



University of Verona,
School of Exercise and Sport Science,
Laurea magistrale in Scienze motorie preventive ed adattate

Metodologia delle misure delle attività sportive

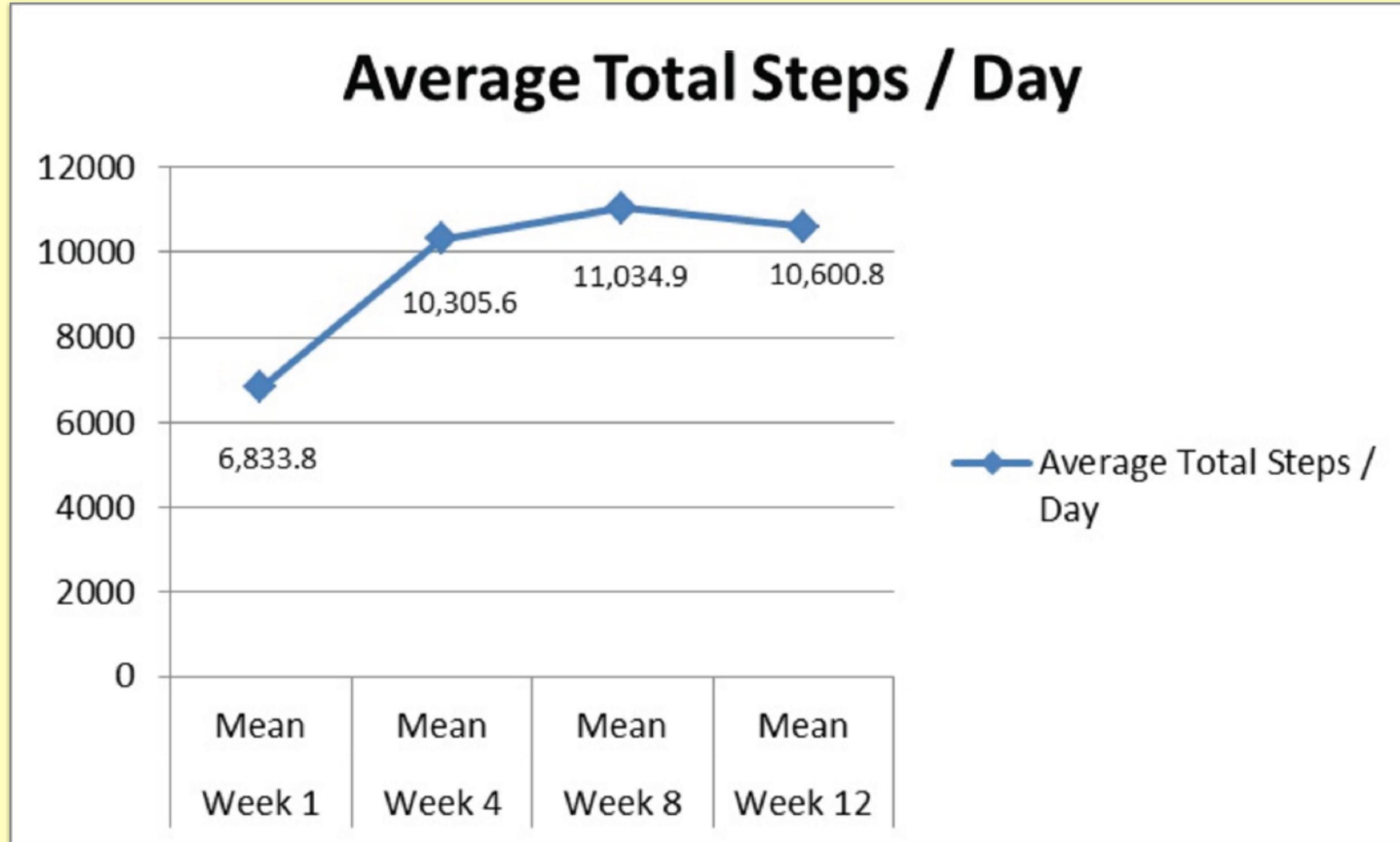
Thursday 07/01/2016 h. 8:30÷10

Luca P. Ardigò Ph.D.

Specific measures

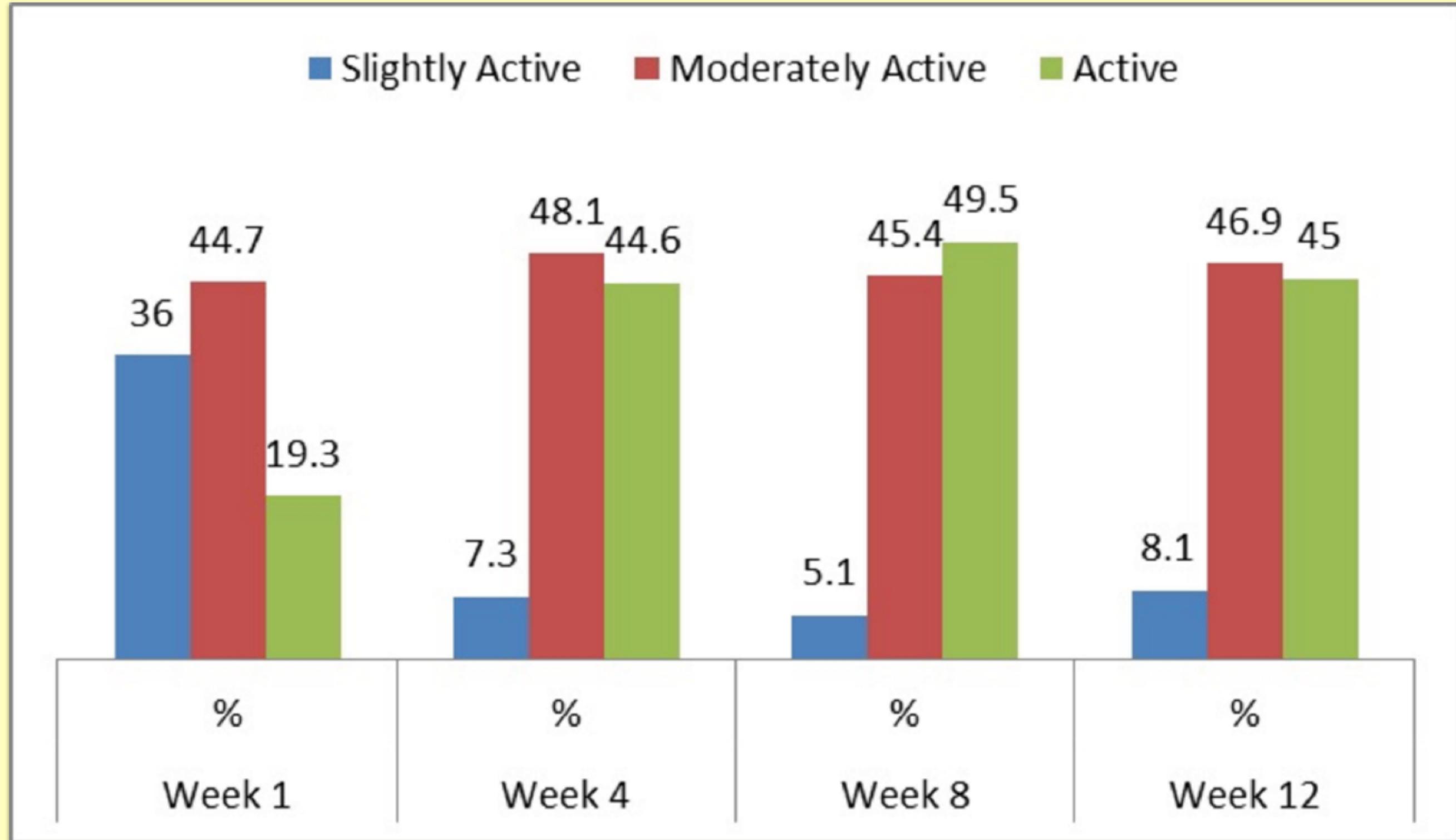
How many steps/day are enough?

- 10,000 (Hatano, 1993);
- Tudor-Locke et al., 2004:
 - <5,000 sedentary lifestyle;
 - 5,000 ÷ 7,499 typical daily activity that does not include exercise or sports and can be defined poorly active;
 - 7,500 ÷ 9,999 includes a bit of extra-work (and/or fatiguing work) and can be defined a little active;
- > 10,000 active lifestyle;
- > 12,500 very active lifestyle



Effect of online pedometer program on physical activity in Qatar

170



Pedometry

measures

Specs



Vital sign: HR, HRV, temperature

Battery lifetime: Up to 10h (Rechargeable)

Charging time: Appr. 1h

Weight: 6,5g

Dimensions: 4,5 x 1,8 x 3,8 cm (H x D x W)

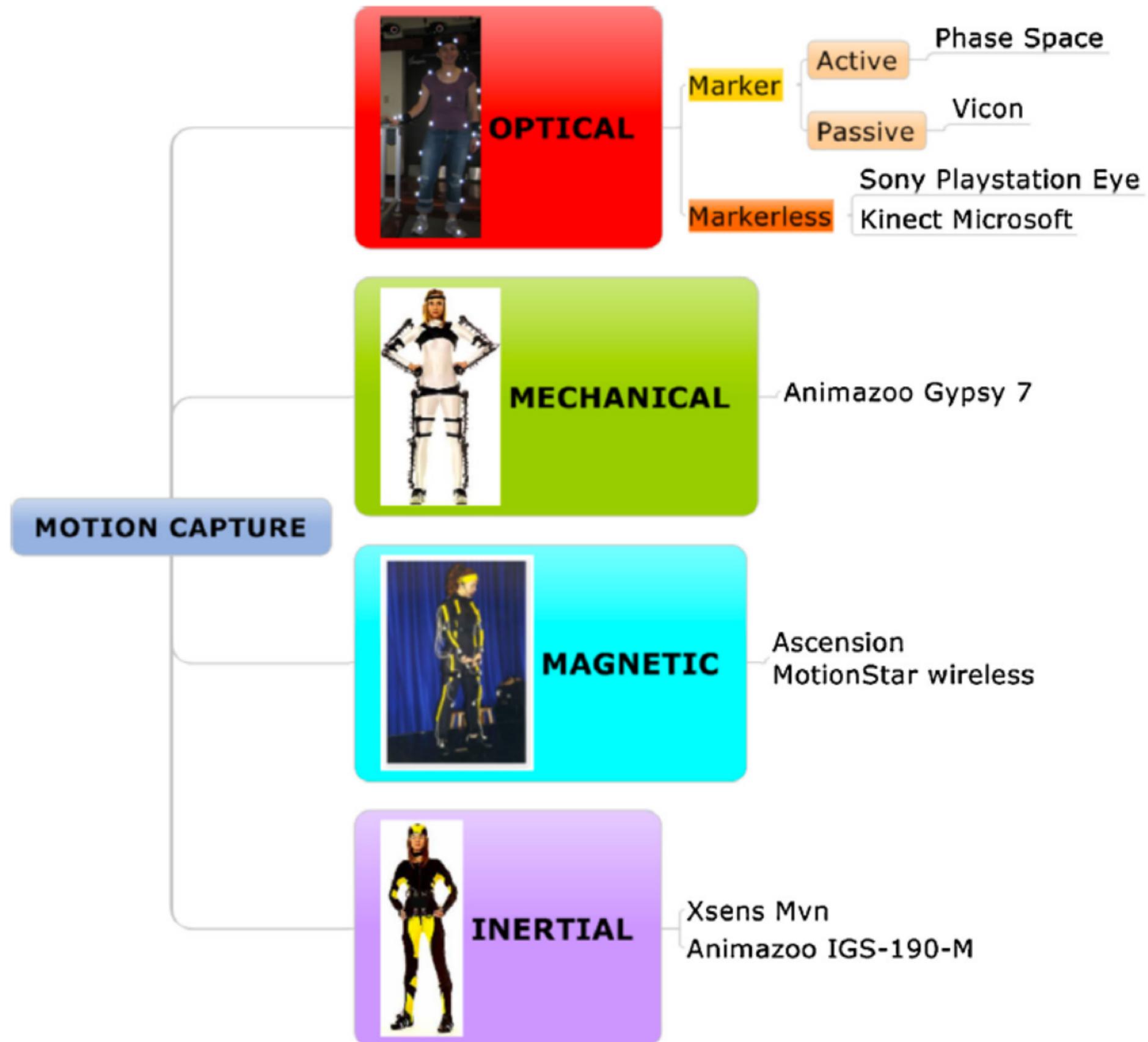
Radio frequency: 2,4 GHz

Compatibilty: Bluetooth 4.0 & ANT+
(certification coming soon)

cosinuss° One

172

Mocap options



measures

Regazzoni et al, 2015

Fig. 1. Mocap system classification depending on the technology used.



Top 20 fitness trends 2016

20

Outcome Measurements

Outcome measurements are efforts to define and track measurable results to prove that a selected programme actually works. [Discover more at Human Kinetics](#)

19

Core training

Core training stresses strength and conditioning of the stabilising muscles of the abdomen, thorax and back. [Discover more at Human Kinetics](#)

18

Circuit Training

Circuit training is a group of 6 to 10 exercises that are completed one after another and in a predetermined sequence. [Discover more at Human Kinetics](#)

17

Smart Phone Exercise Apps

These apps have become increasingly popular with younger gym members or people who exercise regularly outdoors. [Discover more at Human Kinetics](#)

16

Flexibility and mobility rollers

These devices include the deep tissue roller, myofascial release and trigger point relief.

[Discover more at Human Kinetics](#)

15

Sport-specific training

This trend incorporates sport-specific training for sports such as football and cricket, designed especially for young athletes. [Discover more at Human Kinetics](#)

14

Outdoor activities

Outdoor activities often include hiking, canoeing, kayaking and games or sports.

[Discover more at Human Kinetics](#)

13

Wellness coaching

Use a one-on-one approach similar to a personal trainer to provide support, guidance and

encouragement. [Discover more at Human Kinetics](#)

12

Worksite health promotion

Designed to improve the health and well-being of employees, this is a range of programmes and services that evaluate health, costs and worker productivity. [Discover more at Human Kinetics](#)

11

Group personal training

Training two or three people at the same time in a small group seems to make good economic sense for both the trainer and the client.

[Discover more at Human Kinetics](#)

10

Yoga

Yoga seems to reinvent and refresh itself every year, making it a more attractive form of exercise.

[Discover more at Human Kinetics](#)

9

Exercise for weight loss

Health and fitness professionals who provide weight loss programmes are increasingly incorporating regular exercise and calorific restriction for better weight control in their clients.

[Discover more at Human Kinetics](#)

8

Fitness programmes for older adults

As the baby boom generation ages into retirement, some of these people have more discretionary money than their younger counterparts to spend on fitness programmes.

[Discover more at Human Kinetics](#)

7

Functional fitness

Uses strength training to improve balance and ease of daily living. It's closely related to personal training.

[Discover more at Human Kinetics](#)

6

Personal Training

Education, training and proper accreditation for personal trainers have become increasingly important to the health and fitness facilities that employ them.

[Discover more at Human Kinetics](#)

5

Certified professionals

It's important that consumers choose professionals certified through programmes that are accredited by bodies such as REPS.

[Discover more at Human Kinetics](#)

4

Strength training

Sculpt the body you want with the help of some of the world's leading experts in strength training.

[Discover more at Human Kinetics](#)

3

High-intensity training

Challenging workouts that push you to your limit and maximise results.

[Discover more at Human Kinetics](#)

2

Body weight training

It's not just push-ups and pull-ups. New packaging, particularly by commercial clubs, has now made it popular in all kinds of gyms.

[Discover more at Human Kinetics](#)

1

Wearable Technology

Includes fitness trackers, smartwatches, heart rate monitors and GPS tracking devices.

[Find out more at Human Kinetics](#)

Wearable technology



Wearable technology

FROM HEAD TO TOE WEARABLE TECHNOLOGY

SHIRT

Conductive thread means a computer is literally built into the fabric of the shirt, providing the processing power for all the other wearable gadgets.

WRISTBAND

A sensor that tracks movement to determine the number of steps taken through the day – 10,000 is ideal – and how much sleep the wearer gets at night.

TROUSERS

Also made with conductive thread, the trousers take the energy generated by movement and use it to power the other gadgets.

GLASSES

Overlays navigation directions and information about points of interest directly on to the wearer's field of vision.

WRISTWATCH

Vibrates when a message arrives and displays it on the watch face. Tells the time too.

HAND

Embedded under the skin is a chip containing medical records, passport data and credit records. Information is transferred by waving the hand over a suitable scanner.

SHOES

GPS chip provides directions using LED lights in each shoe: the left shoe indicates direction, while the right shows distance.

GRAPHIC: JOHN BRADLEY

Summary

measures

- PA & ME overview;
- PA & ME measures overview;
- pedometry;
- first generation accelerometry;
- portable HR measure;
- $\dot{V}O_2$ measure overview;
- DLW method overview;
- second generation accelerometry (purely physical sensors);
- second generation accelerometry (physical + physiological sensors);
- GPS;
- GIS overview;
- DGPS overview;

Summary

- multisensor portable devices/garments overview;
- IMUs overview;
- TurfTrax overview;
- RFID chip overview;
- ODBA overview

New methods for the evaluation of the energy expenditure in exercising humans in ecological conditions
A three class module

Thank you for your attention

Luca P. Ardigo Ph.D.

Senior Lecturer in Sport Science

School of Exercise and Sport Science

Department of Neurological, Biomedical and Movement Sciences

University of Verona

luca.ardigo@univr.it

