en 10 uitmuntend is)?
- 23. Heeft u kinderen?
 - a. Ja
 - b. Nee
- 24. Zo ja, welke leeftijd(en) heeft (hebben) uw kind(eren)?
- 25. Welk beroep beoefent u?

Dagelijkse Activiteiten:

- 26. Maakt u dagelijks een wandeling? (bijv. naar de winkel) zo ja, hoelang wandelt u gemiddeld?
 - a. Ja
 - b. Nee
- 27. Zo ja, hoelang duurt deze wandeling gemiddeld?
- 28. Stapt u dagelijks op de fiets?
 - a. Ja
 - b. Nee
- 29. Zo ja, hoelang fietst u dan gemiddeld?
- 30. Bent u dagelijks actief in het huishouden?
 - a. Ja
 - b. Nee

31. Zo ja, hoeveel uur besteedt u hier aan?
32. Hoeveel uur per dag besteedt u gemiddeld aan activiteiten op stal naast het rijden van uw paard (zoals uitmesten, verzorging e.d.)?
33. Welke sport(en) beoefent u naast het paardrijden?
34. Hoeveel uur per dag besteedt u gemiddeld aan het beoefenen van een sport (naast paardrijden)?
35. Hoeveel uur per dag brengt u zittend door?
36. Hoeveel uur per dag besteedt u aan licht fysiek werk? (kassière, telefoniste e.d.)
37. Hoeveel uur per dag besteedt u aan zwaar fysiek werk? (bouwvakker, fysiotherapeut e.d.)

Paardrijden:

38. Hoeveel uur per week besteedt u gemiddeld aan het rijden van uw paard?
39. In welke discipline bent u voornamelijk actief?
 - a. Dressuur
 - b. Springen
 - c. Anders, namelijk
40. Welk niveau rijdt u? (als u op meerdere niveaus actief bent kunt u deze allemaal noemen)

Annex B

Allereerst heel erg bedankt voor uw verdere deelname! Wij willen u vragen om onderstaande punten voor de komende 3 dagen zo nauwkeurig mogelijk bij te houden in een “tijdschema” (zie bijlage).

Hierdoor zal onze analyse en het daarop volgende advies zo accuraat mogelijk zijn.

- Eetdagboek; alles wat u consumeert is van belang, van water tot een glas wijn en van fruit tot een stuk taart. (wat eet/drinkt u per dag, hoeveel (kg/ml) en wanneer (tijdschema))
- Als u rookt, hoeveel sigaretten nuttigt u? en wanneer? (tijdschema)
- Hoeveel uur besteed u deze dagen aan paardrijden? (hoelang, wanneer en welke discipline?)
- Hoeveel uur besteed u deze dagen aan het beoefenen van een sport, naast het paardrijden? (welke sport, hoelang, wanneer)
- Daarnaast zouden wij u graag willen vragen om uw vetpercentage eenmalig uit te rekenen, dit kan op www.vetpercentagemeten.nl

Alvast heel erg bedankt voor uw moeite en mocht u eventuele vragen/opmerkingen hebben dan helpen wij u graag!

Gegevens	Naam: Testpersoon 1	Deag: 1	Verpercentage: 20,5%		
	Wat: werk(zakewerk)	Hoelang: (geschat aantal uren/ minuten)	Wanneer: (geschat tijdstip)		
Daag: indeling	Werkdag (zie invul tabel)	Administratief medewerker	9 uur	8:00 tot 17:00	
	Wijze: dag				
	Wat: (discipline/sport)	Hoelang: (geschat aantal uren/ minuten)	Wanneer: (geschat tijdstip)		
Beweging	Paardrijden	Bess Western	45 minuten	19:00 tot 19:45	
	(overige) Sport	Buikspieroefeningen	5 minuten	22:00 tot 22:05	
	Wat: (voedselgroep op de fiets, open met de hand etc.)	Hoelang: (geschat aantal uren/ minuten)	Wanneer: (geschat tijdstip)		
	Dagelijkse Beweging	Bezig op en om stad	30 minuten	20:00 tot 20:30	
Inactiviteit	Wat: (film kijken, boek lezen, kamorwerk etc.)	Hoelang: (geschat aantal uren/ minuten)	Wanneer: (geschat tijdstip)		
	Aerial sedentaire (zittende) uren	Kamoorwerk gezellig zitten bij thuis komst, serie kijken, eten	11,5 uur	8:00 tot 18:30 en 21:00 tot 22:00	
Endagboek	Wat: (werk, beschrijving van geconsumeerd product)	Hoereel: (geschat aantal ml/g/suks)	Wanneer: (geschat tijdstip)	Waar: (thuis, station, eetkamer etc.)	Waarom: (omleiding: bijv. honger, uiteten met familie etc.)
Eten					
	Ontbijt:	canbrijde weijgh (1) an muesli bar	1 st.	8:00 kamoor	ontbijt
	Tussendoor	wasas sesam cracker	1 st.	10:00 kamoor	knorende maag
		kielbillet	2 plakjes		
	Lunch	canbrijde weijgh (1) an muesli bar	1 st.	12:30 kamoor	lunch
	Tussendoor	wasas sesam cracker	1 st.	15:00 kamoor	knorende maag
		kielbillet	2 plakjes		
	Avondeten	Paprika	halve paprika	18:00 thuis	avondeten
		Couquette	halve couquette		
		Krielijes	50 gr		
		Koolvis	100 gr		
	Tussendoor	Muesli	25 gr	21:00 thuis	knorende maag
		hoghurt	50 gr		
	Wat: (werk, beschrijving van geconsumeerd product)	Hoereel: (geschat aantal ml/g/suks)	Wanneer: (geschat tijdstip)	Waar: (thuis, station, eetkamer etc.)	Waarom: (omleiding: bijv. honger, uiteten met familie etc.)
Drinken					
	Ontbijt:	thee - zonnatura 20 kruiden	4 theelepels op 1 kop water	8:00 kamoor	om vocht binnen te krijgen
		thee - zonnatura 20 kruiden	4 theelepels op 1 kop water	8:30 kamoor	om vocht binnen te krijgen
		thee - zonnatura 20 kruiden	4 theelepels op 1 kop water	10:00 kamoor	om vocht binnen te krijgen
		thee - zonnatura 20 kruiden	4 theelepels op 1 kop water	11:30 kamoor	om vocht binnen te krijgen
	Lunch	thee - zonnatura 20 kruiden	4 theelepels op 1 kop water	14:30 kamoor	om vocht binnen te krijgen
		thee - zonnatura 20 kruiden	4 theelepels op 1 kop water	15:30 kamoor	om vocht binnen te krijgen
	Avondeten	ander half liter water met - zonnatura rooibos korrelthee	4 theelepels op 1 kop water	vanaf 18:00 verdeeld over de avond tot 22:00 thuis	om vocht binnen te krijgen
Alcohol		Wat: (werk, beschrijving van geconsumeerd product)	Hoereel: (geschat aantal ml/g/suks)	Waar: (thuis, station, eetkamer etc.)	Waarom: (omleiding: bijv. honger, uiteten met familie etc.)
Roken		Wat: (sigaret/rook)	Hoereel: (stuk)	Waar: (thuis, station, eetkamer etc.)	Waarom: (omleiding)
		int			
Dugs		Wat: (werk, beschrijving van geconsumeerd product)	Hoereel: (ml/g/suks)	Wanneer: (geschat tijdstip)	Waar: (thuis, station, eetkamer etc.)
	nee	int			

	Naam: Testpersoon 1		Dag: 2			
<u>Gegevens</u>						
	Wat (werk/activiteit)	Hoelang (geschat aantal uren/minuten)	Wanneer (geschat tijdstip)			
<u>Dag indeling</u>	Werkdag (zie invul label)	Administratief medewerkster	9 uur	8:15 tot 17:15		
	Vrije dag					
	Wat (discipline/sport)	Hoelang (geschat aantal uren/minuten)	Wanneer (geschat tijdstip)			
<u>Beweging</u>	Pardriden	Basis western	nvt	nvt		
	(overige) Sport	30 days AB challenge (play store app) day 1	5 minuten	22:00 tot 22:05		
	Wat (hoofdschappen op de fiets, lopen met de hond etc)	Hoelang (geschat aantal uren/minuten)	Wanneer (geschat tijdstip)			
	Dagelijkse Beweging	Bezig op en om stal, losspioen paard	50 minuten	19:30 tot 20:20		
<u>Inactiviteit</u>	Wat (film kijken, boek lezen, kantoor werk e.d.)	Hoelang (geschat aantal uren/minuten)	Wanneer (geschat tijdstip)			
	Aantal sedentaire (zittende) uren	Kantoor werk, eten	12 uur	8:15 tot 19:30 en 21:30 tot 22:00		
<u>Bedagboek</u>	Wat (merk, beschrijving van geconsumeerd product)	Hoeveel (geschat aantal ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eettent etc.)	Waarom (aanleiding: bijv. honger, uiten, met familie etc.)	
<u>Bien</u>						
	Ontbijt	cambridge weight plan muesli bar	1 st		8:00 kantoor	ontbijt
	Tussendoor	Cream Cracker	1 st		12:00 kantoor	dulzelig
		kipfilet	1 pakje			
	Lunch	Cambridge weight plan Chocolate shake	1 st		12:30 kantoor	lunch
	Tussendoor	waso sesam cracker	1 st		15:00 kantoor	knorrende maag
		kipfilet	2 plakjes			
	Avondeten	Aardappels	100 gr		18:00 thuis	avondeten
		Doperwten	250 gr			
		slavink	1st			
		sju	1 halve eetlepel			
	Tussendoor	Muesli	25 gr		21:30 thuis	knorrende maag
		Yoghurt	50 gr			
	Wat (merk, beschrijving van geconsumeerd product)	Hoeveel (geschat aantal ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eettent etc.)	Waarom (aanleiding: bijv. honger, uiten, met familie etc.)	
<u>Drinken</u>						
	Ontbijt	thee - zomatura 20 kruiden	4 theelepels op 1 kop water		8:00 kantoor	om vocht binnen te krijgen
		thee - zomatura 20 kruiden	4 theelepels op 1 kop water		8:30 kantoor	om vocht binnen te krijgen
		thee - zomatura 20 kruiden	4 theelepels op 1 kop water		9:30 kantoor	om vocht binnen te krijgen
		thee - zomatura 20 kruiden	4 theelepels op 1 kop water		10:30 kantoor	om vocht binnen te krijgen
		thee - zomatura 20 kruiden	4 theelepels op 1 kop water		11:15 kantoor	om vocht binnen te krijgen
	Lunch	thee - zomatura 20 kruiden	4 theelepels op 1 kop water		15:00 kantoor	om vocht binnen te krijgen
		thee - zomatura 20 kruiden	4 theelepels op 1 kop water		16:30 kantoor	om vocht binnen te krijgen
	Avondeten	ander half liter water met - zomatura rooibos korreltjes thee	4 theelepels op 1 kop water	vanaf 18:00 verdeeld over de avond tot 22:00 thuis		om vocht binnen te krijgen
<u>Alcohol</u>	Wat (merk, beschrijving van geconsumeerd product)	Hoeveel (geschat aantal ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eettent etc.)	Waarom (aanleiding: bijv. honger, uiten, met familie etc.)	
	nvt					
<u>Roken</u>	Wat (sigaret/shag)	Hoeveel (stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eettent etc.)	Waarom (aanleiding)	
	nvt					
<u>Drugs</u>	Wat (merk, beschrijving van geconsumeerd product)	Hoeveel (ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eettent etc.)	Waarom (aanleiding)	
	Ja/Nee	nvt				

<u>Gegevens</u>	Naam: Testperson 1			Day 3			
<u>Werkdag (zie invul label)</u>	Wat (werklocatie)	Wat (werklocatie)	Hoelang (geschat aantal uren/ minuten)	Wanneer (geschat tijdstip)			
<u>Vrije dag</u>	Administratief medewerster		9 uur	8:15 tot 17:15			
<u>Beweging</u>	Wat (discipline sport)	Hoelang (geschat aantal uren/ minuten)	Wanneer (geschat tijdstip)				
<u>Paardrijden</u>	Basis western	45 minuten	20:00 tot 20:45				
<u>(overige) Sport</u>	30 days AB challenge (day store app) day 2	5 minuten	22:00 tot 22:05				
	Wat (voedschorten op de fiets, lopen met de hond etc)	Hoelang (geschat aantal uren/ minuten)	Wanneer (geschat tijdstip)				
<u>Dagelijkse Beweging</u>	Bezig op en om stal	30 minuten	21:00 tot 21:30				
<u>Inactiviteit</u>	Wat (film kijken, boek lezen, kamfor werk etc)	Hoelang (geschat aantal uren/ minuten)	Wanneer (geschat tijdstip)				
<u>Aantal sedentaire (zittende) uren</u>	Kamfor werk, eten serie kijken	11,5 uur	8:15 tot 19:45				
<u>Eetdagboek</u>	Wat (milk, beschrijving van geconsumeerd product)	Hoeveel (geschat aantal ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eeten etc.)	Waarom (omleiding: blij, honger, uiteten, met familie etc.)		
<u>Eten</u>							
	Ontbijt	cambridge weight plan muesli bar	1 st		8:00 kamfor	ontbijt	
	Tussendoor	geen					
	Lunch	cambridge weight plan chocolate shake	1 st		12:30 kamfor	lunch	
	Tussendoor	Cream Cracker	1 st		13:30 kamfor	knorende maag	
	Avondeten	knorr wereldgerecht turkse Durum	2 st.		18:30 thuis	avondeten	
		chili sauce voor kipgerechten	2 theelepels				
	Tussendoor	Muesli	25 gr		19:30 thuis	knorende maag	
		Yoghurt	50 gr				
<u>Drinken</u>	Wat (milk, beschrijving van geconsumeerd product)	Hoeveel (geschat aantal ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eeten etc.)	Waarom (omleiding: blij, honger, uiteten, met familie etc.)		
	Ontbijt	thee - zonnatura 20 kruiden	4 theelepels op 1 kop water		9:00 kamfor	om vocht binnen te krijgen	
		thee - zonnatura 20 kruiden	4 theelepels op 1 kop water		9:30 kamfor	om vocht binnen te krijgen	
		thee - zonnatura 20 kruiden	4 theelepels op 1 kop water		10:00 kamfor	om vocht binnen te krijgen	
		thee - zonnatura 20 kruiden	4 theelepels op 1 kop water		11:00 kamfor	om vocht binnen te krijgen	
		thee - zonnatura 20 kruiden	4 theelepels op 1 kop water		12:00 kamfor	om vocht binnen te krijgen	
	Lunch	thee - zonnatura 20 kruiden	4 theelepels op 1 kop water		14:30 kamfor	om vocht binnen te krijgen	
		thee - zonnatura 20 kruiden	4 theelepels op 1 kop water		15:00 kamfor	om vocht binnen te krijgen	
		thee - zonnatura 20 kruiden	4 theelepels op 1 kop water		16:00 kamfor	om vocht binnen te krijgen	
		thee - zonnatura 20 kruiden	4 theelepels op 1 kop water		kamfor	om vocht binnen te krijgen	
	Avondeten	ander half liter water met - zonnatura roolbos korieltjes thee	4 theelepels op 1 kop water	vanaf 18:00 verdeeld over de avond tot 22:00 thuis		om vocht binnen te krijgen	
<u>Alcohol</u>	Wat (milk, beschrijving van geconsumeerd product)	Hoeveel (geschat aantal ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eeten etc.)	Waarom (omleiding: blij, honger, uiteten, met familie etc.)		
<u>Roken</u>	Wat (sigaret, shag)	Hoeveel (stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eeten etc.)	Waarom (omleiding)		
	nvt						
<u>Drugs</u>	Wat (milk, beschrijving van geconsumeerd product)	Hoeveel (ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eeten etc.)	Waarom (omleiding)		
	ja/nee	nvt					

Gegevens	Naam: Testpersoon 2	Dag: 1	Verpercentage: 47,9%	
	Wat (werk/activiteit)	Hoelang (geschat aantal uren/minuten)	Wanneer (geschat tijdstip)	
Dag, indeling	Werkdag (zie invul tabel)	thuiswerken, administratief rapporteren, huisbezoek	8:30 tot 16:30	
	Vrije dag			
	Wat (discipline/sport)	Hoelang (geschat aantal uren/minuten)	Wanneer (geschat tijdstip)	
Beweging	Paardrijden	langereen/handwerk/grondwerk	45	18:00
	(overige) Sport	home trainer	30	8:30
	Wat (boodschappen op de fiets, lopen met de hond etc)	Hoelang (geschat aantal uren/minuten)	Wanneer (geschat tijdstip)	
	Dagelijkse Beweging	stallen uitmesten	20	19:00
		fietsen naar stal	30	17:30
Inactiviteit	Wat (film kijken, boek lezen, kantoor werk e.d.)	Hoelang (geschat aantal uren/minuten)	Wanneer (geschat tijdstip)	
	Aantal sedentaire (zittende) uren	kantoor werk, autorijden, tv kijken	8uren	
Eetdagboek	Wat (merk, beschrijving van geconsumeerd product)	Hoeveel (geschat aantal ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eettent etc.)
	Ontbijt	volkoren boterhammen met kaas	4	9:30 thuis
	Tussendoor	notenreep	1stuk, 30gr	11:40 thuis
	Lunch	Cup a Soup Noodles	1stuk, 70gr	13:30 thuis
	Tussendoor			
	Avondeten	Nosi	70 gr	18:30 thuis
		nosivlees	75 gr	
		nosgroenten	100 gr	
	Tussendoor	sinaasappel		21:00 thuis
	Wat (merk, beschrijving van geconsumeerd product)	Hoeveel (geschat aantal ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eettent etc.)
	Ontbijt	koffie senseopads mocca	1beker	9:30 thuis
	Tussendoor	koffie senseopads mocca	1beker	11:45 thuis
	Lunch	melk en fruit	1beker	13:30 thuis
	Tussendoor	koffie	1beker	16:00 thuis
	Tussendoor	7-up	1glas	18:00 thuis
	Avondeten			
	Tussendoor	koffie	1beker	20:00 thuis
Alcohol	Ik drink niet	Wat (merk, beschrijving van geconsumeerd product)	Hoeveel (geschat aantal ml/g/stuks)	Wanneer (geschat tijdstip)
Roken		Wat (signaal/sign)	Hoeveel (stuk)	Wanneer (geschat tijdstip)
	nee			
Drugs		Wat (merk, beschrijving van geconsumeerd product)	Hoeveel (ml/g/stuks)	Wanneer (geschat tijdstip)
	Nee			Waar (thuis, station, eettent etc.)
				Waarom (aanleiding: pijn, honger, uiten, met familie etc.)

<u>Gegevens</u>	Naam: Testpersoon 2		Day 2				
		<u>Wat (werk/activiteit)</u>	<u>Hoelang</u> (geschat aantal uren/minuten)	<u>Wanneer</u> (geschat tijdstip)			
<u>Day Inleiding</u>	<u>Werkdag (zie invul tabel)</u>	vergadering, huisbezoek, kantoor werk	8 kantoor(uren)				
	<u>Vrije dag</u>						
		<u>Wat (activiteit/goed)</u>	<u>Hoelang</u> (geschat aantal uren/minuten)	<u>Wanneer</u> (geschat tijdstip)			
<u>Beweging</u>	<u>Paardrijden</u>	handwerken/ louteren/ grondwerk	30	19:30			
	<u>(overige) Sport</u>	niet					
		<u>Wat (voedschappen op de fiets, lopen met de hond etc.)</u>	<u>Hoelang</u> (geschat aantal uren/minuten)	<u>Wanneer</u> (geschat tijdstip)			
	<u>Dagelijkse Beweging</u>	stalen uitmesten	20	20:00			
		<u>Wat (film kijken, boek lezen, kantoor werk e.d.)</u>	<u>Hoelang</u> (geschat aantal uren/minuten)	<u>Wanneer</u> (geschat tijdstip)			
<u>Inactiviteit</u>		kantoor werk, tv kijken	5 overdag en 3 avonds na 21:00				
<u>Eetdagboek</u>	<u>Aantal sedentaire (zittende) uren</u>	<u>Wat (milk, beschrijving van geconsumeerd product)</u>	<u>Hoeverel</u> (geschat aantal ml/g/stuks)	<u>Wanneer</u> (geschat tijdstip)	<u>Waar</u> (thuis, station, eettent etc.)	<u>Waarom</u> (aanleiding: blij, honger, uiteten, met familie etc.)	
<u>Eten</u>							
	Ontbijt	ontbijtsake	500ml		8:30 onderweg in de auto	trek	
	Tussendoor	granenreep	1 stuk, 30 gr		10:30 tijdens vergadering	trek	
	Tussendoor	granenreep	1 stuk, 30 gr		12:00 onderweg naar volgende afspraak	trek	
	Lunch	sausjesbroodje	1 stuk		14:30 onderweg in de auto	trek	
		krentenbol met kaas	1 stuk		14:30 onderweg in de auto	trek	
	Tussendoor	plakje cake	1 stuk		16:00 thuis	trek	
	Tussendoor	appel	1 stuk		16:15 thuis	zijn in fruit	
	Avondeten	turkse pizza	1 stuk		18:00 bij vriendin thuis	trek	
		groenten (witte kool rode kool, ui)	150 gr	idem			
		fewi kaas	20g	idem			
		knoflooksaus	3 eetlepels	idem			
	Tussendoor	sinaasappel	1 stuk		21:30 thuis	zijn in iets	
	Tussendoor						
		<u>Wat (milk, beschrijving van geconsumeerd product)</u>	<u>Hoeverel</u> (geschat aantal ml/g/stuks)	<u>Wanneer</u> (geschat tijdstip)	<u>Waar</u> (thuis, station, eettent etc.)	<u>Waarom</u> (aanleiding: blij, honger, uiteten, met familie etc.)	
<u>Drinken</u>							
	Ontbijt	koffie uit automaat	2bekers		9:15 vergadering kantoor	zijn in	
	Tussendoor	koffie uit automaat	1 beker		9:45 vergadering kantoor	zijn in	
	Tussendoor	koffie uit automaat	1 beker		10:15 vergadering kantoor	zijn in	
	Lunch	cappuccino	2 kleine bekers		12:00 kantoor	zijn in	
	Tussendoor	milk en fruit	1 flesje 30ml		14:30 onderweg in de auto	zijn in	
	Tussendoor						
	Avondeten	koffie senseopads dark	1 beker		bij vriendin thuis		
	Tussendoor	thee, caramelsmaak	1 beker		21:30 thuis	zijn in	
<u>Alcohol</u>		<u>Wat (milk, beschrijving van geconsumeerd product)</u>	<u>Hoeverel</u> (geschat aantal ml/g/stuks)	<u>Wanneer</u> (geschat tijdstip)	<u>Waar</u> (thuis, station, eettent etc.)	<u>Waarom</u> (aanleiding: blij, honger, uiteten, met familie etc.)	
<u>Roken</u>	<u>ik drink niet</u>	<u>Wat (sigaret/rook)</u>	<u>Hoeverel</u> (stuk)	<u>Wanneer</u> (geschat tijdstip)	<u>Waar</u> (thuis, station, eettent etc.)	<u>Waarom</u> (aanleiding)	
	<u>ne</u>						
<u>Drugs</u>		<u>Wat (milk, beschrijving van geconsumeerd product)</u>	<u>Hoeverel</u> (ml/g/stuks)	<u>Wanneer</u> (geschat tijdstip)	<u>Waar</u> (thuis, station, eettent etc.)	<u>Waarom</u> (aanleiding)	
	Nee						

Eetdagboek		Wat (merk, beschrijving van geconsumeerd product)	Hoeveel (geschat aantal ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eettent etc.)	Waarom (aankleding, bijv. honger, uiteren, met familie etc.)
Eten						
	Ontbijt	boterhammm	3		9.30 thuis	zin in
		appel	1		9.50 thuis	zin in
	Tussendoor	muslireep	1 stuk, 30gr		10.45 onderweg	zin in
	Lunch	kabbeljouwfiets van visdoer	200 gr		13.00 thuis	zin in
		raijgottensaus	3 eetlepels		13.00 thuis	zin in
	Tussendoor	paaseitjes	4 stuks		15.00 thuis	zin in
	Avondeten	krieborndappelen	25gr		18.30 thuis	trek
		rode kool	100 gr		18.30 thuis	trek
		schinksel	125 gr		18.30 thuis	trek
		appelmoes	3 eetlepels		18.30 thuis	trek
	Tussendoor					
		Wat (merk, beschrijving van geconsumeerd product)	Hoeveel (geschat aantal ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eettent etc.)	Waarom (aankleding, bijv. honger, uiteren, met familie etc.)
Drinken						
	Ontbijt	kofie	1 beker		9.30 thuis	zin in
	Tussendoor	kofie	1 beker		10.00 thuis	zin in
	Lunch	melk	1 beker		13.00 thuis	zin in
	Tussendoor	7-up	1 glas		19.00 thuis	zin in
	Avondeten					
	Tussendoor	thee	2 bekers		20.00 thuis	zin in
Alcohol		Wat (merk, beschrijving van geconsumeerd product)	Hoeveel (geschat aantal ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eettent etc.)	Waarom (aankleding, bijv. honger, uiteren, met familie etc.)
Roken		Wat (sigaret, shag)	Hoeveel (stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eettent etc.)	Waarom (aankleding)
	nee					
Drugs		Wat (merk, beschrijving van geconsumeerd product)	Hoeveel (ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eettent etc.)	Waarom (aankleding)
	Nee					

		Wat (discipline sport)	Hoelang (geschat aantal urey/muuer)	Wanneer (geschat tijdstip)		
<u>Beweging</u>	Pardrijden	dressuur	20 min opwarmen 20 intensief, 20 min uitr 8.00			
	(overige) sport					
		Wat (voedschrijven op de fiets, lopen met de hond etc)	Hoelang (geschat aantal urey/muuer)	Wanneer (geschat tijdstip)		
	Dagelijkse Beweging	trap lopen, op de fiets naar werk	25-30 min	voor werk na werk, iedere keer dat ik thuis uit ga traplopen dus vandaag 6x		
<u>Inactiviteit</u>		Wat (fijnkleen, boek lezen, kantoor werk e.d.)	Hoelang (geschat aantal urey/muuer)	Wanneer (geschat tijdstip)		
	Aantal sedentaire (zittende) uren	tv	3 uur			
<u>Eetdataboek</u>		Wat (mek, beschrijving van geconsumeerd product)	Hoeverel (geschat aantal ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, restaurant etc.)	Waarom (omleiding, hyl, honger, uitleen, met familie etc.)
Eten						
	Ontbijt	<i>volle yoghurt</i>	<i>250 ml</i>	7.30	thuis	ontbijt
		<i>ah bakst musli</i>	<i>40-50 gr</i>			
	Tussendoor	<i>sultana ah eigen merk</i>	<i>3 stuks</i>		13 werk	honger
	Lunch	<i>croissantje</i>	<i>1 stuks</i>	15.30	werk	lunch(ish)
	Tussendoor	<i>thincisp wasa</i>	<i>3x</i>	18.00	werk	honger
	Avondeten	<i>over aardappeltjes</i>	<i>80 g</i>			
		<i>heten stoofpotje</i>	<i>100 g</i>	19.30	thuis	avondmaad
		<i>1/2gourgette</i>				
		<i>1/2prei, 1aaprika, 5 kastanje chomignons</i>				
	Tussendoor					
		Wat (mek, beschrijving van geconsumeerd product)	Hoeverel (geschat aantal ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, restaurant etc.)	Waarom (omleiding, hyl, honger, uitleen, met familie etc.)
Drinken						
	Ontbijt	<i>limonade ah eigenmerk</i>	<i>0.5L</i>	7.30	thuis	ontbijt
	Tussendoor	<i>limonade ah eigen merk</i>	<i>0.5L</i>	8.00	thuis	dorst
	Tussendoor	<i>chocolademelk uit een machine</i>	<i>0.4L</i>	10.00	stal	dorst
	Lunch	<i>limonade ah eigen merk</i>	<i>0.5L</i>	12.00	thuis	dorst
	Tussendoor	<i>limonade ah eigen merk</i>	<i>0.4L</i>	13.00	werk	dorst
	Tussendoor	<i>limonade ah eigen merk</i>	<i>0.4L</i>	15.30	werk	dorst
	Avondeten	<i>water</i>	<i>0.2L</i>	19.30	thuis	avondeten
	Tussendoor	<i>thee stervenunt</i>	<i>0.25L</i>	21.00	thuis	omdat ik an
Alcohol		Wat (mek, beschrijving van geconsumeerd product)	Hoeverel (geschat aantal ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, restaurant etc.)	Waarom (omleiding, hyl, honger, uitleen, met familie etc.)
Roken		Wat (sigaret/roog)	Hoeverel (stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, restaurant etc.)	Waarom (omleiding)
Drugs		Wat (mek, beschrijving van geconsumeerd product)	Hoeverel (ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, restaurant etc.)	Waarom (omleiding)
	ja/nee					

Gegevens	Naam: Testpersoon 3	Email:	Dag: 2			
Dag indeling	Werkdag (zie invul tabel)	staan lopen	6 uur		dec-18	
	Vrije dag					
Beweging	Paardrijden	Wet (discipline/sport)	Hoelang (geschat aantal uren/minuten)	Wanneer (geschat tijdstip)		
	dressuur		10 min opwarmen, 10 min intensief, leuke 9:00			
	(overige) Sport					
Inactiviteit	Dagelijkse Beweging	Wat (bloedschijngen op de fiets, lopen met de hond etc)	Hoelang (geschat aantal uren/minuten)	Wanneer (geschat tijdstip)		
	traplopen (zie dag 1)		2 min per keer! (+ 70 treden)	4x per dag		
	Wat (film kijken, boek lezen, kantoor werk e.d.)	Hoelang (geschat aantal uren/minuten)	Wanneer (geschat tijdstip)			
	Aantal sedentaire (zittende) uren	tv kijken	3 uur	20:00		
Eetdagboek	Wat (merk, beschrijving van geconsumeerd product)	Hoeveel (geschat aantal ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eettent etc.)	Waarom (aanleiding: bijk, honger, uiteten, met familie etc.)	
Eten						
	Ontbijt	milde mogere yoghurt oh bostc muesli	250 ml 40-50 gr	7:30	thuis	ontbijt
	Tussendoor	appel	1 stuks	11.00	thuis	trek
	Lunch	boterham	1x	11.15	thuis	lunch
		gebakken ei	1x			
		beetje zout en peper				
	Tussendoor	thin crisps wasa	6x	15.30	werk	trek
		sultana oh eigen merk	3 stuks		13 werk	honger
	Avondeten	rijst	80 g	19.30	thuis	avondmaal
		gemarineerde kip (honing, sesam zondjes, chinese fivespice)	1 borst			
		halve courgette, halve prei, paprika	200 gr +-			
		kerriesaus (zelfgemaakt zonder melk)	5 eetlepels +			
	Tussendoor					
	Wat (merk, beschrijving van geconsumeerd product)	Hoeveel (geschat aantal ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eettent etc.)	Waarom (aanleiding: bijk, honger, uiteten, met familie etc.)	
Drinken						
	Ontbijt	limonade ah eigenmerk	0,5l	7:30	thuis	ontbijt
	Tussendoor	limonade ah eigen merk	0,5l	8:00	thuis	dorst
	Lunch	limonade ah eigen merk	0,5l	12:00	thuis	dorst
	Tussendoor	limonade c1000 eigen merk	0,4l	13:00	werk	dorst
	Tussendoor	limonade c1000 eigen merk	0,4l	15:30	werk	dorst
	Avondeten					
	Tussendoor	chocolademelk a la MOI (bestaand uit: melkpoeder, poedersu 200 ml	21.30		thuis	zín in
Alcohol		Wat (merk, beschrijving van geconsumeerd product)	Hoeveel (geschat aantal ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eettent etc.)	Waarom (aanleiding: bijk, honger, uiteten, met familie etc.)
Roken		Wat (sigaret/shag)	Hoeveel (stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eettent etc.)	Waarom (aanleiding)
Drugs		Wat (merk, beschrijving van geconsumeerd product)	Hoeveel (ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eettent etc.)	Waarom (aanleiding)
	Ja/Nee					

<u>Gegevens</u>	Naam: Testperson 3	Email:	De: 3			
	Werkdag (zie invul tabel)	Wat (werk/activiteit)	Hoelang (geschat aantal uren/minuten)	Wanneer (geschat tijdstip)		
<u>De Indeling</u>						
	Vrije dag	schoonmaken/opruimen sporten etc	2 uur	14.00		
		Wat (fysieke/soort)	Hoelang (geschat aantal uren/minuten)	Wanneer (geschat tijdstip)		
<u>Beweging</u>	Paardrijden	dressuur voor forestboot	1,5 uur		10 jan	
	(overige) Sport	bullspanier training	20 min	13.00		
		Wat (voedschappen op de fiets, lopen met de hond etc)	Hoelang (geschat aantal uren/minuten)	Wanneer (geschat tijdstip)		
	Dagelijkse Beweging	tralen lopen	2 min per keer	4x per dag		
<u>Inactiviteit</u>		Wat (film kijken, boek lezen, kamor werk etc.)	Hoelang (geschat aantal uren/minuten)	Wanneer (geschat tijdstip)		
	Aantal sedentaire (zittende) uren	tv kijken	5 uur	16.00		
<u>Eetdagboek</u>		Wat (merk, beschrijving van geconsumeerd product)	Hoeverel (geschat aantal ml/g stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eettent etc.)	Waarom (aanleiding: hijk, honger, uiteten met familie etc.)
<u>Eten</u>						
	Ontbijt	mlke-mager yoghurt oh basic muesli	250 ml 40-50 gr	7.00	thuis	ontbijt
	Tussendoor					
	lunch	gekookte rijtje cherry tomaties	1 stuks 7 stuks	13.00	thuis	lunch
		konkommer	5 cm ongeveer			
	Tussendoor	mierob	1 stuks	14.00	thuis	trek
	Avondeten	broccoli soep	1 kom + 200 ml	18.00	vrienden1	avondeten
		tobotto	2 plakjes			
		quiche (spinazie, champignons, ei, prei, broccoli)	1/8 van 32 cm springvorm (VEEL)			
		gebaktoeufles (prei van de winkel)	3x			
	Tussendoor					
<u>Drinken</u>		Wat (merk, beschrijving van geconsumeerd product)	Hoeverel (geschat aantal ml/g stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eettent etc.)	Waarom (aanleiding: hijk, honger, uiteten met familie etc.)
	Ontbijt	limonade ah! eigenmerk	0,5 L	7.30	thuis	ontbijt
	Tussendoor					
	lunch	limonade ah! eigen merk	0,5 L	12.00	thuis	dorst
	Tussendoor					
	Avondeten					
	Tussendoor					
<u>Alcohol</u>		Wat (merk, beschrijving van geconsumeerd product)	Hoeverel (geschat aantal ml/g stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eettent etc.)	Waarom (aanleiding: hijk, honger, uiteten met familie etc.)
	Ontbijt					
	Tussendoor					
	Lunch					
	Tussendoor					
	Avondeten					
	Tussendoor					
		konkommer cocktail (een of ander alcoholische likkerij, k2x)	1x	va 8.15	bij vrienden thuis	omdat kan, en dat is tijd voor een cocktaillight XD
	Tussendoor	mogito (met dubbel rum)				
		iets met blue curacao	shotje alcohol			
		iets met malibu	shotje alcohol			
<u>Roken</u>		Wat (soort/soort)	Hoeverel (stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eettent etc.)	Waarom (aanleiding)
<u>Druis</u>		Wat (merk, beschrijving van geconsumeerd product)	Hoeverel (ml/g stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eettent etc.)	Waarom (aanleiding)
	Ja/Nee					

Gegevens	Naam: Testpersoon 4		Dag: 1	Verpercentage: 15,92%		
	Het kan zijn dat op deze dag de tijden niet geheel kloppen. Dit heb ik niet precies bijgehouden.					
		Wat (werk/activiteit)	Hoelang (geschat aantal uren/minutes)	Wanneer (geschat tijdstip)		
Dag, Inleiding	Werkdag (zie invul tabel)	Werkdag op stal	9,5: 08:00 - 17:30			
	Wat (discipline/sport)		Wanneer (geschat tijdstip)			
Beweging	Paardrijden	Zadelmak maken/oung paard rijden	Rond 14:00			
		Longeren	Rond 10:00 en 13:30			
		Paarden buiten en binnen zetten	Rond 09:00 en 16:00			
		Stallen uitmesten en opstroomen	Rond 11:00			
	(overige) Sport	Krachttraining biceps, triceps, schouders en buik	Rond 22:00			
		Wat (aardoudingen op de fiets, lopen met de hond etc)	Hoelang (geschat aantal uren/minutes)	Wanneer (geschat tijdstip)		
	Dagelijkse Beweging	Fietsen	50 min	Rond 8:00, 12:00, 12:30, 17:30, 20:00 en 21:30		
		Paarden voeren	30 min	Rond 08:00, 16:30 en 20:00		
		Wat (film kijken, boek lezen, kantoor werk e.d.)	Hoelang (geschat aantal uren/minutes)	Wanneer (geschat tijdstip)		
Inactiviteit	Aantal sedentaire (zittende) uren	Koffie drinken en eten	90 min	Rond 8:45, 12:00 en 15:00		
		Tv kijken	30 min	21:30 - 22:00		
		Boek lezen	30 min	23:30 - 00:00		
Eetdagboek		Wat (merk, beschrijving van geconsumeerd product)	Hoeverel (geschat aantal ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, stroom, eettent etc.)	Waarom (aanleiding, bliv, honger, uiteen, met familie etc.)
Eten						
	Ontbijt	Van Vegel'aar Ontbijtcrackers	2 pakjes met 2 crackers		8:30 Stal/Werk	Honger/ontbijt
	Lunch	Jumboarnaalen Vis Mariné	50 gram		12:00 Stal/Werk	Honger/lunch
		Sunnisticks Quail Fisk	6 st			
		Kaasschnitzel's Viverra	2 st			
		Grietse rauwkostsalade	200 gram			
	Avondeten	Pandarijst lassie	70 gram		18:00 Thuis	Honger/avondeten
		Tuinbonen Hak	100 gram			
		Wortelen + Doperwtien Hak(?)	400 gram			
	Tussendoor	Kellig's Confiales zonder melk	1 schaaltje		20:30 Thuis	Trek
		Gezoute Crackers Crusty Coc	1 pakje, 75gram		22:30 Thuis	Trek, behoefte aan zout
		Wat (merk, beschrijving van geconsumeerd product)	Hoeverel (geschat aantal ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, stroom, eettent etc.)	Waarom (aanleiding, bliv, honger, uiteen, met familie etc.)
Drinken						
	Ontbijt	Koffie met 1oeitje	2 kopjes		8:45 Stal/Werk	Bij het ontbijt
	Tussendoor	Water	Gas 200ml		11:00 Stal/Werk	Dorst
	Lunch	Alpro Soya Drink Macratio	Gas 200ml		12:00 Stal/Werk	Dorst
	Tussendoor	Koffie met 1oeitje	2 kopjes		15:00 Stal/Werk	Koffietijd
	Avondeten	Vitaminie C bruistablet met spa rood	200 ml		18:00 Thuis	Dorst
	Tussendoor	Spa rood	Ong 1 liter	Tussen 18:00 - 00:00	Thuis	Dorst
Alcohol	NVT	Wat (merk, beschrijving van geconsumeerd product)	Hoeverel (geschat aantal ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, stroom, eettent etc.)	Waarom (aanleiding, bliv, honger, uiteen, met familie etc.)
Roken	NVT	Wat (signet/slag)	Hoeverel (stuks)	Wanneer (geschat tijdstip)	Waar (thuis, stroom, eettent etc.)	Waarom (aanleiding)
Drugs	NVT	Wat (merk, beschrijving van geconsumeerd product)	Hoeverel (ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, stroom, eettent etc.)	Waarom (aanleiding)
	Nee					

<u>Eetdagboek</u>		<u>Wat (merk, beschrijving van geconsumeerd product)</u>	<u>Hoewel (geschat aantal ml/g stuks)</u>	<u>Wanneer (geschat tijdstip)</u>	<u>Waar (thuis, station, eetenr etc.)</u>	<u>Waarom (aanleiding, bijv. honger, uiteren, met familie etc.)</u>
Eten						
	Ontbijt	Proteinshake Delicious Whey XXL Nutrition	200 ml		8:45 Thuis	Ontbijt, honger, dorst
		Cappuccino				
	Lunch	Surimisticks Quail Fisk	6st	12:30 - 13:00	Sjal/werk	Honger, lunch
		Grielse rauw kostsalade	200gr			
		Meloenmix	200gr			
		Viverra cordonbloe	1st			
		Viverra kaasschnitzel	1st			
	Avondeten	Visssticks	6st		18:30 Thuis	Honger, avondeten
		Krieltjes	250gr			
		Salade met maïs, tomaten en fetakaas	200gr			
	Tussendoor	Salade met maïs, tomaten en fetakaas	200gr		21:30 Thuis	Tek
		<u>Wat (merk, beschrijving van geconsumeerd product)</u>	<u>Hoewel (geschat aantal ml/g stuks)</u>	<u>Wanneer (geschat tijdstip)</u>	<u>Waar (thuis, station, eetenr etc.)</u>	<u>Waarom (aanleiding, bijv. honger, uiteren, met familie etc.)</u>
	Drinken					
	Ontbijt	koffie met 1 zoe'tje	2 kopjes		9:15 Sjal/werk	koffietijd
Drogen	Tussendoor	Water	Glas 100ml		10:30 Sjal/werk	Dorst
	Lunch	Alpro Soya drink rode vruchten	Glas 200ml	12:30 - 13:00	Sjal/werk	Dorst
	Tussendoor	koffie met 1 zoe'tje	2 kopjes		15:00 Sjal/werk	koffietijd
		Water	Glas 100ml		15:00 Sjal/werk	Dorst
	Tussendoor	Vitamine C bruisablet met spa rood	Glas 200ml		18:15 Thuis	Dorst
	Avondeten					
	Tussendoor	Water	Glas 100ml		21:30 Thuis	Dorst
	Tussendoor	Water	Glas 200ml		23:00 Thuis	Dorst
	Alcohol	<u>Wat (merk, beschrijving van geconsumeerd product)</u>	<u>Hoewel (geschat aantal ml/g stuks)</u>	<u>Wanneer (geschat tijdstip)</u>	<u>Waar (thuis, station, eetenr etc.)</u>	<u>Waarom (aanleiding, bijv. honger, uiteren, met familie etc.)</u>
	Roken	<u>Wat (sigaret/shag)</u>	<u>Hoewel (stuks)</u>	<u>Wanneer (geschat tijdstip)</u>	<u>Waar (thuis, station, eetenr etc.)</u>	<u>Waarom (aanleiding)</u>
		Shag Pall Mall rood	2 st	20:30, 21:00	Thuis	Gezelligheidsroken, verening
	Drogen	<u>Wat (merk, beschrijving van geconsumeerd product)</u>	<u>Hoewel (ml/g stuks)</u>	<u>Wanneer (geschat tijdstip)</u>	<u>Waar (thuis, station, eetenr etc.)</u>	<u>Waarom (aanleiding)</u>
		Nee				

<u>Gegevens</u>		<u>Naam: Testpersoon 4</u>				
		<u>Wat (werk/activiteit)</u>	<u>Dag: 3</u>			
<u>Dag indeling</u>	<u>Werkdag (zie invul tabel)</u>	Werkdag op stal	<u>Hoelang (geschat aantal uren/minuten)</u>	<u>Wanneer (geschat tijdstip)</u>		
		Werken op concours	7 uur	09:00 - 16:00		
		<u>Wat (discipline/sport)</u>	4 uur	18:00 - 22:00		
<u>Beweging</u>	<u>Paardrijden</u>	Dressuurtraining	<u>Hoelang (geschat aantal uren/minuten)</u>	<u>Wanneer (geschat tijdstip)</u>		
		Longeren	30 min	11:15 - 11:45		
		Paarden buiten en binnen zetten	30min	10:15 - 10:45		
			30 min	9:45 en 15:00		
	<u>(overige) Sport</u>					
		<u>Wat (broodschoppen op de fiets, lopen met de hand etc)</u>	<u>Hoelang (geschat aantal uren/minuten)</u>	<u>Wanneer (geschat tijdstip)</u>		
	<u>Dagelijkse Beweging</u>	Fietsen	30 min	09:00- 16:00 en 16:30		
<u>Inactiviteit</u>	<u>Aantal sedentaire (zittende) uren</u>	<u>Wat (film kijken, boek lezen, komboor werk e.d.)</u>	<u>Hoelang (geschat aantal uren/minuten)</u>	<u>Wanneer (geschat tijdstip)</u>		
		TV kijken	30 min	23:00 - 23:30		
<u>Eindrapboek</u>		<u>Wat (merk, beschrijving van geconsumeerd product)</u>	<u>Hoeveel (geschat aantal ml/g/stuks)</u>	<u>Wanneer (geschat tijdstip)</u>	<u>Waar (thuis, station, eettent etc.)</u>	<u>Waarom (aanleiding: bijv. honger, uiteten, met familie etc.)</u>
<u>Eten</u>						
	Ontbijt	Proteinshake Delicious Whey XXL Nutrition	200ml		8:45 Thuis	Ontbijt
		Capuccino				
	Lunch	Surimsticks Quail Fisk	6st	12:00 - 13:00		Honger, lunchen
		Meloenmix	200gr			
		Griekse rauwkostsalade	200gr			
		Viverra cordonbleu	1st			
		Viverra kaasschnitzel	1st			
		Amandelen	50 gr			
	Avondeten	Zak isbergsla	400gr	17:00 - 17:30		Honger
		Kellog's cornflakes zonder melk	1 schaaltje			
	Tussendoor	Tosti	1st		21:00 Werk/concours	Honger
	Tussendoor	Melkchocolade met hazelnoten	1 reep		23:00 Thuis	Trek, behoefte aan zoetheid
		<u>Wat (merk, beschrijving van geconsumeerd product)</u>	<u>Hoeveel (geschat aantal ml/g/stuks)</u>	<u>Wanneer (geschat tijdstip)</u>	<u>Waar (thuis, station, eettent etc.)</u>	<u>Waarom (aanleiding: bijv. honger, uiteten, met familie etc.)</u>
<u>Drinken</u>						
	Ontbijt	Koffie met 1 zoetje	1 kopje		9:15 Werk/stal	Koffietijd, dorst
	Lunch	Alpro Sora drink rode vruchten	Glas 200ml	12:00 - 13:00		Dorst
	Tussendoor	Koffie met 1 zoetje	1 kopje		15:30 Werk/stal	Koffietijd
	Tussendoor	Vitamine C bruisabiet met spa rood	Glas 200ml		16:45 Thuis	Dorst
	Avondeten					
	Tussendoor	Spa rood	Glas 200ml		18:00 Werk/concours	Dorst
	Tussendoor	Koffie 1 zoetje	1 kopje		20:00 Werk/concours	Dorst
<u>Alcohol</u>	<u>NVT</u>	<u>Wat (merk, beschrijving van geconsumeerd product)</u>	<u>Hoeveel (geschat aantal ml/g/stuks)</u>	<u>Wanneer (geschat tijdstip)</u>	<u>Waar (thuis, station, eettent etc.)</u>	<u>Waarom (aanleiding: bijv. honger, uiteten, met familie etc.)</u>
<u>Roken</u>	<u>NVT</u>	<u>Wat (merk, beschrijving van geconsumeerd product)</u>	<u>Hoeveel (stuks)</u>	<u>Wanneer (geschat tijdstip)</u>	<u>Waar (thuis, station, eettent etc.)</u>	<u>Waarom (aanleiding)</u>
<u>Drugs</u>		<u>Wat (merk, beschrijving van geconsumeerd product)</u>	<u>Hoeveel (ml/g/stuks)</u>	<u>Wanneer (geschat tijdstip)</u>	<u>Waar (thuis, station, eettent etc.)</u>	<u>Waarom (aanleiding)</u>
	Nee					

<u>Gegevens</u>	Naam: Testpersoon 5			Daag: 1		23,83%	
<u>Daag indeling</u>	Werkdag (zie invul tabel)	Wat (werk/zakten)	Hoelang (geschat aantal uren/minuten)	Wanneer (geschat tijdstip)			
	Vrije dag	Vrije dag					
		Wat (discipline sport)	Hoelang (geschat aantal uren/minuten)	Wanneer (geschat tijdstip)			
<u>Beweging</u>	Paardrijden	Klassiek ballet	135 minuten	19.30-21.45			
	(overige) Sport	Wat (loosdoechoppen op de fiets, lopen met de hand etc)	Hoelang (geschat aantal uren/minuten)	Wanneer (geschat tijdstip)			
	Dagelijkse Beweging	Lopen naar AH	10 min	15.00			
		fietsen	30 minuten	19.15 & 21.45			
<u>Inactiviteit</u>		Wat (film kijken, boek lezen, kantoor werk e.d)	Hoelang (geschat aantal uren/minuten)	Wanneer (geschat tijdstip)			
	Aantal sedentaire (zittende) uren	Achter computer werken	4 uur	11.00-15.00			
<u>Eetdagboek</u>		Wat (merk, beschrijving van geconsumeerd product)	Hoeveel (geschat aantal ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eetten etc.)	Waarom (aanleiding: blij, honger, uiteen, met familie etc.)	
Eten							
	Ontbijt	mager yoghurt	100ml	11.00	thuis		
		zelfgemaakte cruesli (havermout, noten- en pittenmix, honing 20 gr	11.00		thuis		
	Tussendoor						
	Lunch						
	Tussendoor	roze koek	1 stuk	17.00	thuis		
	Avondeten	pizza mozzarella	1 stuk	18.30	thuis		
		konkommer	0,5 stuk	22.15	thuis		
	Tussendoor						
	Tussendoor						
Drinken		Wat (merk, beschrijving van geconsumeerd product)	Hoeveel (geschat aantal ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eetten etc.)	Waarom (aanleiding: blij, honger, uiteen, met familie etc.)	
	Ontbijt						
	Tussendoor	energydrink	250ml	13.00	thuis		
	Lunch						
	Tussendoor	groene thee met munt	200ml	16.00	thuis		
		water	1 liter	17.00	thuis		
	Avondeten						
	Tussendoor	water	500ml	21.00	baalschool		
Alcohol		Wat (merk, beschrijving van geconsumeerd product)	Hoeveel (geschat aantal ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eetten etc.)	Waarom (aanleiding: blij, honger, uiteen, met familie etc.)	
	Ontbijt						
	Tussendoor						
	Tussendoor						
	Lunch						
	Tussendoor						
	Avondeten						
	Tussendoor	witte wijn	50ml	18.30	thuis		
	Tussendoor	witte wijn	100ml	22.30	thuis		
	Tussendoor						
Roken		Wat (sigaret/slag)	Hoeveel (stuk)	Wanneer (geschat tijdstip)	Waar (thuis, station, eetten etc.)	Waarom (aanleiding)	

Gerevens	Naam: Testpersoon 5		Dag: 2			
Dag indeling	Werkdag (zie invul tabel)	Wat (werk/activiteit)	Hoelang (geschat aantal uren/minutes)	Wanneer (geschat tijdstip)		
	Werk		4 uur	9.00-13.00		
	Vrije dag	Oppassen	3 uur	18.30-21.30		
		Wat (discipline/sport)	Hoelang (geschat aantal uren/minutes)	Wanneer (geschat tijdstip)		
Bewerking	Paardrijden					
	(overige) Sport					
		Wat (broodchoppen op de fiets, lopen met de hond etc.)	Hoelang (geschat aantal uren/minutes)	Wanneer (geschat tijdstip)		
	Dagelijkse Beweging	Fietsen	60 minuten (2x 30 min)	8.30 & 13.00		
		Fietsen	30 minuten (2x 15 min)	18.15 & 21.30		
		Lopen naar AH	10 min	15.00		
Inactiviteit		Wat (film kijken, boek lezen, kamor werk e.d.)	Hoelang (geschat aantal uren/minutes)	Wanneer (geschat tijdstip)		
	Aantal sedentaire (zittende) uren	werk	4 uur	9.00-13.00		
Eetdagboek		Wat (merk, beschrijving van geconsumeerd product)	Hoeveel (geschat aantal ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eetkamer etc.)	Waarom (omleiding, blij, honger, uiteen, met familie etc.)
Eten						
	Ontbijt	knackebrood met pompoenpitten	4 stuks	8.00	thuis	
	Tussendoor	appel- abrikosstaart	1 punt	9.30	werk	verjaardag van collega
	Lunch	knackebrood met pompoenpitten	4 stuks	14.00	thuis	
	Tussendoor	roze koek	1 stuk	16.30	thuis	
	Avondeten	Macaroni met kaas	125 gr	17.30	thuis	
		bleekseldij	100 g	17.30	thuis	
		wortel	150 g	22.00	thuis	
	Tussendoor					
		Wat (merk, beschrijving van geconsumeerd product)	Hoeveel (geschat aantal ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eetkamer etc.)	Waarom (omleiding, blij, honger, uiteen, met familie etc.)
Drinken						
	Ontbijt	groene thee met munt	200 ml	8.00	thuis	
	Tussendoor	munthee	300 ml (3x 100ml)	9.00-13.00	werk	
	Tussendoor					
	Lunch					
	Tussendoor	energydrink	250 ml	14.30	thuis	
	Tussendoor	water	500 ml	16.30	thuis	
	Avondeten					
	Tussendoor	groene thee met munt	250 ml	18.00	thuis	
		munthee	500 ml	19.00-21.00	oppassadres	
Alcohol		Wat (merk, beschrijving van geconsumeerd product)	Hoeveel (geschat aantal ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eetkamer etc.)	Waarom (omleiding, blij, honger, uiteen, met familie etc.)
	Ontbijt					
	Tussendoor					
	Lunch					
	Tussendoor					
	Avondeten					
	Tussendoor					
Roken		Wat (sigaret/shag)	Hoeveel (stuk/s)	Wanneer (geschat tijdstip)	Waar (thuis, station, eetkamer etc.)	Waarom (omleiding)
Dugs		Wat (merk, beschrijving van geconsumeerd product)	Hoeveel (ml/g/stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eetkamer etc.)	Waarom (omleiding)
	Ja/Nee					

<u>Gegevens</u>	Testpersoon 5		<u>Deag: 3</u>			
<u>Dag, Inleiding</u>	Werkdag (zie invul tabel)	Wat (werk/activiteit)	Hoelang (geschat aantal uren/minutes)	Wanneer (geschat tijdstip)		
	Vrije dag	Vrije dag	tot 19.00			
	Vrije dag	Oppassen	4 uur	19.00-23.00		
<u>Beweging</u>	Wat (discipline/sport)		Hoelang (geschat aantal uren/minutes)	Wanneer (geschat tijdstip)		
	Paardrijden					
	(overige) Sport					
	Wat (boodschappen op de fiets, lopen met de hond etc)		Hoelang (geschat aantal uren/minutes)	Wanneer (geschat tijdstip)		
	<u>Dagelijkse Beweging</u>	Fietsen	30 min (2x 15 min)	19.45 & 23.00		
		Lopen naar AH	10 min	15.00		
<u>Inactiviteit</u>	Wat (film kijken, boek lezen, kantoor werk e.d.)		Hoelang (geschat aantal uren/minutes)	Wanneer (geschat tijdstip)		
	Aantal sedentaire (zittende) uren	achter computer	3 uur	12.00-15.00		
<u>Eetdagboek</u>	Wat (merk, beschrijving van geconsumeerd product)		Hoeveel (geschat aantal ml/g stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eettent etc.)	Waarom (omleiding: blij, honger, uiteren, met familie etc.)
<u>Eten</u>						
	Ontbijt	mager yoghurt	1 kom	11.00	thuis	
		zelfgemaakte cruesli	20 gr	11.00	thuis	
		honing	2 theelepels	11.00	thuis	
		lijnzaad	1 eetlepel	11.00	thuis	
	Tussendoor					
	Lunch					
	Tussendoor					
	Avondeten	Hotdogs op bruin broletje met mayonaise	3 stuks	18.00	thuis	
		Gekruide twisterfries	100 g	18.00	thuis	
		Bleekvaderij	100 gr	18.00	thuis	
	Tussendoor	Schenj's chocola en cookies&dough	2 bolletjes met hoorntje	19.30	oppassen	
	Wat (merk, beschrijving van geconsumeerd product)		Hoeveel (geschat aantal ml/g stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eettent etc.)	Waarom (omleiding: blij, honger, uiteren, met familie etc.)
<u>Drinken</u>						
	Ontbijt	groene thee met munt	250 ml	11.00	thuis	
	Tussendoor	energydrink	250 ml	13.00	thuis	
	Tussendoor					
	Lunch					
	Tussendoor	water	500 ml	16.00	thuis	
		water	500 ml	17.30	thuis	
	Avondeten					
	Tussendoor	munthee	500 ml	21.00-23.00	oppassen	
<u>Alcohol</u>	Wat (merk, beschrijving van geconsumeerd product)		Hoeveel (geschat aantal ml/g stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eettent etc.)	Waarom (omleiding: blij, honger, uiteren, met familie etc.)
	Ontbijt					
	Tussendoor					
	Lunch					
	Tussendoor					
	Avondeten					
	Tussendoor					
<u>Roken</u>		Wat (sigaret/slag)	Hoeveel (stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eettent etc.)	Waarom (omleiding)
<u>Drugs</u>		Wat (merk, beschrijving van geconsumeerd product)	Hoeveel (ml/g stuks)	Wanneer (geschat tijdstip)	Waar (thuis, station, eettent etc.)	Waarom (omleiding)
	Jg/Nee					

Annex D

Bevindingen deelnemers onderzoek

Testpersoon 1

23 jaar

28,5% vet

BMI 24,4

64 KG

Basaal metabolisme: 1437 Kcal

Activiteitsfactor: 1,3

Aanbevolen calorie-inname voor levensstijl: 1868 Kcal (theoretische berekening)

(Afvallen - 20% => 1495 kcal)

Ideale macro verdeling volgens Gerard: 40% KH, 30(-40)% vet en (20-)30% eiwit:

KH => 187 gram KH

Vet=> 62 gram vet

Ei => 140 gram eiwit

Officiële gemiddelde optimale eiwit inname: 77 – 141 gram eiwitten per dag

Ideale Vet inname: tussen de 20%-40% van totale calorie inname.

Optimale KH inname: volgens voedingscentrum 60%. Volgens FitBewust 40 tot max 50%

Dag 1: 1418 Kcal

201,5 gram KH => 806 Kcal = 57% Koolhydraat inname

28,9 gram vet => 260 Kcal = 18% vet

73,4 gram EI => 294 Kcal = 21% eiwit

Opmerking: Lage totaal kcal inname. Hoge KH inname. Te weinig vet. Eiwit ligt in de range.

Dag 2: 1680 Kcal

243,4 gram KH => 974 Kcal = 58% KH

40,5 gram vet => 365 Kcal = 22% vet

69,6 gram EI => 278 Kcal = 17 % Eiwit

Opmerking: Kcal inname is wat laag, maar goed te doen. Hoge KH inname. Te weinig vet. Eiwitten kan net, maar aan magere kant.

Dag 3: 2703 Kcal

325,7 gram KH => 1303 Kcal = 48% KH

73,7 gram vet => 663 Kcal = 25% vet

173,6 gram ei => 694 Kcal = 26% eiwit

Opmerkingen: Veel te hoge Kcal inname. Vet inname procentueel gezien laag. Eiwit inname oke. In zijn totaal wel teveel van alles.

Ingevuld formulier A

Ontbijt dagelijks:	ja
Hoofdmaaltijden per dag:	1
Tussendoortjes per dag:	2
Geschatte calorie intake:	1700/dag
Fast food doordeweeks:	nee
Snoep doordeweeks:	nee
Frisdrank:	nee
Roken?	nee
Drugs?	Nee
Wandelen elke dag?	30 min
Fietsen elke dag?	Nee
Actief in huishouden?	Nee
Stal activiteiten per dag:	30 min
Uren per dag andere sport:	0
Uren per week paardensport:	5
Uren slaap per nacht:	7
Uren zitten per dag:	8
Werk:	Administratief medewerkster

Opgevallen aan voeding en leef patroon:

Ze ontbijt en luncht relatief weinig. Ze heeft 2 tussendoortjes: een cracker met kipfilet en yoghurt met muesli. Het meeste nuttigt ze in de avond. Terwijl ze in de avond waarschijnlijk het minst actief is.

Ze nuttigt mijn inziens teveel koolhydraten en te weinig eiwitten en vetten. Qua eiwitten zit ze net binnen de range, maar mag van mij meer zijn. Vetten nuttigt ze te weinig. Ze eet veel te weinig groente en fruit. De micronutriënten zoals vitamines en mineralen komt ze hierdoor tekort.

Ze rookt niet en doet geen drugs. Ze zegt dat ze niet snoept, maar mueslierepen en chocolade milkshakes – ook al is het van cambridge (waar ik zwaar anti op ben overigens) – zie ik toch wel als snoepen en ‘troep’.

Nachtrust is goed. Ze zit wel heel veel per dag. Heeft geen lichamelijk actief beroep.

Ze wandelt wel elke dag 30 minuten (zegt ze) en ze doet arbeid in de stal 30 minuten per dag. Recreatieve activiteit is daardoor voldoende.

Ze heeft wel een zittend beroep waardoor ze voor een groot deel van de dag niet actief is. Dit heeft invloed op haar algehele fitheid.

Paardrijden kun je door het uithoudende karakter van spiergebruik zien als duurtraining. Nadeel is echter dat als je dit vaak doet, het lichaam dit als ‘normaal’ ervaart en er geen nieuwe prikkel is voor het lichaam. Echt groeien qua conditie en spieren zal je dus niet. Afvallen dus ook niet.

Als men fitter wil worden, zal men dus naast het paardrijden ook aan losse cardiotraining en kracht moeten doen. Ideaal gezien 2x 30 minuten cardio en 2-3 x per week kracht (uithoudingsvermogen). Ze heeft naast het paardrijden te weinig cardio en kracht activiteit.

Ze doet wel 5 minuten per dag buikspieroefeningen. De intentie hiervan is goed, maar het zal weinig zoden aan de dijk zetten.

Health Index (1-5)

De health Index stel ik samen uit een aantal componenten die ieder een score hebben op een schaal van 1 (heel ongezond) tot 5 (heel gezond). Voeding telt vijf keer in de berekening van dit gemiddelde, omdat deze een grote invloed heeft op onze gezondheid. Beweging Cardio en Kracht tellen ieder 2x mee. Uiteraard heeft lichaamsbeweging dat ook, maar doordat deze zijn opgedeeld in losse onderdelen tellen deze ieder 1x mee.

Nachtrust (x1): 4

Beweging Recreatief (x1): 3

Beweging Cardio (x2): 2

Beweging Kracht (x2): 1

Roken (1): 5

Voeding (x5): 2

HEALTH INDEX volgens FitBewust: 2,3

Testpersoon 2

37 jaar

BMI: 29,6

Vetpercentage: 47,9%

96 KG

Basaal Metabolisme: 1664 Kcal

Activiteitsfactor: 1,3 (zeer licht)

Aanbevolen calorie-inname voor levensstijl: 2163 Kcal (theoretische berekening)

(Afvallen - 20% => 1730 kcal)

Ideale macro verdeling volgens Gerard: 40% KH, 30(-40)% vet en (20-)30% eiwit:

KH => 216,3 gram KH

Vet=> 72 gram vet

Ei => 162 gram eiwit

Officiële gemiddelde optimale eiwit inname: 115 – 202 gram eiwitten per dag

Ideale Vet inname: tussen de 20%-40% van totale calorie inname.

Optimale KH inname: volgens voedingscentrum 60%. Volgens FitBewust 40 tot max 50%

Dag 1: 1644 Kcal

213,6 gram KH: 855 Kcal => 52%

57,5 gram vet: 518 Kcal => 32 %

57 gram eiwit: 228 kcal => 14%

Opmerkingen: Te weinig totale calorie inname. Relatief hoog in koolhydraten in vergelijking met andere macro's. Te weinig vet en veel te weinig eiwitten.

Dag 2: 1535 Kcal

192,8 gram KH: 772 kcal => 50%

39,7 gram vet: 358 kcal => 24%

87,6 gram eiwit: 351 kcal => 23%

Opmerkingen: Te weinig totale calorie inname. Relatief hoog in koolhydraten in vergelijking met andere macro's. Veel te weinig vet en weinig eiwitten.

Dag 3: 1481 Kcal

160,4 gram KH: 642 Kcal => 44%

46,1 gram vet: 415 Kcal => 28%

96,6 gram eiwit: 387 kcal => 27%

Opmerkingen: Te weinig totale calorie inname. Onderlinge macroverdeling is wel beter dan andere dagen.

Ingevuld formulier A

Ontbijt dagelijks:	ja
Hoofdmaaltijden per dag:	2
Tussendoortjes per dag:	2
Geschatte calorie intake:	2000/dag
Fast food doordeweeks:	ja. 1x per week
Snoep doordeweeks:	ja. veel
Frisdrank:	ja. 2 glazen light.
Roken?	nee
Drugs?	Nee
Wandelen elke dag?	Nee
Fietsen elke dag?	Nee
Actief in huishouden?	Ja (halve dag naar eigen zeggen)
Stal activiteiten per dag:	1,5 uur
Uren per dag andere sport:	30 minuten home trainer. Niet dagelijks.
Uren per week paardensport:	5
Uren slaap per nacht:	8
Uren zitten per dag:	4
Werk:	Reclasserings medewerker

Opgevallen aan voeding en leef patroon:

Ze eet structureel veel te weinig. Haar lichaam is daardoor standaard in overlevingsmodus waardoor weinig energie wordt afgestoten en veel reserves worden opgeslagen. Calorie inname redelijk verdeeld over de hele dag. Ze eet te weinig groente waardoor er te weinig vitamines en mineralen ingenomen worden. Structureel te weinig vet en eiwitten. Ze snoept iets te veel en eet slechte dingen. Denk aan sauzijnbroodjes, chocola en mueslirepen. Ze denkt dat ze meer eet dan ze werkelijk doet. Duidelijk psychisch. ☺

Ze rookt niet en gebruikt geen drugs. Haar nachtrust is goed: 8 uur per nacht. Ze zit 4 uur per dag zegt ze. Maar mijn vermoeden is dat dit getal veel hoger ligt. Haar activiteit is namelijk laag. Ze besteedt wel 1,5 uur per dag aan stal-werkzaamheden. Dat voldoet dus aan recreatief bewegen.

Paardrijden kun je door het uithoudende karakter van spiergebruik zien als duurtraining. Nadeel is echter dat als je dit vaak doet, het lichaam dit als 'normaal' ervaart en er geen nieuwe prikkel is voor het lichaam. Echt groeien qua conditie en spieren zal je dus niet. Afvallen dus ook niet.

Als men fitter wil zijn zal men dus naast het paardrijden ook aan losse cardiotraining en kracht moeten doen. Ideaal gezien 2x 30 minuten cardio en 2-3 x per week kracht (uithoudingsvermogen). Ze heeft naast het paardrijden te weinig kracht activiteit.

Ze traint wel eens op haar hometrainer. Van de 3 dagen die ze heeft bijgehouden, heeft ze dit 2 dagen gedaan. Als ze deze training uitdagend instelt, dan is haar cardio beweging afdoende.

Health Index (1-5)

De health Index stel ik samen uit een aantal componenten die ieder een score hebben op een schaal van 1 (heel ongezond) tot 5 (heel gezond). Voeding telt vijf keer in de berekening van dit gemiddelde, omdat deze een grote invloed heeft op onze gezondheid. Beweging Cardio en Kracht tellen ieder 2x mee. Uiteraard heeft lichaamsbeweging dat ook, maar doordat deze zijn opgedeeld in losse onderdelen tellen deze ieder 1x mee.

Nachtrust (x1):	5
Beweging Recreatief (x1):	5
Beweging Cardio (x2):	3
Beweging Kracht (x2):	1
Roken (1x):	5
Voeding (x5):	1

HEALTH INDEX volgens FitBewust: 2,3

Testpersoon 3

24 jaar

78 KG

23,18% vet

BMI: 23,3

Basaal Metabolisme: 1643 Kcal

Activiteitsfactor: 1,5 (licht)

Aanbevolen calorie-inname voor levensstijl: 2464 Kcal (theoretische berekening)

(Afvallen - 20% => 1970 kcal)

Ideale macro verdeling volgens Gerard voor Persoon 3: 45% KH, 30% vet en 25% eiwit:

KH => 277 gram KH

Vet=> 82,1 gram vet

Ei => 154 gram eiwit

Officiële gemiddelde optimale eiwit inname: 94 – 172 gram eiwitten per dag

Ideale Vet inname: tussen de 20%-40% van totale calorie inname.

Optimale KH inname: volgens voedingscentrum 60%. Volgens FitBewust 40 tot max 50%

Dag 1: 1894 kcal

326,3 gram KH: 1306 kcal => 69%

33,1 gram vet: 298 kcal => 16%

61,2 gram EI: 245 Kcal => 15 %

Opmerkingen: Gezien haar leven eigenlijk te weinig energie. Zeer hoog in koolhydraten. Te weinig in vetten en eiwitten.

Dag 2: 2200 Kcal

388,2 gram KH: 1553 kcal => 71%

30,8 gram vet: 278 kcal => 13%

78,5 gram ei: 314 kcal => 15%

Opmerkingen: Mag iets meer zijn qua energie, maar kan er mee door. Ook hier zeer hoog in koolhydraten en te weinig eiwitten en vetten.

Dag 3: 2022 Kcal

224,4 gram KH: 898 Kcal => 45%

89,2 gram vet: 803 kcal => 40%

70,2 gram eiwit: 281 kcal => 14%

Opmerkingen: Gezien haar leven eigenlijk te weinig energie. Koolhydraten hier iets te weinig. Genoeg vetten maar te weinig eiwitten.

Ingevuld formulier A

Ontbijt dagelijks:	ja
Hoofdmaaltijden per dag:	3
Tussendoortjes per dag:	2
Geschatte calorie intake:	2500/dag
Fast food doordeweeks:	nee
Snoep doordeweeks:	ja. dagelijks
Frisdrank:	Nee, maar wel limonda staat in de eetmeter.
Roken?	nee
Drugs?	Nee
Wandelen elke dag?	Nee
Fietsen elke dag?	Ja. Slechts 10 minuten
Actief in huishouden?	Nee
Stal activiteiten per dag:	1,5 uur
Uren per dag andere sport:	weinig. 1x in die 3 dagen 20 minuten buikspier gedaan.
Uren per week paardensport:	5
Uren slaap per nacht:	7
Uren zitten per dag:	2
Uren zware arbeid per dag:	3 (naar eigen zeggen)
Werk:	Student en verkoopster Intertoys

Opgevallen aan voeding en leef patroon:

Ze is vrij actief als ik het enquêteformulier mag geloven. Daardoor is haar activiteitsfactor wat hoger dan bij anderen. Zij kan meer energie gebruiken. Echter is de verhouding in haar voeding een beetje zoek. Zij eet veel koolhydraten waardoor er gemakkelijk een overschot ontstaat. Overschot aan 'benzine' (koolhydraten) is vetopslag. Ze eet structureel te weinig eiwitten wat nadelig is voor haar spiermassa. Spieren zijn passieve vetverbranders en die moet je intact houden.

Zij kan op koolhydraten besparen door minder limonade te drinken en meer water. Daarnaast zal ze meer eiwitten moeten nemen voor spierbehoud en eventuele ontwikkeling.

Ze rookt niet. Dat is positief en haar nachtrust is goed. De stalactiviteiten zorgen voor genoeg recreatieve beweging.

Paardrijden kun je door het uithoudende karakter van spiergebruik zien als duurtraining. Nadeel is echter dat als je dit vaak doet, het lichaam dit als 'normaal' ervaart en er geen nieuwe prikkel is voor het lichaam. Echt groeien qua conditie en spieren zal je dus niet. Afvallen dus ook niet.

Als men fitter wil zijn zal men dus naast het paardrijden ook aan losse cardiotraining en kracht moeten doen. Ideaal gezien 2x 30 minuten cardio en 2-3 x per week kracht (uithoudingsvermogen). Ze heeft naast het paardrijden te weinig cardio en kracht activiteit.

Health Index (1-5)

De health Index stel ik samen uit een aantal componenten die ieder een score hebben op een schaal van 1 (heel ongezond) tot 5 (heel gezond). Voeding telt vijf keer in de berekening van dit gemiddelde, omdat deze een grote invloed heeft op onze gezondheid. Beweging Cardio en Kracht tellen ieder 2x mee. Uiteraard heeft lichaamsbeweging dat ook, maar doordat deze zijn opgedeeld in losse onderdelen tellen deze ieder 1x mee.

Nachtrust (x1):	5
Beweging Recreatief en werk (x1):	5
Beweging Cardio (x2):	2
Beweging Kracht (x2):	1
Roken (1x):	5
Voeding (x5):	1

HEALTH INDEX volgens FitBewust: 2,16

Testpersoon 4

19 jaar

48 KG

BMI 19,2

15,92 % vet

Basaal Metabolisme: 1202 Kcal

Activiteitsfactor: 2,1 (zwaar)

Aanbevolen calorie-inname voor levensstijl: 2404 Kcal (theoretische berekening)

Ideale macro verdeling volgens Gerard voor Persoon 4: 50% KH, 33% vet en 18% eiwit:

KH => 301 gram KH

Vet=> 88 gram vet

Ei => 108 gram eiwit

Officiële gemiddelde optimale eiwit inname: 58 – 106 gram eiwitten per dag

Ideale Vet inname: tussen de 20%-40% van totale calorie inname.

Optimale KH inname: volgens voedingscentrum 60%. Volgens FitBewust 40 tot max 50%

Dag 1: 1928 Kcal

243,8 gram KH: 976 kcal => 51% KH

53,2 gram vet: 479 kcal => 25%

102,6 gram EI: 411 kcal => 22%

Opmerkingen: Ze eet te weinig. Eiwit inname is prima. Maar meer vet en koolhydraten zijn nodig.

Dag 2: 2062 Kcal

151,2 gram KH: 605 Kcal => 30%

101,1 gram vet: 910 kcal => 44%

128,7 gram EI: 515 kcal => 25%

Opmerkingen: Hier te weinig koolhydraten, en teveel vet en eiwitten naar mijn smaak. Totale energie inname te weinig voor de activiteit die ze heeft aangegeven.

Dag 3: 2129 kcal

223,5 gram KH: 894 kcal => 42%

124,2 gram Vet: 1118 kcal => 53%

152,8 gram EI: 612 kcal => 29%

Opmerkingen: Te weinig energie inname. Teveel vet en teveel eiwit. Meer energie nemen.

Ingevuld formulier A

Ontbijt dagelijks:	Nee
Hoofdmaaltijden per dag:	3
Tussendoortjes per dag:	1
Geschatte calorie intake:	2300/dag
Fast food doordeweeks:	nee
Snoep doordeweeks:	nee
Frisdrank:	Nee
Roken?	Blowen
Drugs?	Nee
Wandelen elke dag?	ja. 60 minuten
Fietsen elke dag?	Ja. 30 minuten
Actief in huishouden?	Nee
Stal activiteiten per dag:	8 tot 10 uur
Uren per dag andere sport:	1 uur fitness zegt ze. Maar in log is er 1 rustdag. Krijg wel de indruk dat zij veel krachttraining doet.
Uren per week paardensport:	15
Uren slaap per nacht:	8
Uren zitten per dag:	2,5
Uren zware arbeid per dag:	8 (naar eigen zeggen)
Werk:	Ker/Ruiter

Opgevallen aan voeding en leef patroon:

Danique is een interessant geval en precies het tegenovergestelde van de andere dames in dit onderzoek. Ze is heel actief als ik haar enquête mag geloven. Ik vraag mij bijna af of dit wel kan. En 1 uur sporten, en 8 uur met paard bezig zijn en 15 uur per week paardensport bedrijven en gewoon 8 uur per nacht slapen. Ik vermoed dat het in totaal wel iets minder is. Maar qua beweging is er niet bij haar op af te dingen. Qua beweging scoort zij maximaal.

Qua calorie inname heb ik door haar zware activiteiten deze verdubbeld. Dan komt ze nog op een bescheiden 2404 calorieën per dag. Eigenlijk eet ze structureel te weinig. En het grappige is dat zij voornamelijk te weinig koolhydraten eet, waar juist de andere dames teveel koolhydraten nemen. Vooral door de zware arbeid en de krachttraining die zij doet heeft zij meer koolhydraten nodig. Qua eiwitten zit ze aan de hoge kant qua intake. Zij mag gerust extra rijst of brood gaan nemen.

Qua voeding eet ze te weinig, dus ze scoort geen 5, maar een 3. Ook ontbijt ze niet. Dat is niet heel gezond. Ik raad haar aan te ontbijten met Brinta of havermout. Heeft ze gelijk wat extra koolhydraten binnen. :) Ik zie dat ze niet rookt, maar wel blowt. Het is een aandachtspunt, want goed voor je longen is het niet, maar waarschijnlijk heeft zij het nodig om te ontspannen. Ik schaal haar in op 4.

Health Index (1-5)

Nachtrust (x1):	5
Beweging Recreatief en werk (x1):	5
Beweging Cardio (x2):	5
Beweging Kracht (x2):	5
Roken (1x):	4
Voeding (x5):	3

HEALTH INDEX volgens FitBewust: 4,1

Testpersoon 5

26 jaar

54 KG

BMI: 19,8

Vetpercentage 23,81%

Basaal Metabolisme: 1290 Kcal

Activiteitenfactor: 1,6

Aanbevolen calorie-inname voor levensstijl: 2064 Kcal (theoretische berekening)
(AfvalLEN - 20% => 1651 kcal)

Ideale macro verdeling volgens Gerard voor Persoon 5: 45% KH, 32% vet en 23% eiwit:

KH => 232 gram KH

Vet=> 73 gram vet

Ei => 119 gram eiwit

Officiële gemiddelde optimale eiwit inname: 65 – 119 gram eiwitten per dag

Ideale Vet inname: tussen de 20%-40% van totale calorie inname.

Optimale KH inname: volgens voedingscentrum 60%. Volgens FitBewust 40 tot max 50%

Dag 1: 1239 Kcal

155,1 gram KH: 621 kcal => 51%

48,5 gram vet: 437 kcal => 35%

41,2 gram EI: 165 kcal => 14%

Opmerkingen: Totale calorie inname veel te weinig. Op alle vlakken tekort.

Dag 2: 1264 Kcal

197,2 gram kh: 789 kcal => 63%

32,5 gram vet: 293 kcal => 24%

34,9 gram eiwit: 140 kcal => 12%

Opmerkingen: Totale calorie inname veel te weinig. Op alle vlakken tekort. Koolhydraat inname is al iets beter.

Dag 3: 1254 Kcal

150,3 gram KH: 602 Kcal => 48%

57,2 gram vet: 515 kcal => 42%

30,5 gram EI: 122 kcal => 10%

Opmerkingen: Totale calorie inname veel te weinig. Op alle vlakken tekort.

Ingevuld formulier A

Ontbijt dagelijks:	Ja
Hoofdmaaltijden per dag:	3
Tussendoortjes per dag:	1
Geschatte calorie intake:	1700/dag
Fast food in de week:	1x
Snoep in de week:	2x
Frisdrank:	1 per dag - regular
Roken?	Nee
Drugs?	Nee
Wandelen elke dag?	ja. 30 minuten
Fietsen elke dag?	Ja. 60 minuten

Actief in huishouden?	ja. 30 minuten
Stal activiteiten per dag:	30 minuten
Uren per dag andere sport:	Er wordt gezegd 1 uur per dag. Uit log komt 1 dag met een andere sport naar voren, namelijk klassiek Ballet. Wel meteen 135 minuten. Ik ga er van uit dat ze dit minimaal 2x per week doet.
Uren per week paardensport:	1
Uren slaap per nacht:	8
Uren zitten per dag:	8
Uren zware arbeid per dag:	0
Werk:	Psycholoog

Opgevallen aan voeding en leef patroon:

Eerlijk gezegd maak ik mij een beetje zorgen om deze jongedame. Ze eet structureel veel te weinig en wat ze eet, is ook niet echt om over naar huis te schrijven. Veel snelle suikers en weinig voedzame dingen. Haar voedingspatroon neigt een beetje naar ondervoeding. Haar lichaam is volgens mij standaard in overlevingsmodus en door haar ballet (volgens mij wordt aan ballerina's best wel flinke eisen gesteld) weet ze het slank te houden. Haar vetpercentage en bmi is prima, maar ik vraag mij serieus af hoe gezond zij werkelijk is. Mijn vermoeden: niet heel erg gezond. Ik zou haar eigenlijk willen leren wat goed gezond eten is, maar ik vraag mij af of ze dat wil, want ze zal er in het begin wellicht van aankomen. (door die hongermodus waar het lichaam nu in zit)

Haar bewegingspatroon is op zich prima. Veel creatief bewegen. Elke dag een uur fietsen. En dan de ballettraining die volgens mij best wel wat spierkracht vergt. Op dat gebied scoort ze wel goed. Qua eten alleen totaal niet.

Health Index (1-5)

Nachtrust (x1):	5
Beweging Recreatief en werk (x1):	5
Beweging Cardio (x2):	5
Beweging Kracht (x2):	5
Roken (1x):	5
Voeding (x5):	1

HEALTH INDEX volgens FitBewust: 3,33