

Fitness Level

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AGENDA

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02 Benefits

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04 Reliability of Fitness Level

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06 Follow-up and Project Summary

FIRSTBEAT FITNESS LEVEL

- A feature in Lifestyle Assessment that estimates the client's maximal oxygen uptake (VO2max) or aerobic fitness.
- Fitness Level is estimated automatically if the Lifestyle Assessment includes at least 30 mins of continuous walking.
- Good aerobic fitness is associated with better health. Poor fitness correlates with increased risk of mortality and lower work ability.
- A safe, easy way to measure fitness - does not require maximal effort!

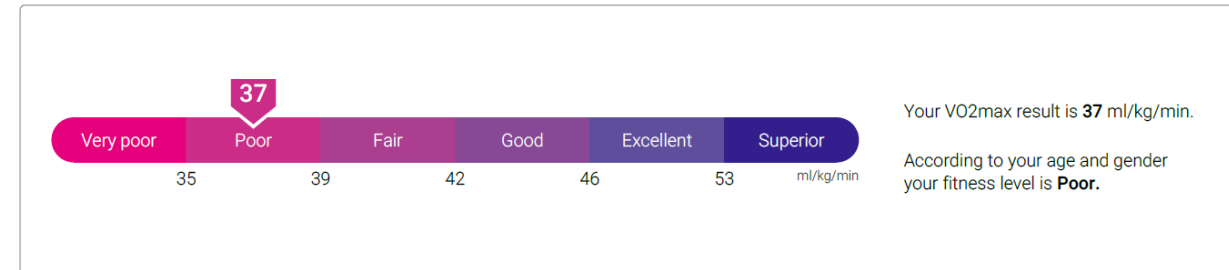
FITNESS LEVEL

Person: 13 Kuntotaso

Age	45	Activity Class	6.0 (Good)
Height (cm)	187	Resting heart rate	56
Weight (kg)	108	Max. heart rate	181
Body Mass Index	30.9		

Assessment: 12.04.2018 - 14.04.2018

FITNESS LEVEL (VO2max)



Maximal oxygen uptake (VO2max) – A measure of aerobic fitness

Maximal oxygen uptake (VO2max) describes the ability of the cardiorespiratory system to deliver oxygen to working muscles and the ability of the body to utilize oxygen to produce energy during exercise. High maximal oxygen uptake means good endurance, which research has shown to be associated with better health and performance and smaller mortality risk.

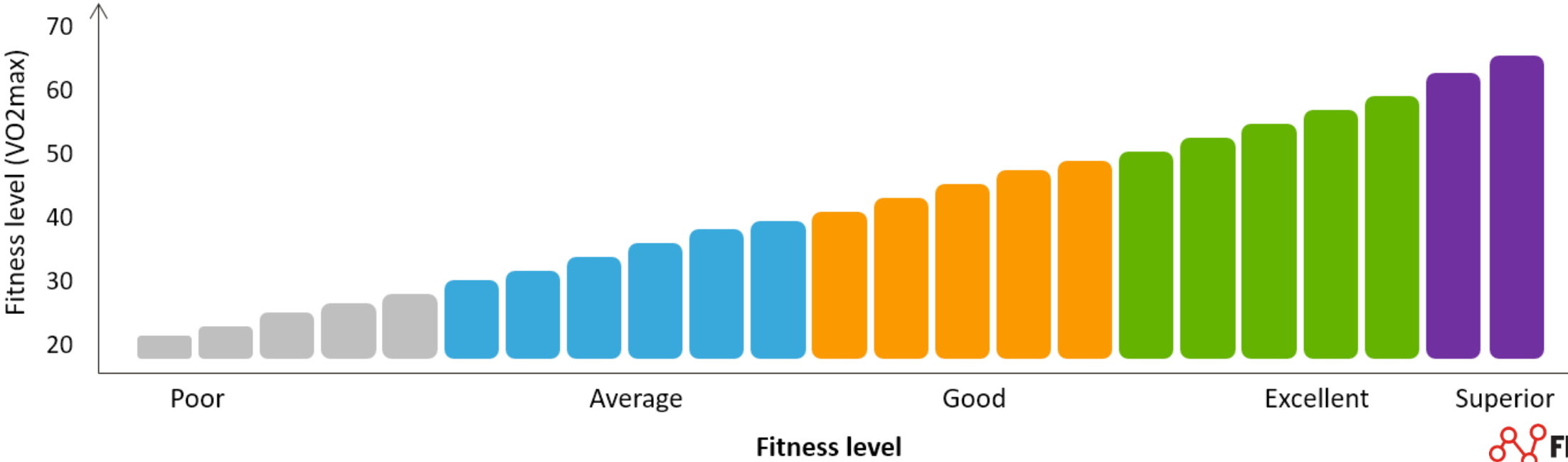
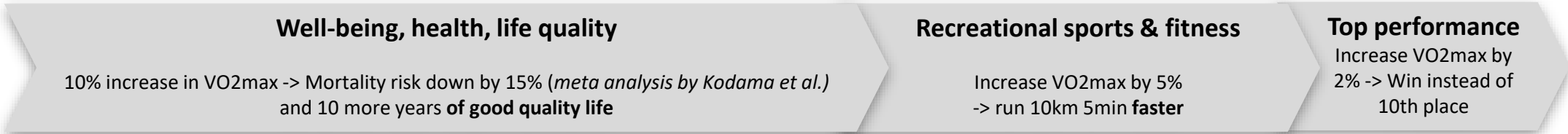
Maximal oxygen uptake is traditionally measured in the laboratory by analyzing respiratory gases, and its unit is milliliters of oxygen per minute per kilogram of body weight (ml/kg/min). Firstbeat Lifestyle Assessment estimates the maximal oxygen uptake by comparing the body's load to walking speed during walking segments detected in the measurement. The result is compared to people of the same age and sex. Typically, maximal oxygen uptake ranges between 20-70 ml/kg/min.

*VO2max reference values used with permission from the Cooper Institute, Dallas, Texas



AEROBIC FITNESS (ENDURANCE) IS
IMPORTANT FOR EVERYONE

High VO2max = good endurance → associated with better health & performance, reduced mortality risk.



BENEFITS OF FITNESS LEVEL

- **Objective** information about current aerobic fitness.
- **Guides** to make appropriate lifestyle changes, considering the client's current fitness and recovery status.
- **Supports** personalized, realistic physical activity guidance.



CLIENT INSTRUCTIONS

- **Walk** at least 30 minutes **continuously** at any time during your 3-day assessment.
- **Walk** at moderate – brisk pace on flat terrain or on a treadmill. Avoid heavy loads, talking and stopping. Do **not run** or Nordic walk.
 - Steady pace - your result will not improve if you try to go as fast as possible.
 - Mark your Fitness Level walk in your journal.
 - You can walk several times during the measurement, but the report will only show one result.
- **Contraindications:** a condition that limits your ability to walk, Beta-blocker medication or if you don't do any exercise
- You can complete the Lifestyle Assessment without Fitness Level estimation



THE RESULT CAN BE UNDERESTIMATED FOR THE FOLLOWING REASONS

EXTERNAL FACTORS

- Nordic walking
- Gradual uphill / hilly terrain / walking in the forest (or FL cannot be calculated at all)
- Carrying a load (backpack, shopping bags...)
- Exercise just before the walk (heart rate elevated)
- Warm-up that increases the heart rate
- Pushing a stroller
- Treadmill with an uphill grade
- Uneven or icy surface
- Talking a lot

INTERNAL FACTORS

- Alcohol, nicotine, caffeine
- Flu, fever
- Heavy meal just before the walk
- Dehydration
- Hot weather
- Medicine that increases the heart rate
- Overload, overtraining, heavy training period
- Heavy stress
- Allergy season

If a lower maxHR than the client's real maxHR is registered in the background info, or if the client's weight has been overestimated (VO2max is calculated as ml/kg/min), Fitness Level will be underestimated. If needed, you can adjust the background info and create the report again.

THE RESULT CAN BE **OVERESTIMATED** FOR THE FOLLOWING REASONS

In general, all factors that lower the heart rate can overestimate the Fitness Level.

These factors can include the following:

- Stopping a lot during the walk (e.g. walking a dog or in traffic lights). If there are too many stops, Fitness Level cannot be determined.
- Medications that decrease the heart rate (beta blockers)
- Lower maxHR than the age-based estimate. You can fix this by dropping the maxHR manually.
- Weight that has been marked as too low.

FITNESS DEVELOPMENT FOR DIFFERENT FITNESS LEVELS

Very poor	Poor	Fair	Good	Excellent	Superior
<p>Even a small increase in habitual daily activity will improve your fitness.</p> <p>Aim for some daily physical activity every day, for example in 10-min segments.</p> <p>Try to cover short transits by walking or biking (to lunch or the store, use stairs etc). Also house cleaning and gardening are excellent forms of daily activity.</p>	<p>Your fitness will improve with light physical activity.</p> <p>Try to do some light physical activity every day, for example in 10-15-min segments.</p> <p>E.g. Walking, swimming or stretching for 15-30 mins at a time several times per week is a safe way to start getting more active.</p>	<p>To improve your fitness, you sometimes need to change the intensity from light to moderate.</p> <p>Do some physical activity on most days of the week, app. 30min at a time.</p> <ul style="list-style-type: none"> • Endurance activity 3-4 x / week. • Strength / motor fitness at least 2 x / week. 	<p>Improving your fitness requires some physical activity almost daily, including more strenuous exercise regularly.</p> <p>Exercise on most days of the week, app. 30-60min at a time. A couple of times per week more strenuously.</p> <ul style="list-style-type: none"> • Endurance exercise 3-5x / week. • Strength and motor fitness 2-4 x / week. • Remember flexibility! 	<p>Improving your fitness requires many-sided training, alternating between easier and harder workouts and good management of the overall load.</p> <p>Exercise on most days, app. 45-75 min at a time. Include a variety of workouts to develop endurance, strength, speed, mobility and coordination. Pay attention to rhythm and sufficient recovery.</p>	<p>To further improve your fitness, you need to train hard and systematically, alternate between hard and easy workouts and pay attention to details + nutrition and recovery.</p> <p>Exercise almost daily, app. 45-90 min at a time. Include a variety of workouts to develop endurance, strength, speed and agility. Pay attention to a smart training rhythm and sufficient recovery.</p>
<p>Good activities:</p> <ul style="list-style-type: none"> • Yard work / gardening • Walking • Swimming • Cycling 	<p>Good activities:</p> <ul style="list-style-type: none"> • Walking • Swimming, hydrobics • Cycling 	<p>Good activities:</p> <ul style="list-style-type: none"> • Nordic walking, cycling • Swimming, hydrobics • Dancing • Yoga, pilates • Gym training 	<p>Good activities:</p> <ul style="list-style-type: none"> • Running, cycling, Nordic skiing • Ball games • Group exercise • Gym training • Yoga, pilates 	<p>Good activities:</p> <ul style="list-style-type: none"> • Running, cycling, Nordic skiing • Ball games • Gym training, crossfit • HIIT: bounding, jumps, stairs 	<p>Good activities:</p> <ul style="list-style-type: none"> • Running, cycling, Nordic skiing • Ball games • Gym training, crossfit • HIIT: bounding, jumps, stairs

RELIABILITY OF FITNESS LEVEL

- Fitness Level is based on an algorithm that monitors the relationship between walking speed and heart rate. The Bodyguard2 device has an accelerometer that measures movement.
- In our pilot studies, the mean error to laboratory results has been **6–9%**. This means app. **+/- 3 ml/kg/min**.
- The most accurate result is reached if the walk is performed on flat terrain.
- Fitness Level in Lifestyle Assessment is an easy-to-conduct & accurate estimation of your aerobic fitness level for practical purposes.
- It does not replace a maximal fitness test for athletes or for determining aerobic & anaerobic training zones.

FOCUS ON WELL-BEING

NOT LIKE THIS!

“You're in bad shape. That is why your recovery is poor and you have a lot of stress”...

LIKE THIS:

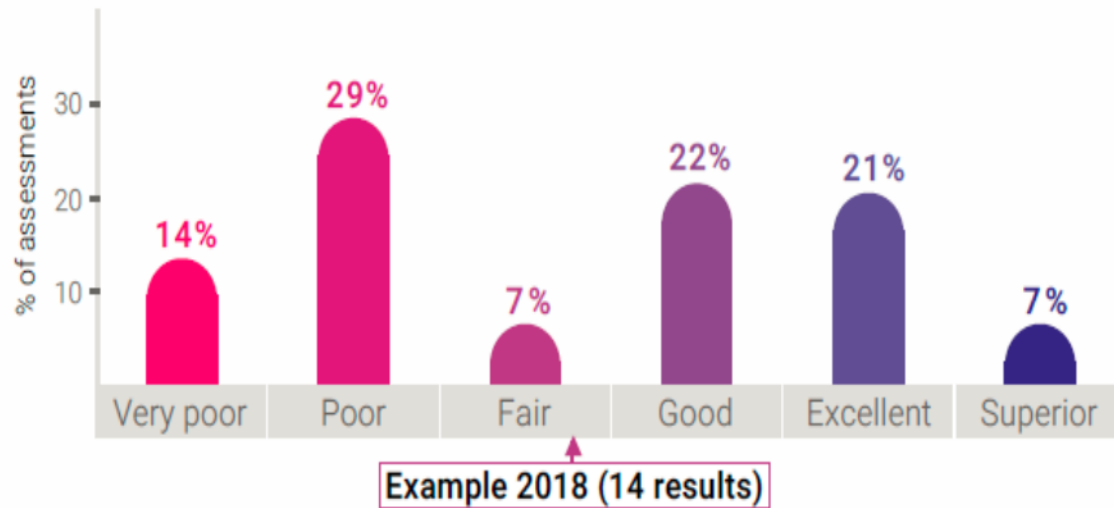
“Your days look quite busy and stressful and it probably affects your recovery. Let's discuss ways to improve your stress management and recovery.”

→ **Improving** your fitness level even a little can help: good fitness is related to better recovery!



FOLLOW-UP AND PROJECT SUMMARY

Estimated fitness level - Group results



LIFESTYLE ASSESSMENT - FOLLOW-UP



You have it in you.

