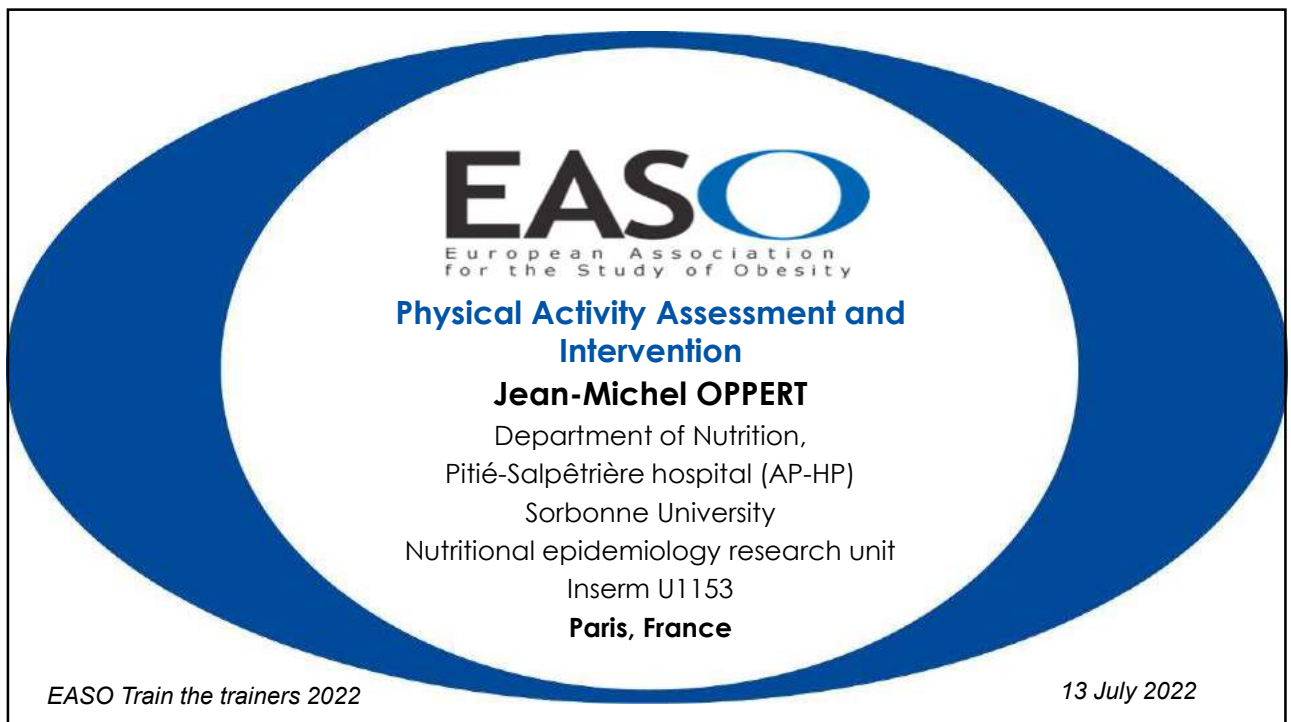




EASO
European Association
for the Study of Obesity

**Physical Activity Assessment and
Intervention**

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EASO Train the trainers 2022 *13 July 2022*

5 A's for counseling in persons with obesity (adapted)

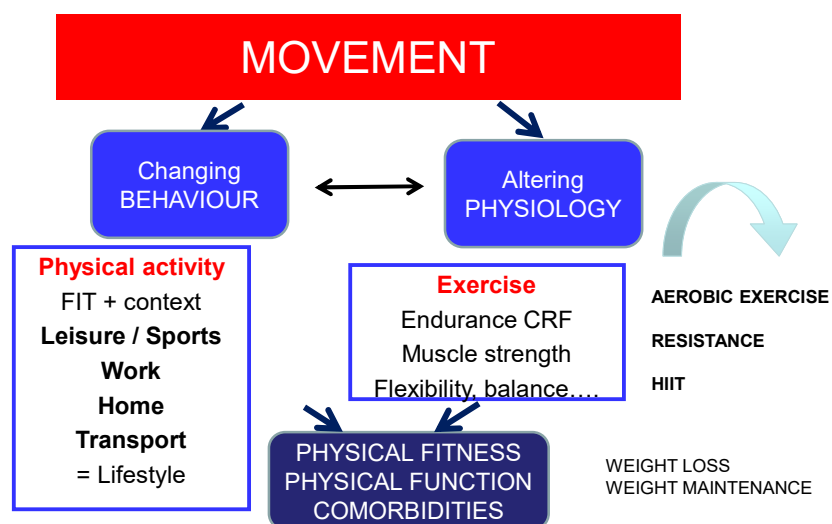
- ASK
- ASSESS
- ADVISE
- AGREE
- ASSIST (or Arrange)

Sturgiss & van Weel. *Can Fam Physician* 2017
Glynn & Manley. *NIH Publication* 89-3064. 1989

Physical activity **assessment** in persons with obesity

Ask:

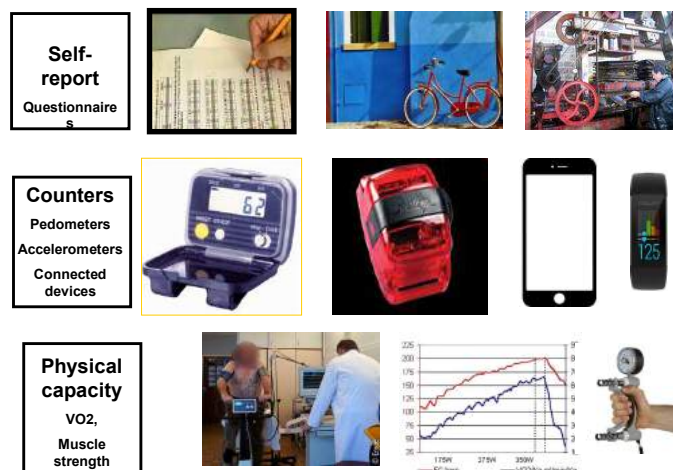
What kind of behaviour are we talking about? Are we thinking about to change?



Assess:

What PA is the patient currently doing/not doing?
What is the patient able to do?

Assessment



Accelerometers



	ActiGraph GT3X	ActivPAL
Size (cm)	4.6 × 3.3 × 1.5	5.3 × 3.5 × 0.7
Weight (g)	19	15
Memory	512 MB	16 MB
Duration recording	40 days	8 days
Measure	Acceleration	Acceleration
Location	Hip, wrist ankle	Thigh
Axes	Triaxial	Uniaxial
Parameters	Intensity activity EE, step, posture	Durée assis/couché, debout Step, cadence, posture changes, MET-h, PAL
Software	Actilife	ActivPAL
Cost	250 \$	620 \$

Strath et al. Circulation 2013

Activity classes - Accelerometry

Category	Counts/min
Sedentary	< 100
Light intensity	100 – 1 951
Moderate intensity	1 952 – 5 274
Vigorous intensity	> 5 274



Freedson et al. Med Sci Sports Exerc 1998

Physical capacity (CRF and strength) - obesity

	Lean n=82	Obese n=85	Severe Ob n=133	p
Age (y)	39.0 (11.8)	39.5 (11.4)	38.9 (12.4)	NS
BMI (kg/m ²)	22.1 (2.1)	32.3 (1.9)	40.7 (4.4)	.0001
VO ₂ p (L/min)	1.62 (0.46)	1.57 (3.72)	1.66 (3.72)	NS
VO ₂ p (ml/min/kg)	26.3 (6.3)	17.7 (3.9)	15.4 (3.6)	.0001
6-min distance	722.3 (64.3)	591.3 (54.2)	538.9 (67.6)	.0001
6-min speed	7.2 (0.6)	5.9 (0.4)	5.4 (6.8)	.0001
Knee extension	123.1 (28.9)	132.0 (26.9)	136.4 (29.8)	.005

N=300 women, mean (SD)

Hulens et al. *Scand J Med Sci Sports* 2003

Physical activity and fitness in persons with obesity

- Excess body weight, body fat, increased LBM
- Co-morbidities – Low quality of life
- Low habitual PA level (steps /d)
- Low % of subjects reaching recommendations
- Low CRF (relative)++
- Lower muscle strength (relative)

Physical activity and fitness

In persons with obesity + **Weight loss**

- Excess body weight, body fat, increased LBM 
- Co-morbidities – Low quality of life 
- Low habitual PA level (steps /d)
- Low % of subjects reaching recommendations 
- Low CRF++
- Lower muscle strength (relative) 

Questions (questionnaires)

- Professional occupation
- Domestic chores
- Transport habits (active transport, public transport, car+++)
- Leisure and sports (history, current)
- Sedentary behaviour (sitting time, screen time) in context
- = 3 to 5 minutes

Physical activity interventions in persons with obesity

Advise:

What are the effects of
PA/exercise training in persons
with obesity?

EASO Physical Activity Working Group

Effects of exercise training on obesity-related outcomes

Project coordinator: Jean-Michel Oppert
OMTF co-chairs: Luca Busetto, Dror Dicker
EASO Executive director: Euan Woodward

Experts

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Kristine Beaulieu - John Blundell (UK)
Andrea Ermolao - Francesca Battista (Italy)
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Volume 22, Issue S4

Special Issue: Exercise Training in
Management of Obesity in Adults:
Report from the EASO Physical
Activity Working Group

July 2021

FREE ACCESS!!!

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for the Study of Obesity

Exercise training and obesity-related outcomes

- Systematic search of published evidence + meta-analyses
- Controlled interventions, since 2010, P w Overweight or Obesity ≥ 18 y
- Defined research questions
- Evidence statements
 - Based on results of systematic reviews and meta-analyses
 - Rating strength of evidence: HIGH, MODERATE, LOW
- Recommendations
 - Based on evidence statements with high or moderate strength
 - Grading of recommendations:
 - A (strong), B (moderate), C (weak)...

Oppert et al. *Obes Rev* 2021

Recommendations – Weight and body composition

Weight and fat loss, visceral adipose tissue

- GRADE A** • Advise preferentially an exercise training programme based on **150 to 200 min of aerobic exercise at least at moderate intensity**.
- GRADE A** • Inform persons with overweight or obesity that expected weight loss is on average not more than 2 to 3 kg.

Weight maintenance after weight loss

- GRADE E** • Advise a **high volume of moderate-intensity aerobic exercise** (200-300 min/wk)

Preservation of lean body mass during weight loss

- GRADE A** • Advise an exercise training programme based on **resistance training at moderate-to-high intensity**.

Oppert et al. *Obes Rev* 2021

Recommandations – Cardiometabolic health

Visceral adipose tissue and intrahepatic fat, Blood pressure

- GRADE A** • Advise preferentially an exercise training programme based on **aerobic exercise at least at moderate intensity**.

Insulin sensitivity

- GRADE A** • Advise **any type** of exercise training (**aerobic, resistance, combined aerobic or resistance**) or **HIIT** (after thorough assessment of cardiovascular risk and under supervision)

Oppert et al. *Obes Rev* 2021

Recommandations - Fitness

Cardiorespiratory fitness

- GRADE A** • Advise **any type of exercise training (aerobic, resistance, combined aerobic or resistance)** or **HIIT** (after thorough assessment of cardiovascular risk and under supervision)

Muscle strength

- GRADE A** • Advise an exercise training programme based preferentially on **resistance training alone** or **combined with aerobic training**.

Oppert et al. *Obes Rev* 2021

Recommandations – Food intake

Eating behaviour

- GRADE B** • Inform persons with overweight or obesity that an exercise training programme will not have a substantial impact on energy intake but rather **may improve eating behaviours**

Hunger and satiety

- GRADE B** • Inform persons with overweight or obesity that exercise training **may increase fasting hunger** but **improve the strength of satiety**

Oppert et al. *Obes Rev* 2021

Recommandations – Bariatric surgery

Additional weight and fat loss with exercise after surgery

- GRADE A** • Advise an exercise training program based on **aerobic and resistance training**.
GRADE B • Inform that expected additional weight and fat loss is on average not more than 2-3 kg.

Physical fitness

- GRADE A** • Advise an exercise training program based on **aerobic and resistance training**.

Lean body mass

- GRADE C** • Advise an exercise training program based on **aerobic and resistance training**.

Oppert et al. *Obes Rev* 2021

Recommandations - QoL

Quality of life (physical component)

- GRADE B** • Advise an exercise training program based on a **combination of aerobic and resistance training**

Oppert et al. *Obes Rev* 2021

Take home Assessment and interventions

- Assessment of habitual physical activity +/- exercise capacity is mandatory in management. It is part of the conversation.
- For weight loss, results do not meet expectations. Be realistic.
- Endurance exercise reduces visceral adipose tissue with potential benefits for cardio-metabolic risk.
- For lean mass preservation during weight loss, resistance training is the choice.
- Exercise prescription after bariatric surgery is to be studied further.
- The prescription strategy follows a graded, progressive, individually-tailored approach.