

Daily Mobility profile in Age-Related Sarcopenia: Actimetry baseline data from SARA-OBS, a six-month observational multicenter clinical study in EU and US

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SARA-OBS is a **multicentre six-month observational clinical study** conducted in the EU and in the US. Patients taking part to SARA-Obs have been asked to wear a connected device over the entire duration of the study to continuously record data on daily physical activity.

The interest of collected data is to **analyse the pattern of physical activity**, e.g. a sedentary life style and **its relationship with the patient reported difficulty in physical function**, assessed by **auto-evaluation questionnaires** and with **established functional tests**, e.g. 400-meter walking test.

THE USE OF A CONNECTED DEVICE LIKE THE ADAMO WATCH IS AIMED TO EASILY COLLECT INFORMATION ON THE PHYSICAL ACTIVITY OF ELDERLY PATIENTS IN A CONTINUOUS AND NON-INVASIVE WAY, EVALUATING THEIR HEALTH WITH SPECIFIC REFERENCE TO THE EVOLUTION OF FRAILTY AND SARCOPENIA.

THE WATCH RECORDS **ANONYMOUS RAW DATA** FROM ITS SENSORS AND PROCESS THEM, UPDATING INSIDE RECORDED MONITORING PARAMETERS.

EVERY **10 MINUTES**, IT TRANSMITS THE PROCESSED INFORMATION TO ITS COUPLED BASE-STATION LOCATED IN THE PATIENT HOUSE VIA A SHORT-RANGE RADIO PROTOCOL.

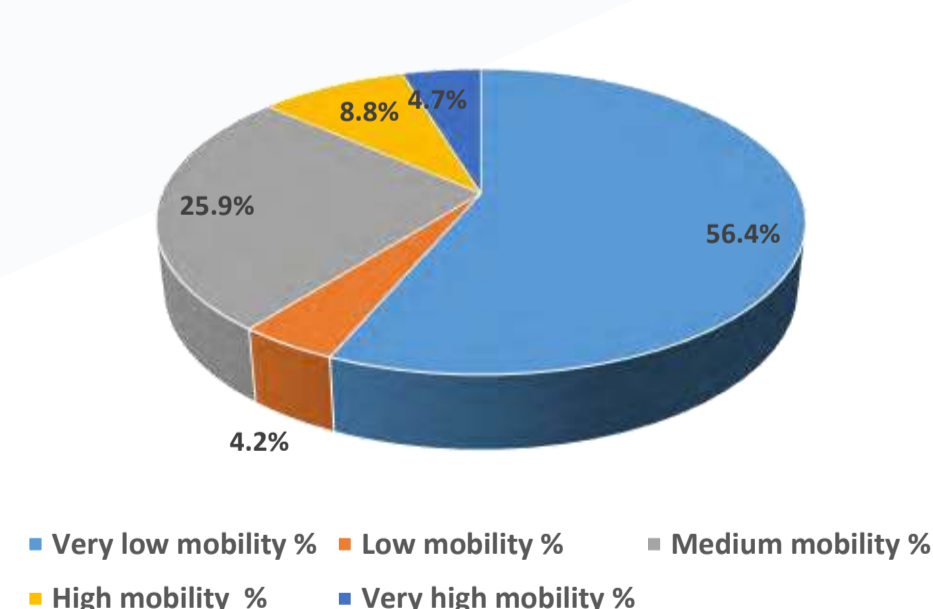
DATA TRANSFER BETWEEN WATCH AND BASE-STATION IS **ENCRYPTED AND ENCODED** USING THE "IDEA" ALGORITHM AND TRANSFERRED OVER A RADIO LINK, RESPECTING PERSONAL DATA PRIVACY

MOBILITY DATA AUTOMATICALLY RECORDED BY THE WATCH INCLUDE THE LEVEL (5 LEVELS FROM VERY LOW PHYSICAL ACTIVITY TO SUSTAINED PHYSICAL ACTIVITY) AND OTHER SPECIFIC OUTCOME MEASURES (I.E. FALLS EVENTS).

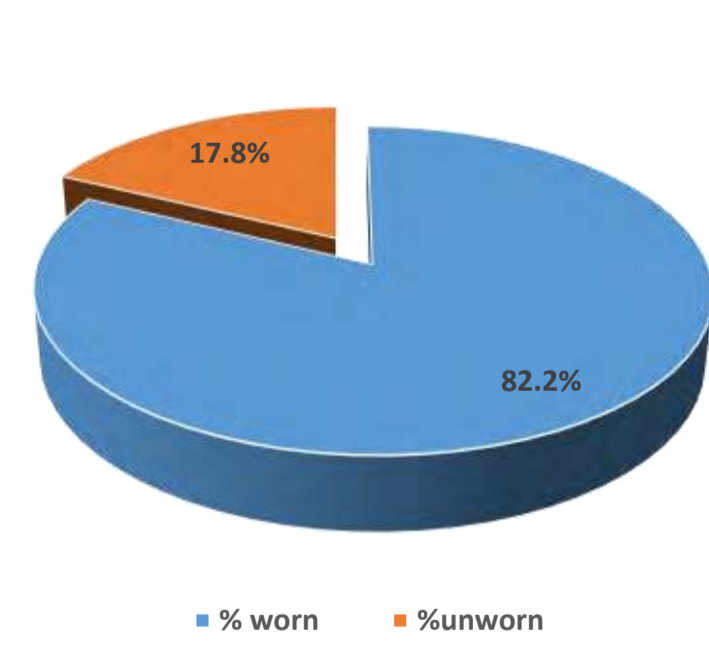
THE BASE STATION FORWARDS SUCH INFORMATION TO THE **SARA DATA SERVER** USING THE M2M MOBILE NETWORK (IOT).

The baseline profile of included patients (see also poster P114) is presented and discussed versus functional tests and auto-evaluation questionnaires

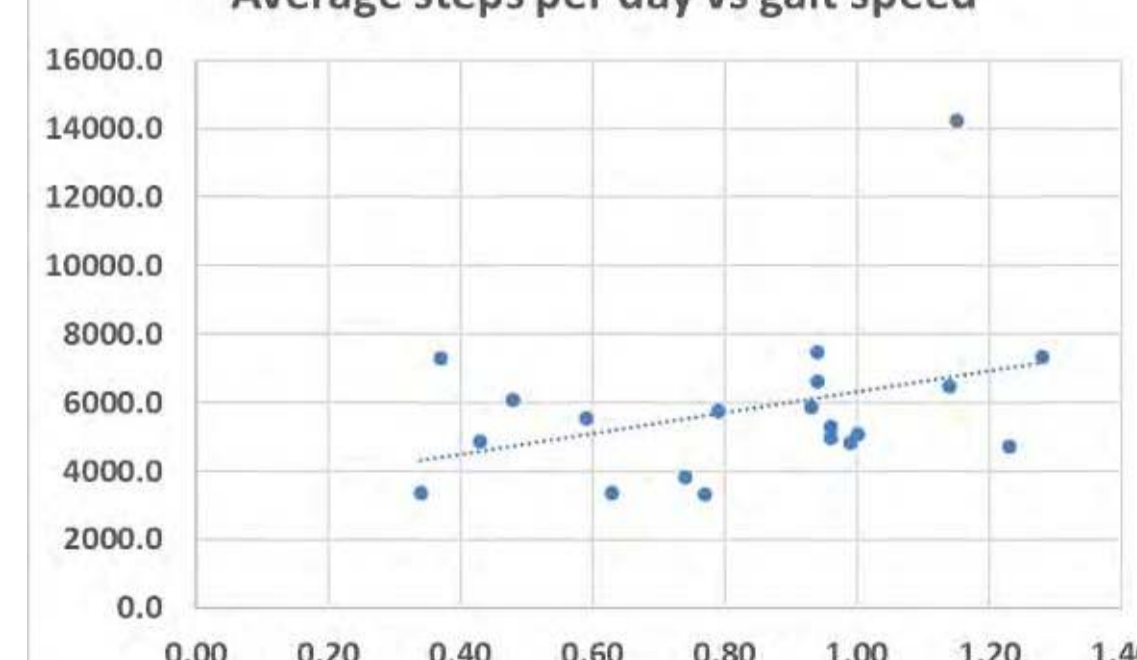
Mobility pattern of SARA-OBS patients (baseline)



Adherence : Duration device was worn



Average steps per day vs gait speed



Patients Sample	(at least 60 days of observation)		
Number	20		
Age	78.9	±7.01	(65-91)
F/F+M	50%		
SSPPB at baseline	6.6	±1.9	(1-8)
Gait Speed at baseline (m/s)	0.83	±0.28	(0.28-0.34)
Days of observation	114	± 33.22	(73-196)

Recorded Parameters	Mean	StDv	max	min
Total number of steps	505,067.5	212,324.6	1,181,852.0	198,899.0
Steps per day	5,763.2	2,361.9	14,230.8	3,052.3
% worn	82.2	19.3	99.8	38.0
%unworn	17.8	19.3	62.0	0.2
Very low mobility %	56.4	12.6	70.4	15.6
Low mobility %	4.2	9.3	29.0	0.0
Medium mobility %	25.9	12.1	47.3	3.6
High mobility %	8.8	6.2	32.4	2.0
Very high mobility %	4.7	9.4	44.5	0.3

Index	Activity level
Very low mobility %	Lying
Low mobility %	Sitting
Medium mobility %	Standing with low activity
High mobility %	Walking low cadence
Very high mobility %	Walking high cadence



DATA RECORDED ON SERVERS EVERY 10 MINUTES (QUASI REAL TIME) ARE MADE AVAILABLE FOR REVIEW VIA A **WEB-BASED ANALYTICAL TOOL**. THE OBSERVATION TIME RANGE AND THE PARAMETERS OF INTEREST CAN BE SELECTED TO TEST ANY INTERVAL THE PATIENT WORE THE DEVICE I.E. FIRST MONTH OF STUDY.

Connected actimetry implemented in **SARA-OBS** allows to gather relevant information about mobility patterns of the older participants throughout the trial period without interfering with everyday activity: – an innovative application of the **Internet of Things (IoT)** to clinical trials.