National Institute for Health and Welfare FinHealth 2017 Study

FinHealth

Health profile

First names Last name Street address Postal code Town

We would like to thank you for participating in our study. You have assisted us to complete the FinHealth Study that is important to the promotion of health and functional ability of adult residents in Finland.

This document is your personal health profile. In addition to your own test results, it includes information about the average results at the population level as well as reference and target values. This allows you to compare your results with others. Below are also general recommendations and instructions. You can evaluate how they apply to your personal situation and, if necessary, discuss them with the professional in charge of your treatment. The health profile includes information about the most common chronic diseases and functional ability as well as the most significant factors impacting these that you can potentially affect with your personal choices.

If you also participated in a dietary interview, you will be provided with feedback on its results at a later date.

In total, 7,055 people participated in the FinHealth 2017 study, amounting to 69% of those invited to participate. The main results of the study will be published during 2018, and the research data will be utilised in hundreds of studies over the coming years. For more information about the study results and the use of the research data, see our website at www.thl.fi/finterveys. This text of the health profile in English is only available on our website (without the results). We are not able to mail any personal results in English.

If you have any questions about the study or your results, please do not hesitate to contact us by calling +358 50 400 7140. Our telephone service is available at the following times:

at 10–12: on Tuesdays 6 February, 13 February, 6 March and 13 March, and Thursdays 8 February, 15 February and 8 March.

at 12–14: on Monday 19 February and Tuesdays 20 February and 27 February.

at 13–15: on Monday 26 February.

At other times, you may submit a contact request by e-mail at finterveys@thl.fi. Please remember to include your name and the number you wish us to call in the message.

Kind regards,

Seppo Koskinen Research Professor, MD Katja Borodulin Senior Researcher, Adjunct Professor Instructions on interpreting the health profile:

- The results are based on the final, quality controlled data. Thus, some of your results may slightly differ from the information you have previously received. Such differences may occur in the results concerning your body mass index, blood pressure and functional capacity.
- Your personal result might be missing if the measurement could not be performed on you for some reason.
- As this health profile has been automatically generated based on certain selected measurement results and survey responses, it cannot take into account all factors that may affect your health.
- The health profile reflects your situation at the time of your health examination, and it is obvious that your condition may have changed since then. For this reason, some of the interpretations (marked in colour) may no longer apply to your situation.
- We have already recommended some of the participants to request new measurements or more detailed examinations, or to contact their health centre, health station or occupational health care for some other reason at the health examination or in the letter providing feedback on the laboratory results. If you have been given such a recommendation, but have not yet undertaken re-examination, we now advise you to make an appointment at your health station or with your occupational health care provider.



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Your date of examination: ____ / ____ 2017

Your age group in the results _____

Study results based on health examinations

Blood pressure and body composition

	Target or reference value	Your result	Your age group in general	
			Mean	Proportion (%)
Blood pressure (mmHg)	Systolic pressure (higher value) below 140 mmHg and/or diastolic pressure (lower value) below 90 mmHg			
Waist circumference (cm)	women: below 90 cm men: below 100 cm			
Body mass index (kg/m ²)	Below 18.5: underweight 18.5–24.9: normal weight 25.0 and above: overweight			

Blood pressure

These blood pressure values have been calculated as averages based on a number of measurements and may thus differ from the values given to you at the health examination. Blood pressure is considered to be elevated if the systolic pressure (higher value) is at least 140 mmHg and/or the diastolic pressure (lower value) is 90 mmHg or higher. The target values set for the treatment of elevated blood pressure depend on whether you have diabetes or kidney disease or have a history of a stroke or a myocardial infarction. If you are already being monitored or treated for hypertension, continue following your current instructions. You can affect your blood pressure level with lifestyle choices. For instance, high salt consumption, alcohol use, overweight and physical inactivity raise blood pressure.

Overweight and obesity

Body mass index, waist circumference and body fat percentage are slightly different indicators for overweight and obesity as well as the health risks related to obesity. Maintaining a normal weight significantly reduce risk for chronic diseases, such as cardiovascular diseases, diabetes, cancer as well as musculoskeletal diseases. Healthy eating habits as well as regular and meaningful physical exercise help to attain and keep normal weight. It is worth remembering that even a slight reduction in weight can be beneficial for an overweight individual. **Waist circumference** is used to estimate the location of fat in the body. An increased waist circumference often results from excess fat accumulated in the abdomen, which is harmful for your health. Exceeding a waist circumference of 100 cm for men and 90 cm for women represents an elevated risk of developing conditions such as diabetes and cardiovascular diseases. **Body mass index (BMI)** is calculated by dividing weight by height (kg/m²). Body mass index is associated with the amount of fat tissue in the body. An ideal body weight falls within a BMI range of 18.5–24.9. When the body mass index exceeds the value of 25, overweight becomes more significant and the risk for several illnesses is increasing. A BMI of 30 and above is considered obese.

Body composition in a bioimpedance analysis

	Your	Your age group in general:
	result	Mean
Body fat percentage		
Fat mass (kg)		
Muscle mass (kg)		
Fat-free mass (kg)		

A bioimpedance measurement device was used to estimate body composition. The device provides a rough estimate of the amount of fat, muscle and bone tissue in the body, but cannot give precise results on these. Different devices may produce varying results. Body fat percentage is an estimate of the proportion of fat tissue from the total body weight. An adequate proportion of fat secures normal body function, as fatty acids are a necessary part of cell structure. Excess energy is retained in the body as fat (fat tissue). The recommended body fat percentage among women is on average 20–30% and among men 10–20%. The proportion of body fat increases by age, when for those aged 60 years and over, the range of the recommendation moves up, among women 24–36% and among men 13–25%. Fat-free body mass evaluates the amount of tissues other than fat in the body (including muscles and bones).

Muscle mass is an estimate of the proportion of muscles in the body. Muscles facilitate good physical functional ability. Muscle tissue uses a lot of energy and helps maintaining important bodily functions. No reliable reference or recommended values per age group are available. The amount of muscle mass is affected by factors such as gender, age, physical activity, and genetics.

	Target or reference value	Your result	Your age group in general	
			mean	proportion (%)
S-Kol (mmol/l, total cholesterol)	below 5			
S-Kol-HDL (mmol/l, so-called good cholesterol)	women over 1.2, men			
	over 1.0			
S-Kol-LDL (mmol/l, so-called bad cholesterol)	less than 31			
S-Trigly (mmol/l, triglycerides)	less than 1.7			
ApoB/ApoA1 ratio	women: <0.6; men: <0.75			
Dyslipidemia				
HbA1c (mmol/mol, glycated haemoglobin)	20-42			
fP-Gluk (mmol/l, blood sugar)	below 6.1			

An elevated serum **total cholesterol value** is a key risk factor in cardiovascular diseases. The level of cholesterol is influenced by nutrition, and the easiest way to lower it is with dietary changes. Values should be monitored, especially if, in addition to a high cholesterol level, you suffer from high blood pressure, diabetes or overweight or if you smoke.

HDL cholesterol (so-called good cholesterol) protects you from cardiovascular diseases. **LDL cholesterol** is the so-called bad cholesterol that is calculated based on total cholesterol, HDL cholesterol and triglyceride values. LDL cholesterol cannot be reliably calculated if the triglyceride value is above 4 mmol/l; in this case, the LDL value is not given in the table.

Elevated triglycerides are a risk factor for cardiovascular diseases. Your triglyceride value is only reliable if you followed the instructions on fasting (4 h) before your tests.

S-LipoA1 (apolipoprotein A1, apoA1) and **S-LipoB** (apolipoprotein B, apoB) are proteins that carry cholesterol and other fats in your body. LipoA1 carries cholesterol ("good" HDL cholesterol) to the liver. A lowered serum apoA1 level increases the risk of cardiovascular diseases. LipoB, on the other hand, carries fats from food, from the liver to the body for use ("bad" LDL cholesterol). A high serum ApoB level increases the risk of cardiovascular diseases. LipoB may give a more accurate estimate of cardiovascular disease risk, than cholesterol tests alone. **The ApoB/ApoA1 ratio** reflects the relation of the so-called "good" to the "bad" cholesterol. This ratio should be as low as possible; below 0.75 for men and below 0.6 for women.

Dyslipidemia is a condition where the blood lipid levels differ from the target levels, which increases the risk for cardiovascular diseases. In dyslipidemia, the LDL cholesterol level is over 3.0 mmol/l or triglyceride level is over 1.7 mmol/l or HDL cholesterol level is low (men: below 1.0 mmol/l and women: 1.2 mmol/l)

Glucose or blood sugar is elevated in diabetes or if the blood sample has been taken 1–3 hours after eating. If the sample is taken after more than 4 hours of fasting, values above 7.0 mmol/l indicate potential diabetes.

Glycated haemoglobin (HbA1c, long-term blood sugar value) is a value reflecting your glucose metabolism over a 6–8-week period. It also reflects the long-term control for diabetics. The values should be 20–42 mmol/mol, but the target levels depend on whether you have diabetes and are on certain medication.

Lifestyle

	Your result	Your age group in general:
		proportion (%)
Physical activity in leisure time		
Meeting the recommendations for endurance exercise		
Eating vegetables or fruit several times per day		
Using recommended spread on bread		
Using recommended fat in cooking		
Using iodised salt		
Sufficiency of sleep		
Normal amount of sleep		
Daily smoking		
Nicotine addiction (only smokers)		
Excessive alcohol use		

Lifestyle has a huge impact on health. You can make personal choices related to your lifestyle. Even minor changes can be beneficial even though making health-promoting choices may not always be simple and easy in your personal life situation. In this section, lifestyle is described based on your responses to our questionnaires.

You should include some **physical activity** in your everyday life and should avoid being sedentary, e.g. sitting, for long continuous periods. It is recommended that you engage in endurance-type of physical activity that causes reasonable strain, such as walking, for at least 2 hours 30 minutes per week. You should engage in more intensive exercise, such as running, for at least 1 hour 15 minutes per week. Your weekly routine should include engaging in exercise that maintains your muscular strength and balance, including walking up/down stairs, dancing, muscle strength training or fitness class.

A recommended diet is diverse and varied. You should consume at least half a kilogramme of **fruit, berries and vegetables** each day, amounting to around 5–6 portions (1 portion = e.g. an average-sized fruit or a handful of berries, grated vegetables or vegetables as a side dish). Around half of the daily amount should consist of fruit and berries, and the remaining share of vegetables, eaten fresh or used as ingredients in cooked meals. To ensure that you eat enough unsaturated fats, it is recommended that your **spread for bread** is a vegetable oil-based fat spread with at least 60% fat content. You should use a vegetable oil-based salad dressing. Nuts and seeds also contain high-quality fat, and you are recommended to eat around two tablespoons of unsalted and varied nuts and seeds every day (around 200 g per week). **The cooking fat** you use when necessary should be a vegetable-based, runny vegetable oil product (so-called bottled margarine) or a vegetable oil-based spread with at least 60% fat content.

You can reduce your **salt intake** by diversely using other spices that do not contain salt, including herbal spices, vegetables as seasoning, peppers, onion, tomato paste, vinegars etc. Some Finns have low iodine intake, and the salt you use should thus include iodine. It is recommended that you read the labelling on food products as they contain a lot of useful information to support making good choices.

The normal **amount of sleep** for adults is 7–9 hours per night; however, the amount of sleep you need varies from person to person. Some people naturally sleep less, while others require more sleep. To ensure good sleep quality, you should avoid haste brought by a tight schedule, and make enough time for relaxation and your evening routines before going to bed. You should aim to get enough sleep for yourself each night to avoid the accumulation of a sleep deficit due to too short or unrefreshing sleep.

Smoking exposes you to a number of diseases. Giving up smoking is one of the most important health-promoting decisions a person can make. Specialist help for giving up smoking is available at health centres and occupational health care, among others. Nicotine replacement therapy or medications to address the physiological dependence on tobacco are recommended, in particular, to smokers who wish to quit smoking and are smoking over ten cigarettes per day and are heavily addicted to nicotine.

Excessive alcohol use also exposes you to different diseases and health risks. The risks grow with greater amount of alcohol used during a longer period of time or on individual occasions. The health risks of alcohol use have been found to be minor if the level of alcohol use does not exceed one standard drink per day for women and two for men. Avoiding drinking larger amounts of alcohol at a time (5–6 servings or more) also significantly reduces the risks.

Movement counter (accelerometer)

Results from the accelerometer represent your wake time physical activity and sleep. **Wake time physical activity** is categorized into three levels: 1) sedentary time and easy activity, for example sitting or standing, 2) moderate activity, for example walking or household activities, 3) intensive activity, for example running or fitness class. In the figure you find a presentation about how your daily physical activity was divided between the three levels. In addition you find the average result for all your measurement days and you can compare your results to the average in your own age group. The daily results are based on those days where the accelerometer had been used at least 10 hours during time awake.



Length of sleep-periods and proportion of actual sleep are described in the table. Sleep-periods are the longest periods that the accelerometer has identified as sleep. These periods consist of both time asleep and short times awake. If there is much time awake, the proportion of actual sleep becomes lower. The proportion of actual sleep is good to be at least 80%.

	Your sleep-period (hours, h and minutes, min)	Proportion of actual sleep (%)
Date		
Mean of your sleep-periods		
Your age group on average		

In total about 900 persons participated in the accelerometer measurements. The accelerometer that was used (Actigraph GT9X Link) measures activity at the wrist and the result is based on the intensity and frequency of movements in different dimensions minute-by-minute. The ways people move can be very different and so far it is not possible to distinguish different types of activity in the measurements. The result reflects your total daily physical activity. The more time you have spent sedentary the higher is the proportion of level 1 in the bars in the figure. Accordingly, the more time you have spent in moderate or intense activity the higher are the proportions of levels 2 and 3 in the bars. High sedentary time and lack of physical activity in everyday life puts your health at risk over time by for example reducing daily energy expenditure, disturbing sugar metabolism and reducing the functional capacity of heart and lungs and musculoskeletal system. One can increase daily physical activity by using

the stairs instead of the elevator, walking or biking errands or parts of them and avoiding spending long time siting for example in front of the television.

The length of the sleep-period is defined based on the accelerometer. If there has been substantial amounts of movement or the device has not been in use some sleep-periods may falsely have become too short or they have not been identified at all. It is also difficult for the accelerometer to separate between sedentary time and sleep so if you for example have watched TV right before going to bed this can have been included in the sleep-period. For adults it is recommended that sleep-periods are 7 to 9 hours. For most people this duration is enough to avoid sleep deficit that develops as a result of too short or unrefreshing sleep. The proportion of actual sleep should be between 80 and 95%.

More information about the accelerometer measurements is given by researcher Heini Wennman (phone: 029 524 8218), available Mondays and Wednesdays at 10-11 a.m. during the 1st February until 28th March, 2018.

Risk tests

Based on your information (measurements and questionnaire responses), we have assessed your risk to develop diseases that are common in Finland and for whose risk factors there is solid research evidence. These tests have been developed based on data collected in previous population studies. The diseases typically develop due to a combined impact of lifestyle and genetics, and the same lifestyle choices are related to a risk for multiple diseases. If you are at an increased risk, you can usually reduce your risk for the disease by changing your lifestyle.

	Interpretation	Your result	Your group in general: proportion (%) of those whose result indicates a high risk
Myocardial infarction/coronary heart disease	Above 10% = high risk		
Stroke	Above 10% = high risk		
Myocardial infarction/coronary heart disease or stroke	Above 10% = high risk		

Coronary heart disease and cerebrovascular disorders are among the most common cardiovascular diseases. Coronary circulation is most typically weakened due to the calcification of arteries. This is affected by lifestyle choices, including smoking and the quality of the fat in diet as well as blood pressure. Coronary heart disease can manifest as, for example, a myocardial necrosis, myocardial infarction and angina pectoris. Cerebrovascular disorders refer to a permanent or temporary weakening of cerebral circulation or an intracerebral haemorrhage. These conditions lead to brain function disorders, such as reduced cognition and stroke symptoms. You can use the FINRISK calculator to assess your likelihood of having a myocardial infarction or a severe cerebrovascular disorder within the next ten years. The risk calculation takes into account your age, gender, smoking status, total cholesterol, HDL cholesterol, systolic blood pressure, type 2 diabetes status and whether either of your parents has had a myocardial infarction before the age of 60. The result of the calculator illustrates your risk for developing the diseases within the following 10 years. If your results indicate a substantial risk and you are not currently monitored or receiving treatment due to your elevated blood pressure or disorders of lipid metabolism, or if you are a smoker, we recommend you to contact your health centre, health station or occupational health care provider. Further information: www.thl.fi//finrisk-calculator

Risk tests for type 2 diabetes, risk for developing type 2 diabetes within the next 10 years

Your result	Your age group in general:
	mean
	Your result

Type 2 diabetes (also called Adult Onset Diabetes) is a serious hereditary disease. Lifestyles have a significant impact on the onset of the disease. Excessive weight, particularly abdominal fatness, low physical activity, unhealthy eating habits and smoking increase the risk for the disease. You can use the diabetes risk test to assess your risk of developing type 2 diabetes within the next 10 years. The test takes into account your age, waist circumference, intake of fruit and vegetables, physical activity, diabetes in your family, medication you take for high blood pressure and diagnosed elevated blood glucose level. If your score is 15 or above, we recommend you to contact your health centre, health station or occupational health care provider. For more information about the test and means to reduce your risk at developing diabetes, see:

www.diabetes.fi/terveydeksi/diabeteksen_ehkaisy/riskitesti and www.stopdia.fi (the risk calculator in Finnish) https://www.diabetes.fi/en/finnish_diabetes_association (information on diabetes in English)

Risk test for memory disorders, risk for developing a memory disorder within the next 10 years

Interpretation	Your result	Your age group in general:
		mean
10 points or above = elevated risk		

Diseases which cause memory and other cognitive systems to degenerate are called **memory disorders.** Progressive memory disorders often lead to dementia. A memory disorder risk test can be used for assessing a person's risk for a memory disorder. The test is intended for 39–64-year-olds, and it estimates the person's risk for developing a memory disorder within the following 20 years. The test takes a number of risk factors for memory disorders into account: high cholesterol, obesity, high blood pressure, low physical activity as well as background information such as age, gender and education. Your total test score will indicate whether you have an elevated risk for developing a memory disorder. It might be possible to reduce the risk for a memory disorder with healthy lifestyle choices. Further information: http://www.thl.fi/en/web/chronic-diseases/memory-disorders

If any of the risk tests indicates that you have an elevated risk for a chronic disease, you should consider changing your eating habits, particularly the quality of the fat and fibres you consume, your chances of avoiding or reducing overweight, increasing physical activity, and not smoking. Using your brain diversely at every age and protecting your brain against injuries is also beneficial for promoting brain health and cognitive functions.

At the aforementioned websites you can test how possible changes to your lifestyle would affect your risk for the diseases. The results of the tests available at the websites and the population group comparisons in this profile may slightly differ from the present health profile whose results have been calculated on the basis of the FinHealth 2017 data. The tests at the websites are based on data collected in previous population studies.

Functional ability

Visual acuity and hearing

	Your result	Your age group in general:
		proportion (%)
Distance vision (test result)		good among xx% (reading of at least 1.00)
Near vision (test result)		good among xx% (reading of at least 1.00)
Hearing (self-reported)		xx% experienced no difficulties

The visual acuity tests measured the accuracy of your vision, both eyes together (with spectacles, if normally worn) near and distance. If your vision has diminished and you have not visited an optician or an ophthalmologist within a year, we recommend that you make an appointment for a more thorough vision examination.

The hearing test result is based on your answer to a question concerning whether you find it difficult to hear a conversation between several people. If your hearing has diminished and hinders your functioning, please contact your health centre for more detailed examinations.

Functional Status

	Your result	Your age group in general:
		mean or proportion (%)
Hand grip strength (kg)		xx (mean)
Chair stand 10 times (seconds)		xx (mean)
Squatting		No difficulty for xx%
Internal rotation of upper arm, right side		No difficulty for xx%
Internal rotation of upper arm, left side		No difficulty for xx%

The hand grip strength test measured the muscle strength of the hand, and is usually also good indicator of general muscular strength. In the test, your hand grip was measured twice, and the better of the two results is presented on the table. The chair stand is a functional test that requires strength, balance and endurance. In the test you were asked to stand up ten times. If you could manage this, the time spent to complete the test is indicated on the table. Squatting measures the functional capacity of the lower extremities. You were asked to squat down and get up. Your ability to squat is indicated on a three-category scale on the table. The internal rotation of upper arm measures the mobility of your shoulder joint. At the test, you were asked to move your arm behind your back towards your shoulder blade. The result presented on the table indicates whether or not you could perform this movement.

While these tests performed at a health examination are considered good at describing the physical functioning of the population, they are mostly only indicative at the individual level. You can compare your results with others in your age group and consider whether you should improve your functional ability in some area. Functional ability deteriorates as people grow older, which also makes it harder to manage everyday issues. However, exercise and

other physical activity help sustaining physical ability even at an advanced age. While it is beneficial to adapt a lifestyle that maintains and improves your functional ability when you are still young, starting a suitable form of exercise is also advisable at an older age. You can ask about opportunities for physical exercise in your home municipality by contacting your health centre or municipal sports services.

Tasks assessing information processing

	Your	Your age group in general:
	result	mean
Word fluency: number of animals listed		
Learning a word list: number of words recalled after the third showing		
Number of words recalled after a delay		

Two separate assignments assessing information processing functions were performed at the health examination. One of the tasks concerned word fluency and the other involved learning a word list, which included reading through a list of words three times and memorising the words. In addition, you were requested to recall the words after a short delay. The table presents your personal results and the average rates among your age group for the word fluency and word list assignments.

The overall level of your information processing functions cannot be assessed based on individual tasks, as reliable assessment would require the completion of multiple different tasks as well as the assessment of other relevant issues. Many different factors also influence your performance, including your alertness during the examination, focusing and possible external nuisance factors. Nevertheless, if you have felt concern about issues such as your memory function in other contexts, you may consult your health centre, for example, and they can further investigate the issue.

Mental health

In our questionnaire form, you were asked questions concerning mental strain. Mental strain can manifest as, for instance, feelings of worry and melancholy or difficulties in coping with life's problems. While mental strain can be related to a currently stressful life situation, it can also be linked to issues such as depression or anxiety. Based on your responses in the questionnaire, one of the three following versions will be used in the health profile:

1) Based on your responses, you were not experiencing significant mental strain during your participation in our study. A lot of time has passed since your participation, and your situation might have changed since then. If you wish, you can use the MentalHub website, which is available for everyone, to access self-assessment tools and find further information about mental health (www.mielenterveystalo.fi/aikuiset/itsearviointi).

2) Your results suggested that you were experiencing mental strain when you participated in the study. A lot of time has passed since your participation, and your situation might have changed since then. You can use the MentalHub website, which is available for everyone, to access self-assessment tools that provide further information about symptoms (www.mielenterveystalo.fi/aikuiset/itsearviointi). MentalHub also includes self-care instructions and further information about other forms of treatment. If you are worried about your mental wellbeing, you can also contact a health centre or your occupational health care provider, for instance, which can further investigate the issue.

3) Based on your results, you were experiencing mental strain when you participated in the study. A lot of time has passed since your participation, and your situation might have changed since then. You can use the MentalHub website, which is available for everyone, to access self-assessment tools that provide further information about your symptoms and their treatment (www.mielenterveystalo.fi/aikuiset/itsearviointi). You can also directly contact a health centre or your occupational health care provider, for instance, which can further investigate the issue.

Conclusion

We wish that this health profile will help you to reflect on issues that affect your personal health and consider the changes that might be necessary for you to influence your health. If you wish, you may present this health profile to your doctor or public health nurse. The National Institute for Health and Welfare will not disclose your personal health profile to anyone else but you. For research purposes, your information will always be used in a way that ensures your anonymity.