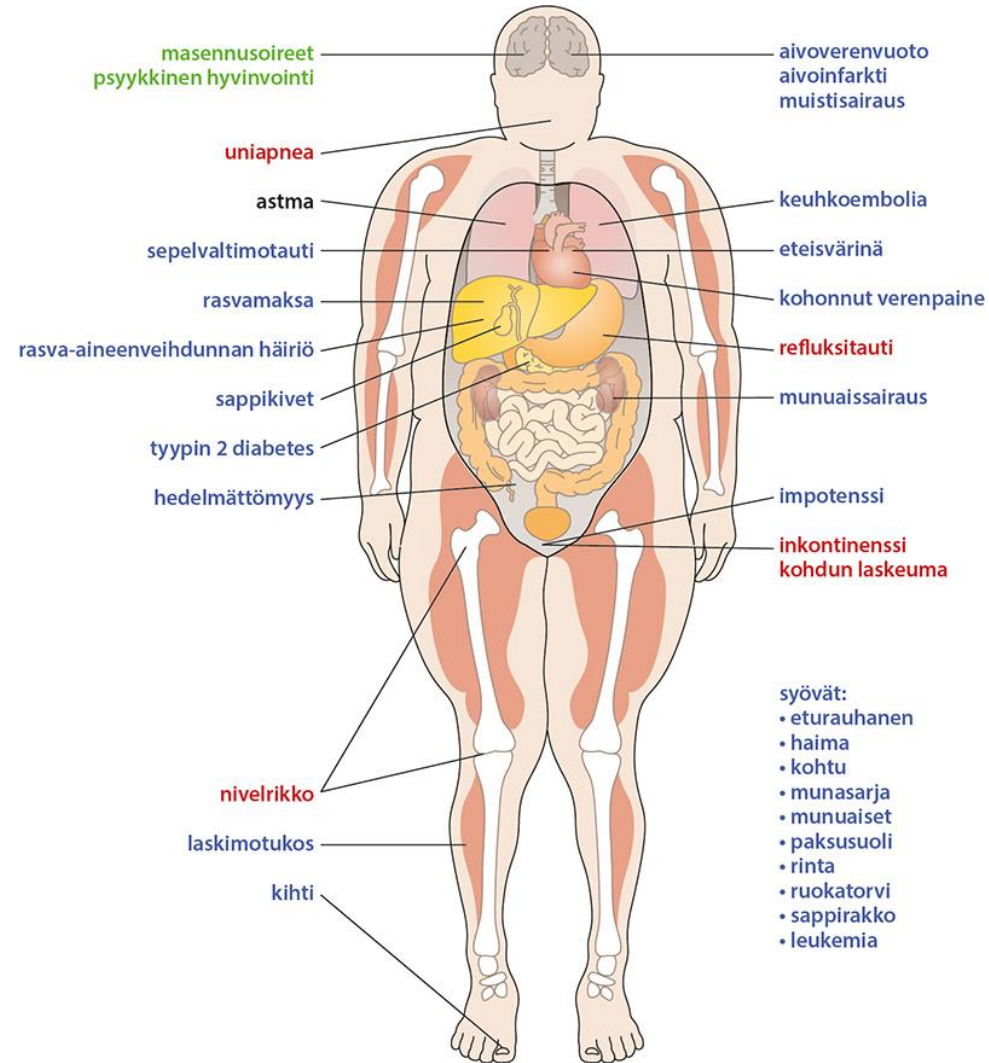


# Liikuntalääketieteen poliklinikka - esimerkki julkisesta terveydenhuollosta

**Merja Perhonen**  
**LT, dos., ylilääkäri**  
**Liikuntalääketieteen poliklinikka**  
**Sairaala Nova, Jyväskylä**  
**Keski-Suomen hyvinvointialue**

# Lihavuuteen liittyviä terveydellisiä ongelmia



# Liikuntalääketieteen poliklinikka



- Aloitti toimintansa Keski-Suomen keskussairaalassa 9/2016
  - Keuhkosairauksien pkl, uniapneapotilaat → oma poliklinikka 3 pv:nä/vko
- Suomen ensimmäinen ja ainoa liikuntalääketieteen poliklinikka erikoissairaanhoidossa
  - ensimmäinen erikois- ja erikoistuvan lääkärin virka
    - Ylilääkäri, erikoistuva lääkäri, fysioterapeutti ja sihteeri
  - 93 Liikuntalääketiede, LIIKUNTALÄ -> LIIKUN

# Liikuntalääketieteen poliklinikka

- Erityisasiantuntemusta vaativien potilaiden liikuntahoito Keski-Suomen hyvinvointialueella
  - Lähetteet sairaalan muilta poliklinikoilta 80%
    - Konservatiiviset: endokrinologia, kardiologia, keuhkosairaudet, gastroenterologia, nefrologia, hematologia, ihotaudit, infektiosairaudet, reumatologia, neurologia, fysiatria, syöpätaudit, psykiatria, somatopsykiatria, kuntoutustutkimusyksikkö, kipupoliklinikka, lastentaudit, päivystys
    - Operatiiviset: ortopedia, gastrokirurgia, thoraxkirurgia, käsikirurgia, naistentaudit, lastenkirurgia, plastiikkakirurgia
  - Lähetteet perusterveydenhuollosta 12%
  - Lähetteet YTHS:ltä ja työterveydestä 5%
  - Lähetteet yksityisestä terveydenhuollosta 3%
- Eri sairausryhmien liikunnan erityisohjeet
  - Yhteistyö kaupunkien ja kuntien liikuntaneuvonnan kanssa

# Liikuntalääketieteen poliklinikan hoitopolut

## 1. Painonhallintapolku

- Yli- ja alipaino, raskaustoive

## 2. Liikuntapolku

- Väsymys, syöpä, muut vakavat sairaudet

## 3. Urheilija/liikkujapolku

- Esim. rasitusmurtumat, ylikunto

## 4. Lihavuusleikkaushoitopolku

### • Seurantakäynnit

- Painonhallintapolku: Ensikäynti, 3, 6 ja 9-12 kk
- Lihavuusleikkauspolku: pre- ja post op käynnit
- Muut polut: kontrollit tarpeen mukaan
- Yksilöllisyys

### • Moniammatillinen yhteistyö

- Lääkärit, fysioterapeutit, ravitsemusterapeutit, liikuntapsykologit

# Tutkimus- ja koulutusyhteistyö



- Jyväskylän yliopisto, liikuntatieteellinen tiedekunta
  - LIPO-tutkimus
    - Suolistomikrobitutkimus – FT, akatemiatutkija Satu Pekkala
    - Endoteeli ja liikunta – FT, apulaisprofessori Riikka Kivelä
    - Lihavuuden stigma – FT, apulaisprofessori Hannele Harjunen
  - Opiskelijoiden harjoittelu
    - Liikuntalääketieteen ja liikuntapsykologian opiskelijat
- FILHA
  - Uniapnea ja elintapamuutos, kustannusvaikutukset
- Sydänsairaala Nova Jyväskylä
  - Eteisvärinä ja elintapamuutos

## Exercise Medicine Clinic in a Hospital: Follow up of Sleep Apnea and Overweight Patients

Perhonen M.A.<sup>1,2,3</sup>, Kuha T.T.<sup>1</sup>, Valtonen M.K.<sup>3</sup> and Laukkanen J.A.<sup>4,5</sup>

<sup>1</sup>The Wellbeing Services County of Central Finland, Hospital Nova, Department of Exercise Medicine, <sup>2</sup>Univ. of Jyväskylä, Faculty of Sports and Health Sciences, <sup>3</sup>Finnish Institute of High Performance Sport KIHU, <sup>4</sup>The Wellbeing Services County of Central Finland, Hospital Nova, Department of Medicine, Jyväskylä, Finland and <sup>5</sup>Institute of Clinical Medicine, Department of Medicine, Univ. of Eastern Finland, Kuopio, Finland

### ABSTRACT

Physical activity (PA) has a variety of health-promoting effects. However, physical exercise (PE) is not comprehensively used as a treatment of diseases in primary health care and hospitals. Our Exercise Medicine Clinic (EMC) is the first specialized multi-professional outpatient clinic in Finland to implement PE as a part of the treatment of patients in a public hospital. We present preliminary data on overweight (OW, BMI>30 kg/m<sup>2</sup>, n=106) and obstructive sleep apnea (OSA, n=81) patients who have attended EMC real life exercise medicine protocol with follow-up period for 6 months. Among OSA patients all symptoms, especially subjective daytime tiredness and sleepiness (STDS) reduced significantly after 6 months in those who had increased PA. In OSA patients who had increased PA, body weight (BW), BMI and visceral fat area (VFA) decreased significantly, and 6 min walk test (6MWT) distance and hand grip strength (HGS) in right and in left hand improved significantly. After 6 months in those OW patients who increased PA, BW, BMI and VFA decreased significantly, and 6MWT and HGS in right hand improved significantly. Improvements in body composition, functional capacity and symptoms in OSA and OW patients indicate that it is possible to increase PA level, subjective well-being and quality of life in a real life situation, even if the patient has had sedentary lifestyle and multiple disabling diseases.



### INTRODUCTION

- Overweight (OW) and obstructive sleep apnea (OSA) are large public health problems and are connected to many chronic diseases.
- Regular exercise training is an important treatment for prevention and care of OW and its comorbidities.
- Increasing exercise and decreasing sedentary behavior in daily life requires often individual exercise counselling.
- Our Exercise Medicine Clinic is the first outpatient clinic in a public hospital in Finland.
  - We give individual exercise programs and follow-up our patients up to 12 months.
- This study shows results from patients with OW and OSA who got individual multi-professional real-life exercise guidance for follow up period of 6 months.

### METHODS

- OSA (n=81) and OW (BMI>30 kg/m<sup>2</sup>, n=106) patients participated in this study.
  - Patients were divided to two groups in both patient groups: those who increased exercise (PA Increase) and those who did not increase exercise (No PA Increase).
- Body composition analysis (bioimpedance, Biospace InBody 770) was used to measure body weight (BW), BMI, visceral fat area (VFA). 6-minute walking test (6MWT) and hand-grip strength (HGS) were used to assess functional capacity.
- Self-reported questionnaires were used to evaluate physical activity (PA) in all patients and subjective daytime tiredness and sleepiness (STDS) in OSA patients.

VISCERAL FAT IN OW PATIENTS

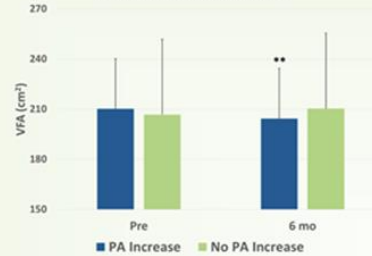


Fig. 1. Visceral fat area (VFA) before (Pre) and after follow up for 6 months (6 mo) in overweight (OW) patients who increased physical activity (PA) and did not increase PA. \*\*P<0.01 in OW patients who increased PA between pre and 6 mo.

6 MIN WALK TEST IN OW PATIENTS

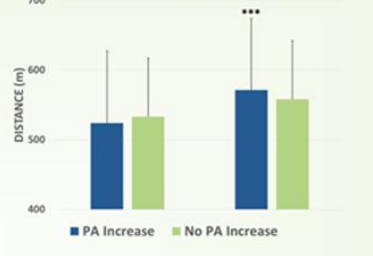


Fig. 2. 6 min walk test distance before (Pre) and after 6 months (6 mo) follow up for 6 months in overweight (OW) patients who increased physical activity (EX+OW) and did not increase physical activity (EX-OW). \*\*\*P<0.001 in patients who increased PA between pre and 6 mo.

VISCERAL FAT IN OSA PATIENTS

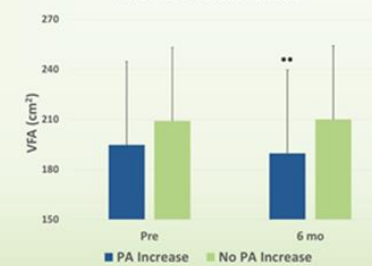


Fig. 3. Visceral fat area (VFA) before (Pre) and after follow up for 6 months (6 mo) in patients with obstructive sleep apnea (OSA) who increased physical activity (PA) and did not increase PA. \*\*P<0.01 in OSA patients who increased PA between pre and 6 mo.

6 MIN WALK TEST IN OSA PATIENTS

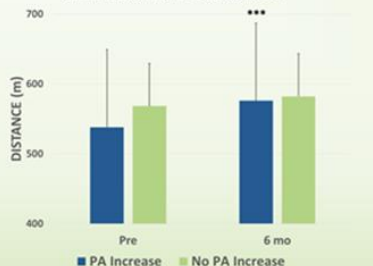


Fig. 4. 6 min walk test distance before (Pre) and after follow-up for 6 months (6 mo) in patients with obstructive sleep apnea (OSA) who increased physical activity (PA) and did not increase PA. \*\*\*P<0.001 in OSA patients who increased PA between pre and 6 mo.

### RESULTS

- The total number of OW patients was 106.
  - PA increased n=60 and No PA Increase n=46.
  - Mean age in all OW patients was 50.6±13.1 and 53% were women.
- The total number of OSA patients was 81.
  - PA Increased n=49 and No PA Increase n=33.
  - Mean age in all OSA patients was 51.9±10.7 and 47% were women.
  - Among OSA patients who increased PA all symptoms, especially SDTS, were reduced (p<0.001) after 6 months.
- Main results are shown in Table 1 and Fig. 1-4.

Table 1. Body weight (BW), body mass index (BMI), hand-grip strength (HGS) in right (dx) and left (sin) hand in overweight (OW) and obstructive sleep apnea (OSA) patients before and after follow up for 6 months (6 mo). ns= not significant.

	Increase in Physical Activity			No Increase in Physical Activity		
	Pre	6 mo	P	Pre	6 mo	P
<b>OW patients</b>						
BW (kg)	102.6±21.1	100.5±20.9	<0.01	114.4±29.9	114.0±29.9	n.s.
BMI (kg/m <sup>2</sup> )	36.3±6.5	35.4±6.0	<0.001	36.9±6.5	36.9±6.7	n.s.
HGS dx (kg)	39.9±14.2	41.5±13.2	<0.01	44.8±12.5	44.9±13.5	n.s.
HGS sin (kg)	39.1±12.6	39.9±12.5	n.s.	41.9±11.6	42.4±12.8	n.s.
<b>OSA patients</b>						
BW (kg)	99.0±14.6	97.7±15.4	p<0.01	109.7±23.8	108.9±24.1	n.s.
BMI (kg/m <sup>2</sup> )	34.1±3.9	33.6±4.0	p<0.01	36.7±5.5	36.5±5.4	n.s.
HGS dx (kg)	42.2±15.2	44.2±14.4	p<0.01	45.1±12.4	44.6±11.8	n.s.
HGS sin (kg)	41.6±13.4	42.6±13.8	p<0.05	42.6±11.2	43.0±11.6	n.s.

### SUMMARY AND CONCLUSION

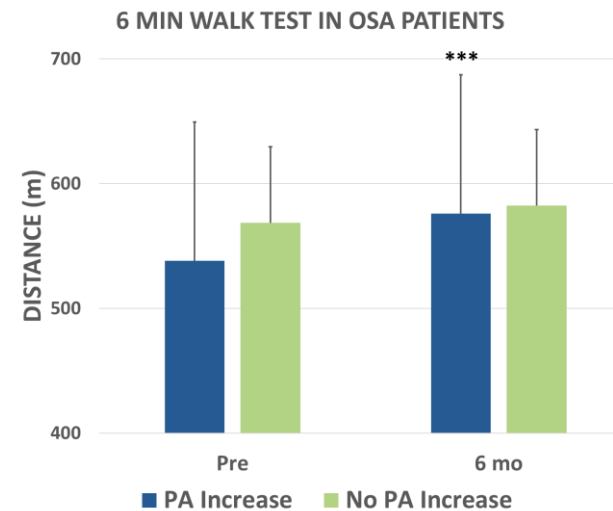
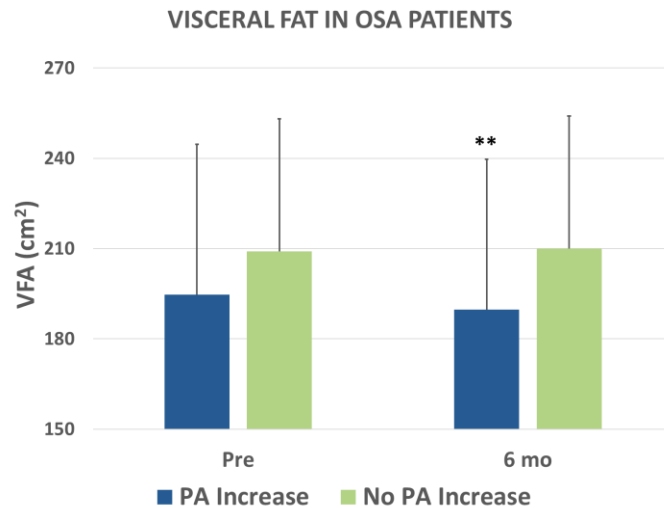
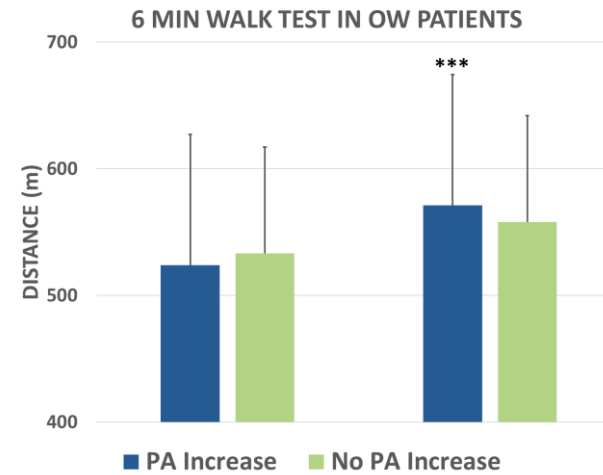
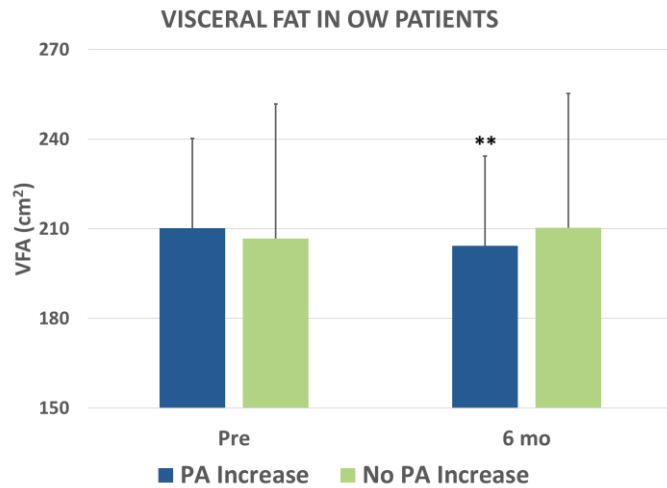
This real-life follow-up study shows improvements in body composition, functional capacity and symptoms in OSA and OW patients, and indicate that it is possible to increase PA level, subjective wellbeing and quality of life, even if the patient has had sedentary lifestyle and multiple disabling diseases.

### ACKNOWLEDGMENTS

We thank MSc Hanna Renkola and MSc Julia Ben Khalifa who have analyzed the original data.



# Tutkimustulokset – seuranta 6 kk





# Tutkimustulokset: seuranta 6 kk

## Increase in Physical Activity

<b>OW patients</b>	Pre	6 mo	<i>P</i>	Pre	6 mo	<i>P</i>
<b>BW (kg)</b>	102.6±21.1	100.5±20.9	<0.01	114.4±29.9	114.0±29.9	n.s.
<b>BMI (kg/m<sup>2</sup>)</b>	36.3±6.5	35.4±6.0	<0.001	36.9±6.5	36.9±6.7	n.s.
<b>HGS dx (kg)</b>	39.9±14.2	41.5±13.2	<0.01	44.8±12.5	44.9±13.5	n.s.
<b>HGS sin (kg)</b>	39.1±12.6	39.9±12.5	n.s.	41.9±11.6	42.4±12.8	n.s.

## No Increase in Physical Activity

<b>OSA patients</b>	Pre	6 mo	<i>P</i>	Pre	6 mo	<i>P</i>
<b>BW (kg)</b>	99.0±14.6	97.7±15.4	p<0.01	109.7±23.8	108.9±24.1	n.s.
<b>BMI (kg/m<sup>2</sup>)</b>	34.1±3.9	33.6±4.0	p<0.01	36.7±5.5	36.5±5.4	n.s.
<b>HGS dx (kg)</b>	42.2±15.2	44.2±14.4	p<0.01	45.1±12.4	44.6±11.8	n.s.
<b>HGS sin (kg)</b>	41.6±13.4	42.6±13.8	p<0.05	42.6±11.2	43.0±11.6	n.s.

# LIIKUNTA ON LÄÄKETTÄ!

# Kiitos

[www.hyvaks.fi](http://www.hyvaks.fi)

#hyvaks #hyväarkikaikille