



SafEE

SAFE & EASY ENVIRONMENT FOR ALZHEIMER'S DISEASE
AND RELATED DISORDERS



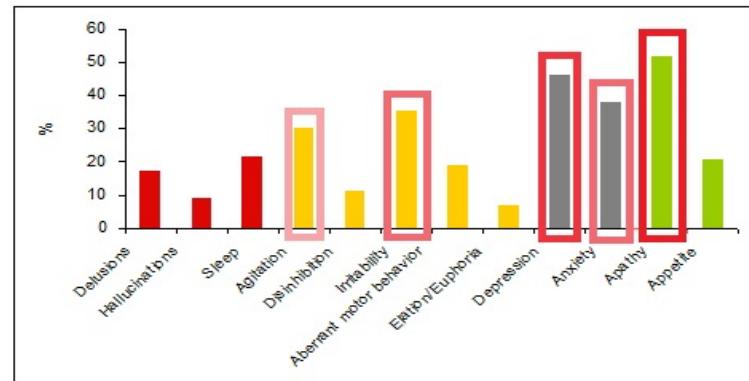
The SafEE (Safe Easy Environment) project aim is to improve the safety, autonomy and quality of life of older people at risk or suffering from AD and related disorders.



More specifically the SafEE project:



-focuses on specific clinical targets in three domains: behavior, motricity and cognition



-merges assessment and non pharmacological help/interventions

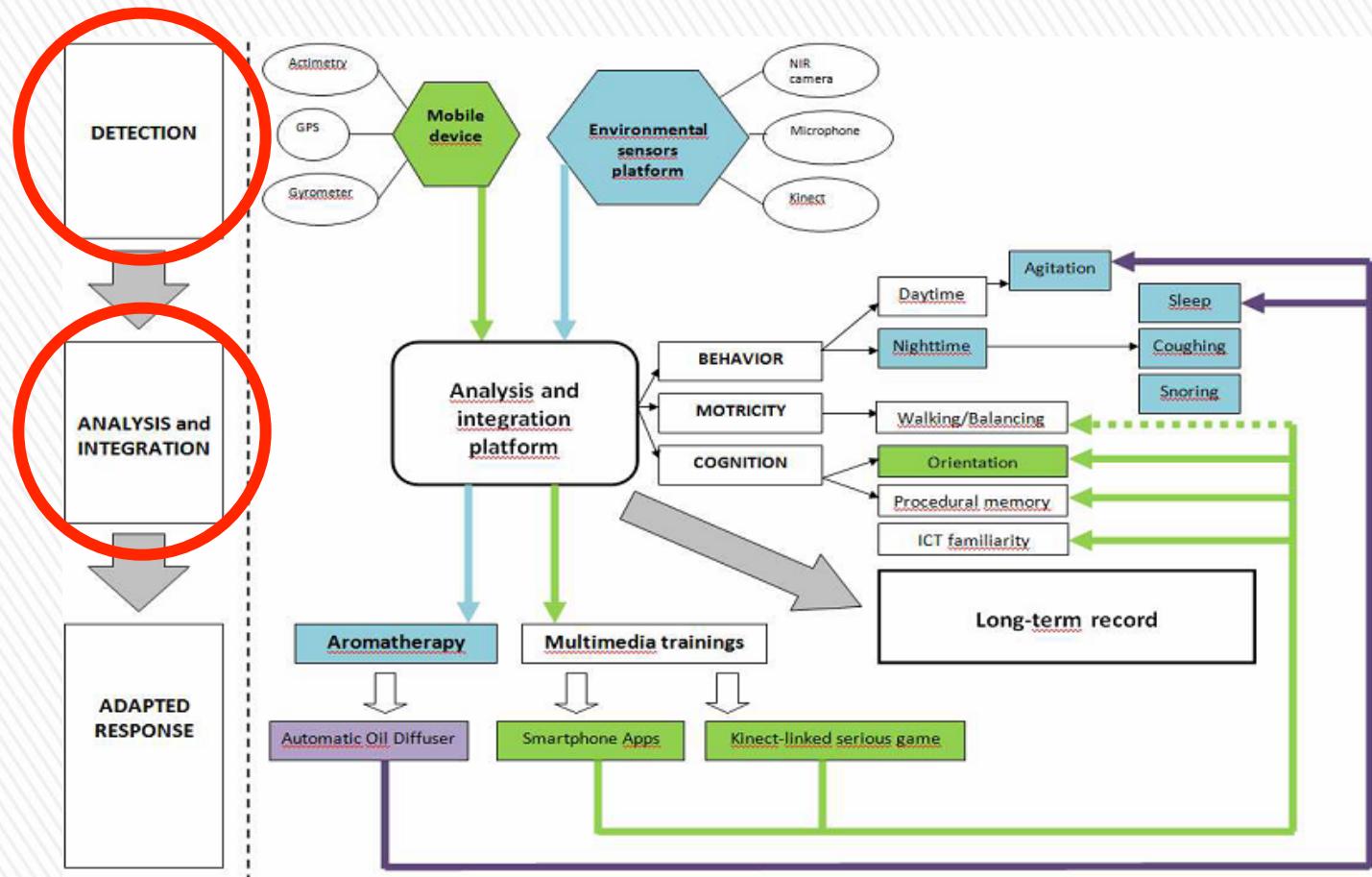


-proposes easy ICT device solutions for the end users

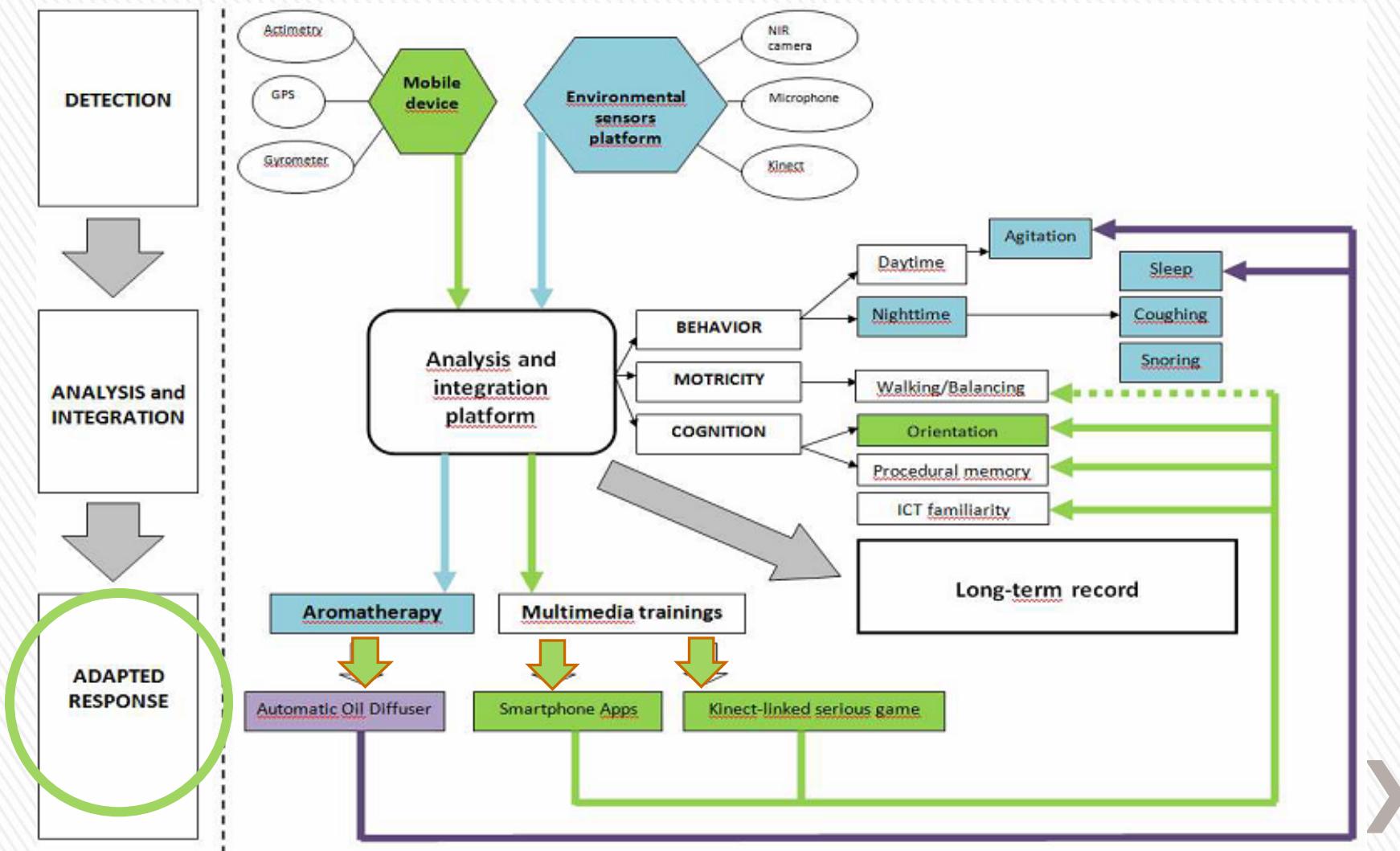


To reach this goal, the SafEE project will develop:

1 / an ICT-based behavior analysis platform able to detect, recognize and assess daytime (such as agitation) and nighttime (such as sleep disturbances) behavioral patterns (BEHAVIOR), walking/balancing capabilities (MOTRICITY), orientation and procedural memory (COGNITION)



2 / Tailored non pharmacological therapeutic responses:



3)Two pilot studies in order to validate the acceptability, sensitivity and efficacy of the systems

Aims of the study 1

Primary aim:

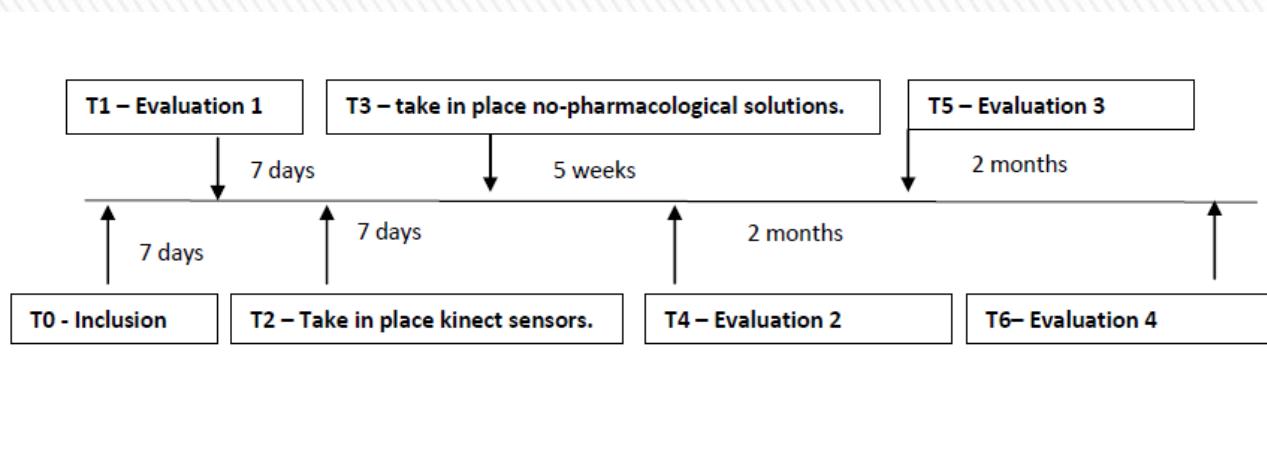
Assess feasibility of the establishment of therapeutic solutions in personal home of patients with a frailty syndrome.

Secondary aims

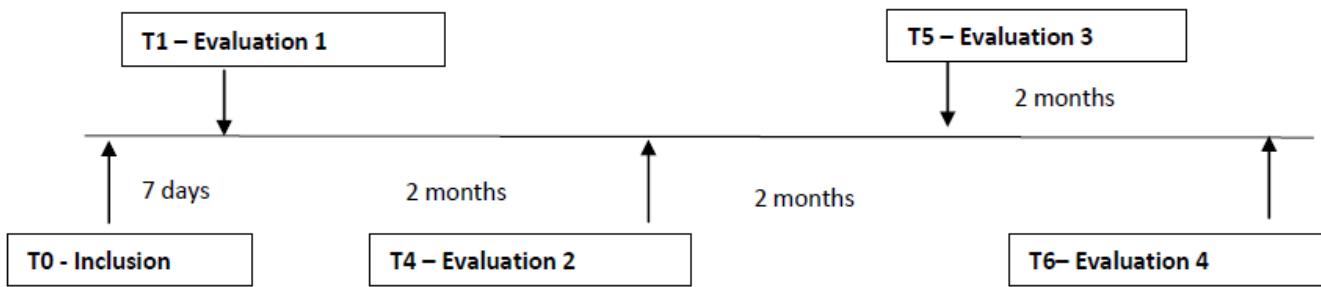
- Evaluate the technological tools available to ensure their ease of handling in the elderly.
- Assess whether therapeutic solutions implemented allows a reduction of disorders presented by patients.
- Identify emotional disorders in patients considered fragile via RGB-D sensors.
- Assess cognitive performance and patient outcomes through cognitive training games.



Patients with no-pharmacological solutions:



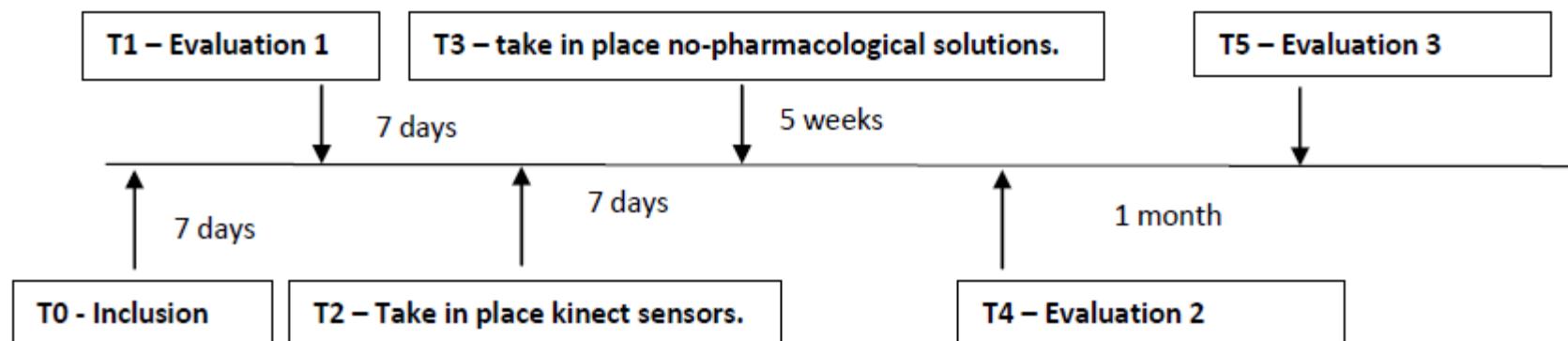
Patients without no-pharmacological solutions:



Study 2: patients with Alzheimer disease in nursing homes.

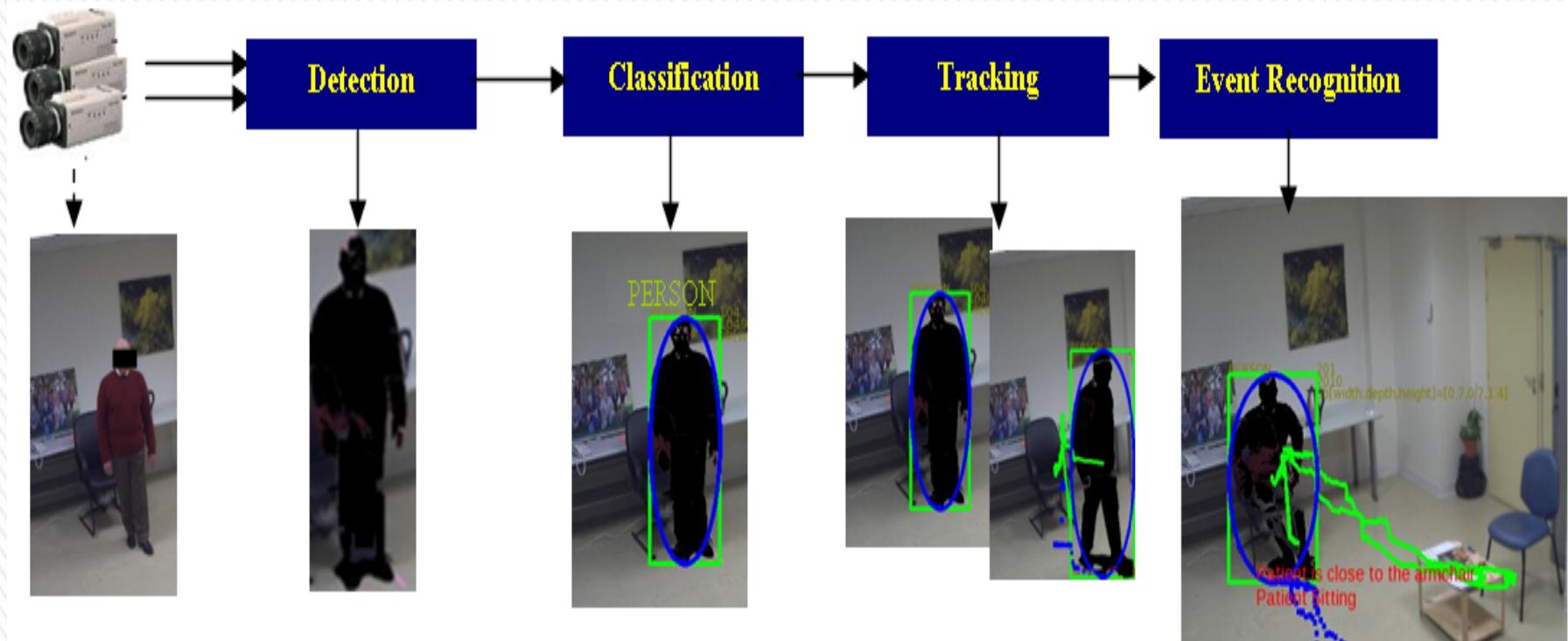
Check the feasibility of the establishment of therapeutic solutions in nursing home in patients with Alzheimer's disease or related disorders.

- a) Check whether the therapeutic responses can reduce disorders in patients with Alzheimer's disease.
- b) Observe whether the implementation of the above reduces the burden on the caregiver.
- c) Verify if the implementation of a platform managed by caregivers is feasible.



In short, three steps:

1. Recognition of symptoms by sensors from new technologies.



2. No-pharmacological responses:

Musical responses:



Brain training and serious games:

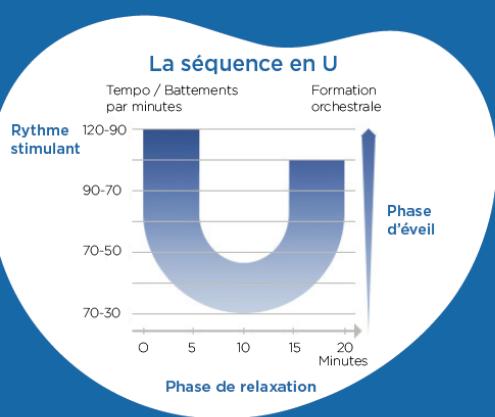


Olfactory responses:

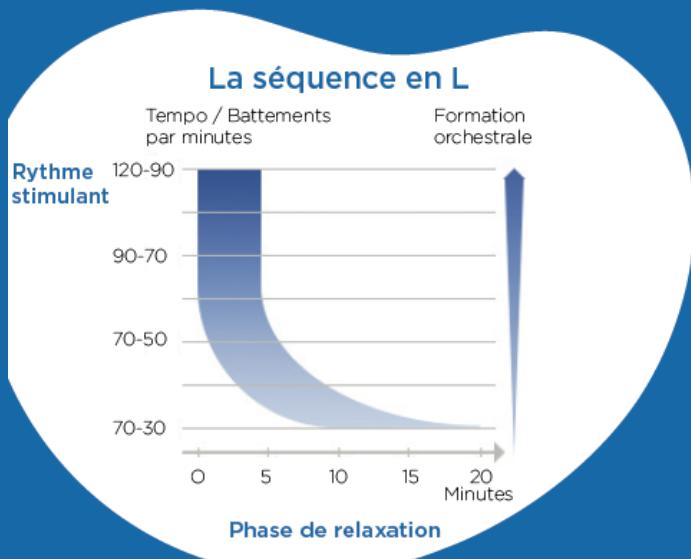


Musical responses: sequences according to disorders observed.

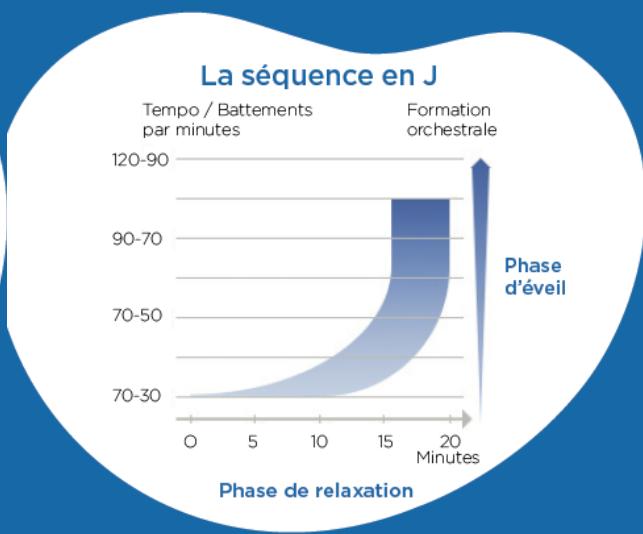
Les techniques standardisées



Une technique efficace dans la réduction de la douleur et des consommations médicamenteuses.



Utilisée en pré-opératoire, il favorise la sédation.

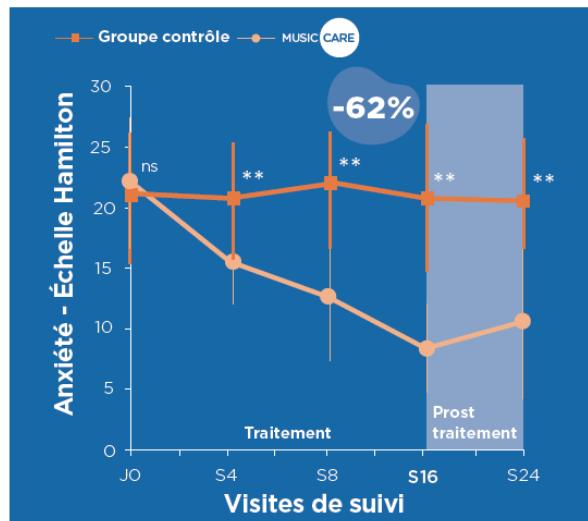


Utilisée en post-opératoire, elle permet de réduire la consommation antalgique.

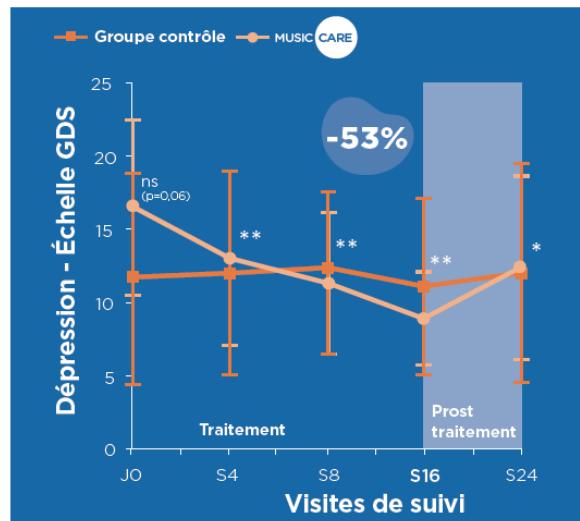


Evidence of effectiveness:

Une baisse significative de l'anxiété et de la dépression / Un effet de maintien de 8 semaines après l'arrêt des séances :



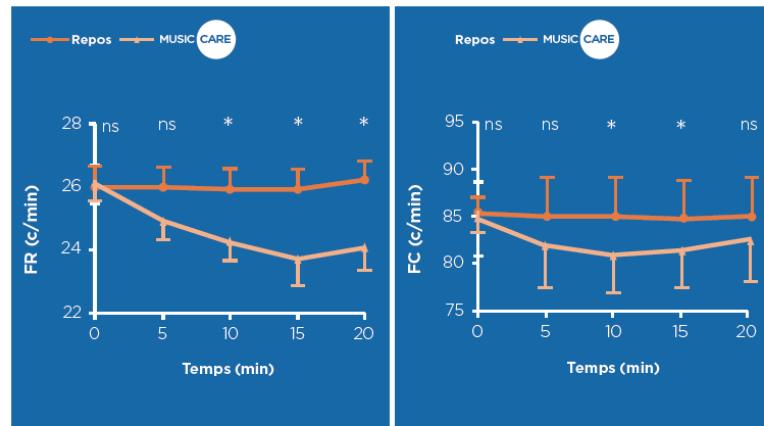
ns : non significatif
** : p<0,01



GDS : échelle de dépression Gériatrique
ns : non significatif
* : p<0,05
** : p<0,01

P8

Une baisse significative des fréquences cardiaques et respiratoires



FR : fréquence respiratoire
ns : non significatif
* : p<0,05

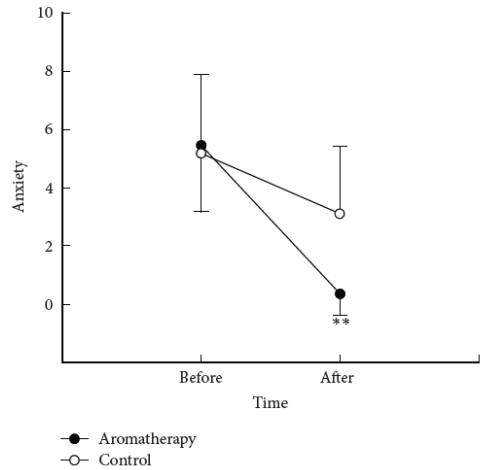
FC : fréquence cardiaque
ns : non significatif
* : p<0,05



Olfactory responses.

Evidence of effectiveness about:

Anxiety



Agitation

Table 2 Number of patients with side effects

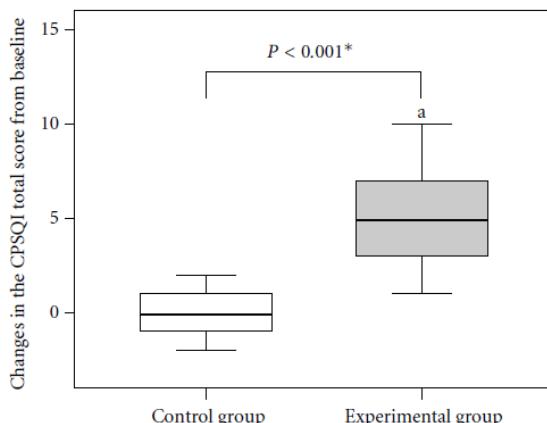
Side effect	Melissa extract	Placebo	p Value
Vomiting	3	1	1.00
Dizziness	1	1	1.39
Wheezing	2	0	0.10
Agitation	1	6	0.03
Abdominal pain	2	0	0.48
Nausea	1	0	0.48

Cognition

	Threes correct	Threes RT	Sevens correct	Sevens RT	RVIP correct	RVIP RT	Alert change	Content change	Calm change
1,8 Cineole	0.469*	-0.502*	0.433	-0.466*	0.117	-0.446*	0.069	-0.454*	-0.268
Threes correct	-	-0.864***	0.880***	-0.466*	0.327	-0.167	-0.323	-0.565**	-0.264
ThreesRT	-	-	-0.692***	-0.819***	-0.291	0.190	0.269	0.525*	0.299
Sevens correct	-	-	-	-0.801***	0.323	-0.093	-0.247	-0.482*	-0.303
Sevens RT	-	-	-	-	-0.106	-0.070	0.145	0.353	0.512*
RVIP correct	-	-	-	-	-	-0.161	-0.043	-0.115	0.224
RVIP RT	-	-	-	-	-	-	0.192	0.315	-0.118
Alert change	-	-	-	-	-	-	-	0.449*	-0.009
Content change	-	-	-	-	-	-	-	-	0.295

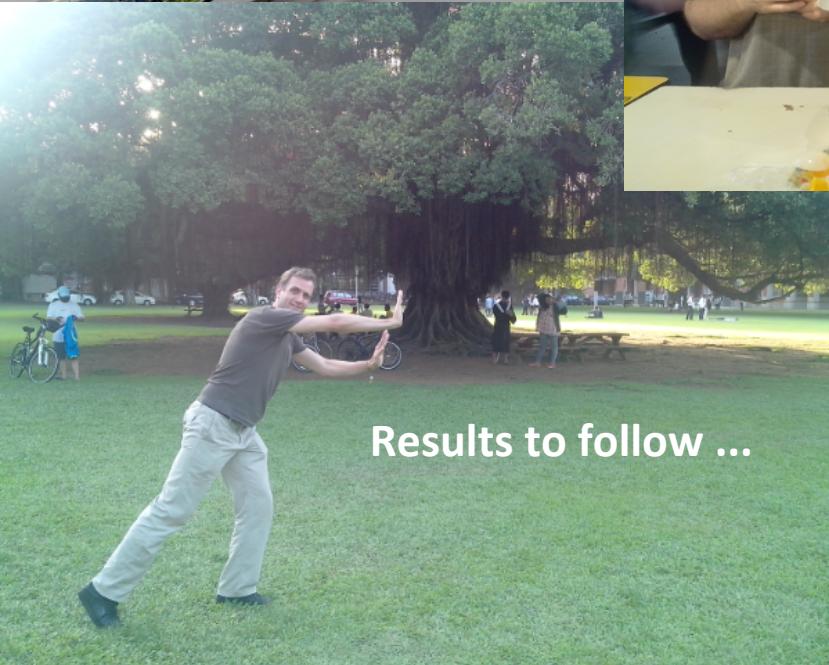
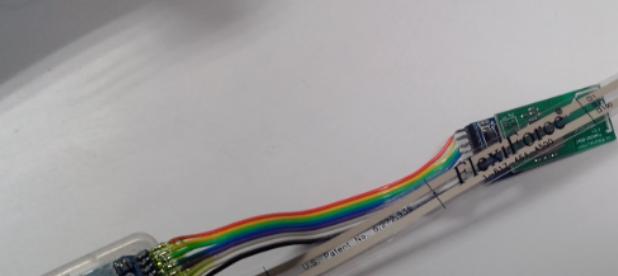
Significant correlations are marked with asterisks * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.
RT, Reaction Time (milliseconds); RVIP, Rapid visual information processing task; SD, standard deviation.

Sleep



A franco-taiwanese project.





Results to follow ...





Next slide

