RÉHABILITATION EN CARDIOLOGIE CONGÉNITALE

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Conflits d’intérêts

AUCUN

REHABILITATION CARDIO-VASCULAIRE: les défis actuels

The NEW ENGLAND JOURNAL of MEDICINE

REVIEW ARTICLE

Jane A. Leopold, M.D., *Editor*

Cardiac Rehabilitation — Challenges, Advances, and the Road Ahead

Randal J. Thomas, M.D.

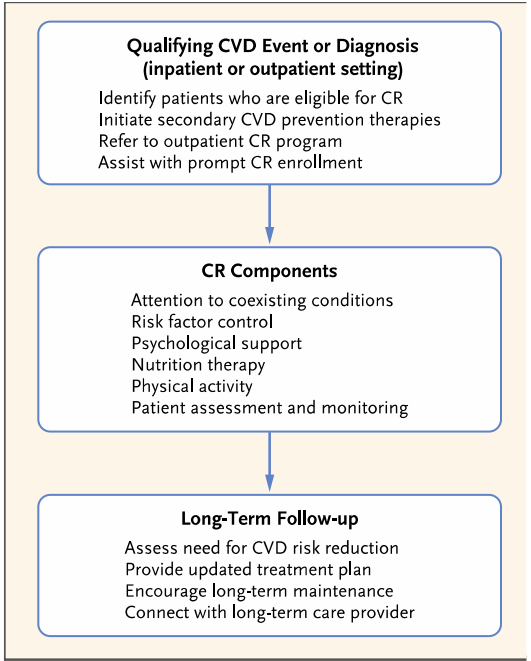
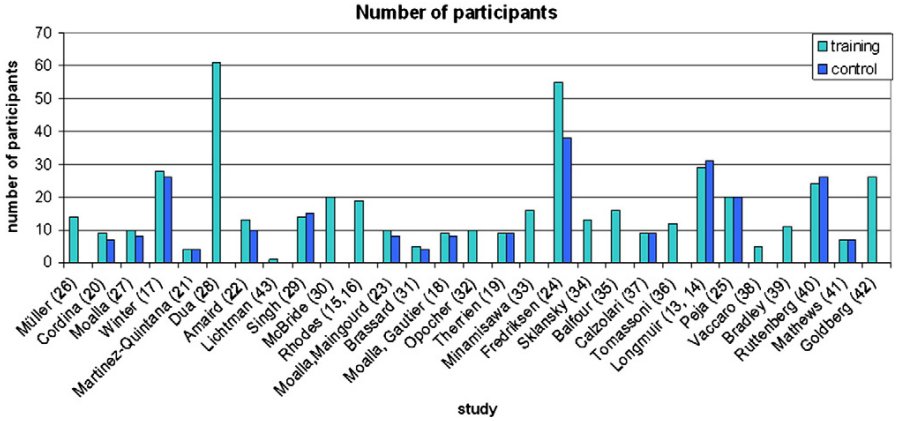


Figure 1. Cardiac Rehabilitation (CR) Pathway.

Important factors are listed for the three parts of the CR pathway, including steps to help patients initiate CR, components of an effective CR program, and steps to help patients maintain progress over time. CVD denotes cardiovascular disease.

Systematic review of the effects of physical exercise training programmes in children and young adults with congenital heart disease.

Duppen & al. 2013



Cardiac rehabilitation and physical activity: systematic review and meta-analysis. **Dibben & al.** 2018

Physical activity modification in youth with congenital heart disease: a comprehensive narrative review. **van Deutekom & al.** 2021

Exercise training in paediatric congenital heart disease: fit for purpose? **Amir &al.** 2022

Safety and efficacy of exercise training in children and adolescents with congenital heart disease: A systematic review and descriptive analysis. **Anderson & al.** 2022

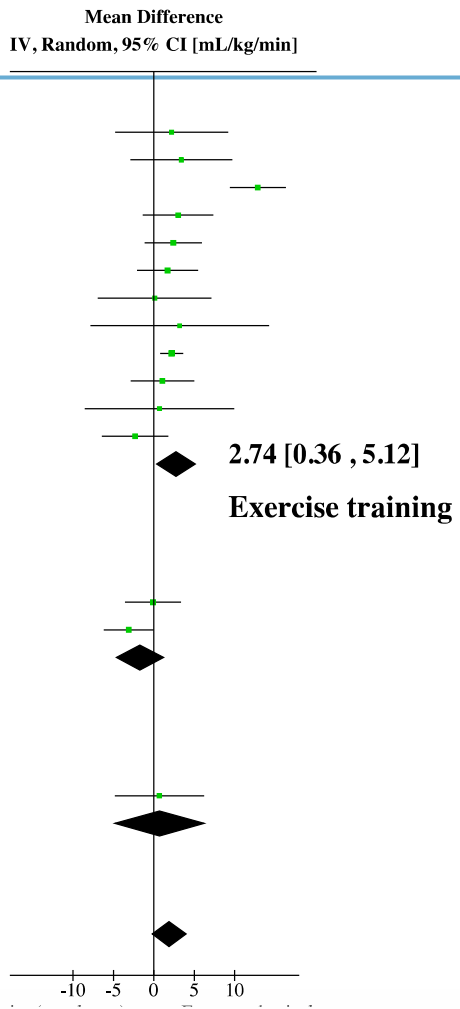
Effects of Sports, Exercise Training, and Physical Activity in Children with Congenital Heart Disease-A Review of the Published Evidence. **Dold & al.** 2023

Physical activity interventions for people with congenital heart disease (Review)

Williams CA, Wadey C, Pieles G, Stuart G, Taylor RS, Long L

Cochrane Database Syst Rev. 2020

- 15 RCT (5 E , 10 A) : 924 patients
- 3 types d'intervention
- faible amélioration sur la capacité physique
- Évaluation au décours du programme
- réhabilitation plus que promotion
- peu significatif sur QLV
- pas de complications



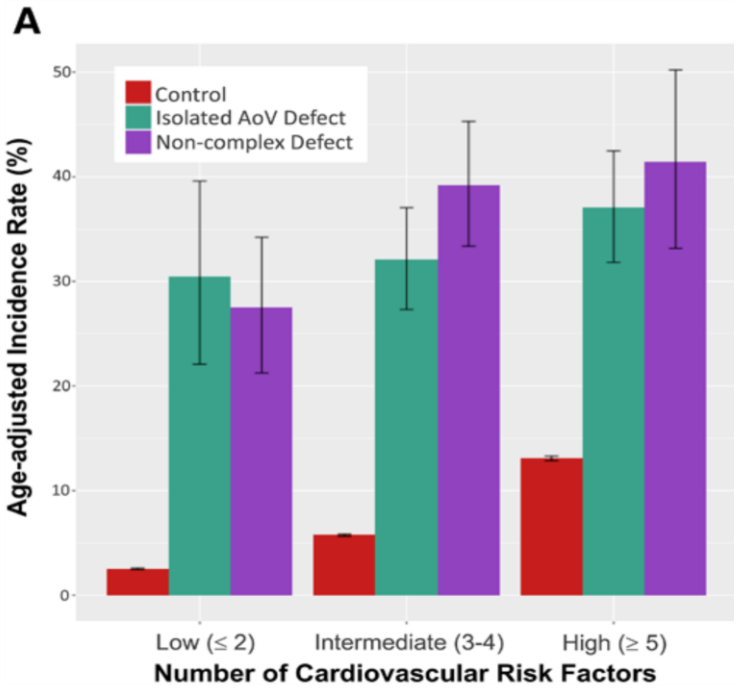
ALERTES

Circulation

ORIGINAL RESEARCH ARTICLE

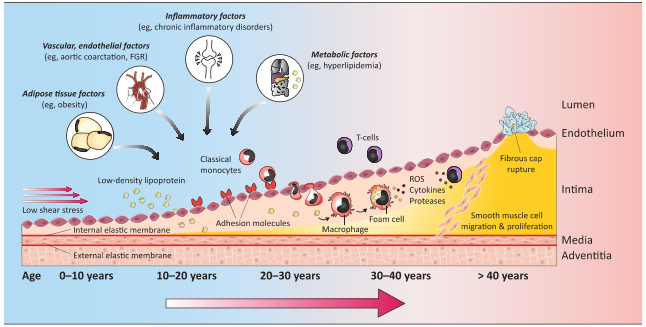
Substantial Cardiovascular Morbidity in Adults With Lower-Complexity Congenital Heart Disease

- ACHD: 51% tabagisme, 30% obesité, 69% hypertension, 41%,hyperlipidemie, 7% diabetes
- Risque de syndrome coronarien aigu x 2.0 (95% CI, 1.5–2.8; P<0.001)
- Risque d'insuffisance cardiaque x 13.0 (95% CI, 9.4–18.1; P<0.001)



Saha & al 2021

ALERTES



Atherosclerotic Cardiovascular Risk as an Emerging Priority in Pediatrics.
Schipper HS, **de Ferranti S.** Pediatrics. 2022

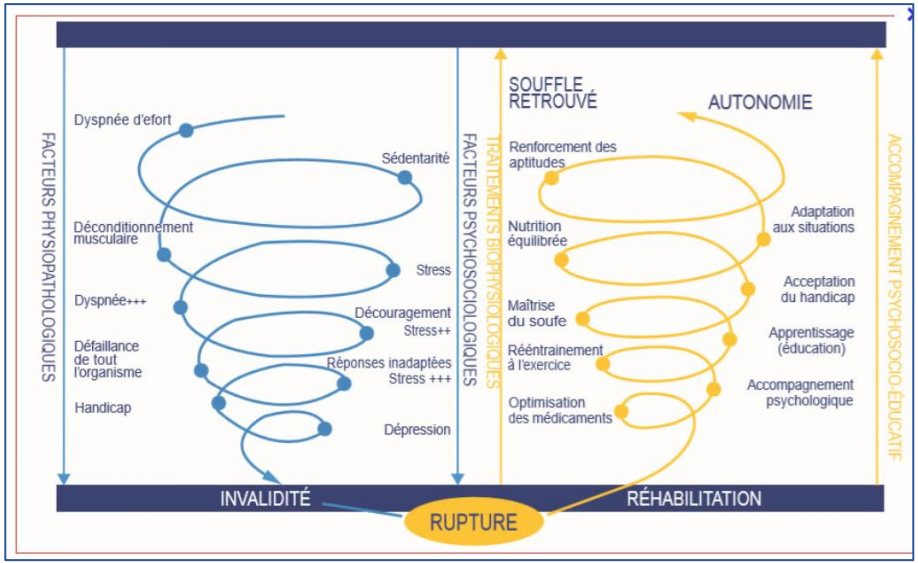
Table 3. Risks of CVD by Type of Congenital HD

	Coronary Artery Disease	Cerebrovascular Disease	Peripheral Vascular Disease
Repaired ASD/VSD	Not known to have increased risk	Increased risk if residual shunt	Not known to have increased risk
Bicuspid aortic valve	Potential risk after Ross procedure with reimplantation of coronary arteries	Not known to have increased risk	Increased risk related to aortic aneurysm
Coarctation of aorta	Increased risk could be related to accelerated atherosclerosis vs late hypertension	Increased risk related to residual hypertension or intracranial aneurysms	Increased risk related to residual coarctation or aortic aneurysm
Ebstein anomaly	Not known to have increased risk	Increased risk if interatrial shunt	Not known to have increased risk
Tetralogy of Fallot	Increased risk could be related to coronary anomalies	Increased risk if residual intracardiac shunt	Increased risk related to aortic dilation
TGA atrial switch	Increased risk could be related to coronary anomalies	Increased risk if residual baffle leak	Increased risk could be related to prior catheterizations
TGA arterial switch	Increased risk related to reduced coronary flow reserve, proximal intimal thickening, and coronary anomalies	Not known to have increased risk	Increased risk related to neoaortic dilation
Fontan	Increased risk could be related to coronary anomalies	Increased risk if Fontan fenestration	Increased risk related to Fontan venous pressures and prior catheterizations
Cyanotic congenital HD	Potential decreased risk	Increased risk related to secondary erythrocytosis and hyperviscosity syndrome	Increased risk related to secondary erythrocytosis and hyperviscosity syndrome
Eisenmenger syndrome	Potential decreased risk	Increased risk related to secondary erythrocytosis and hyperviscosity syndrome	Increased risk related to secondary erythrocytosis and hyperviscosity syndrome

Cardiovascular Risk Reduction in High-Risk Pediatric Patients: A Scientific Statement From the American Heart Association.**de Ferranti SD** & al. .Circulation. 2019

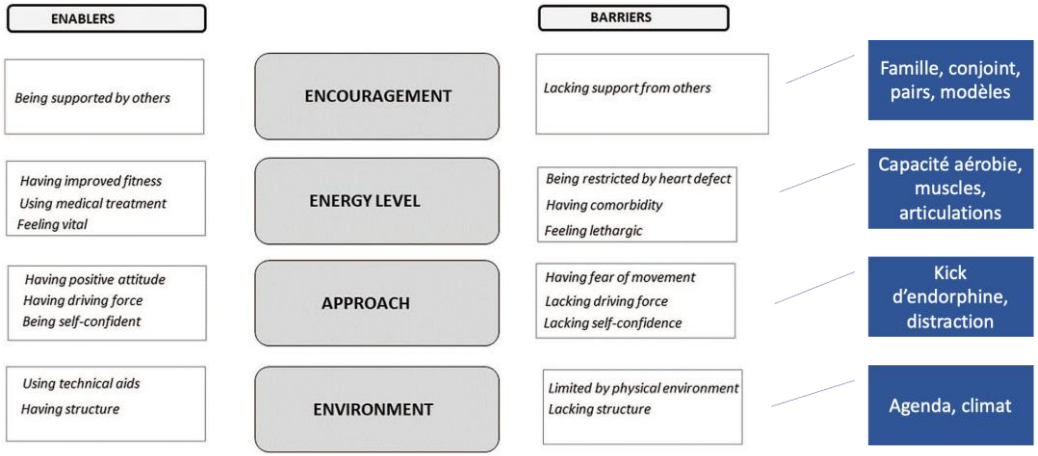
FACTEURS ASSOCIES A L' HYPO-ACTIVITE PHYSIQUE

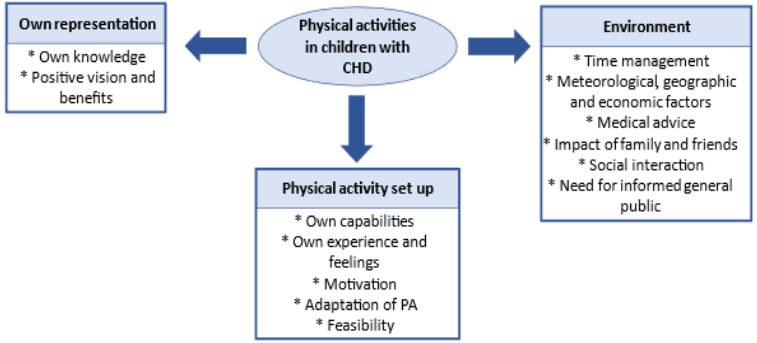
- Altération de l'aptitude physique aérobie[1]
- Altération de la fonction musculaire [2]
- Manque d'autonomie, faible sentiment d'efficacité personnelle [3]
- Surprotection parentale [4]
- Principe de précaution appliqué par les médecins[5]



[1] Kempny et al. 2012, Amedro & al. 2017
[2] Kröönström et al. 2014
[3] Chen et al. Eur. 2015
[4] Reybrouck et al. 2005
[5] Swan et al. 2000

FACTEURS LIMITANT ET MOTIVANT L'ACTIVITE PHYSIQUE





Bay et al. *Eur J Cardiovasc Nurs.* 2020, Pons C & al. 2021, Mora &al.2019, Nazare & al. 2017, Majenemer & al. 2019

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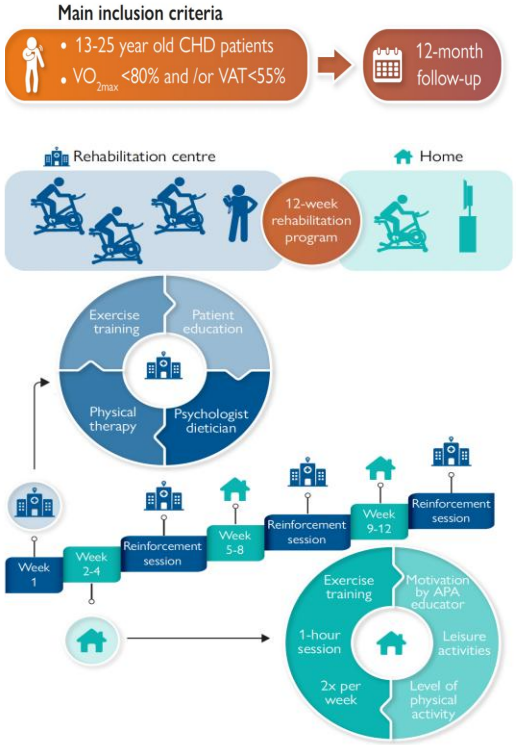
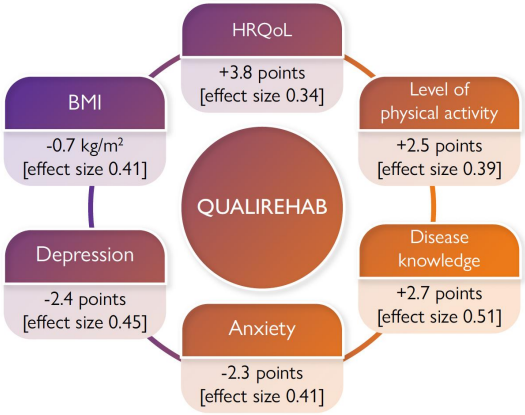
The QUALIREHAB trial



142 adolescent and young adult CHD patients with impaired cardiopulmonary fitness randomly assigned to QUALIREHAB or standard of care



The QUALIREHAB program improved HRQoL (primary outcome), BMI, physical activity, and disease knowledge

ESC European Society of Cardiology
European Heart Journal (2024) **00**, 1–16
https://doi.org/10.1093/eurheartj/ehae085
CLINICAL RESEARCH
Congenital heart disease

Early hybrid cardiac rehabilitation in congenital heart disease: the QUALIREHAB trial

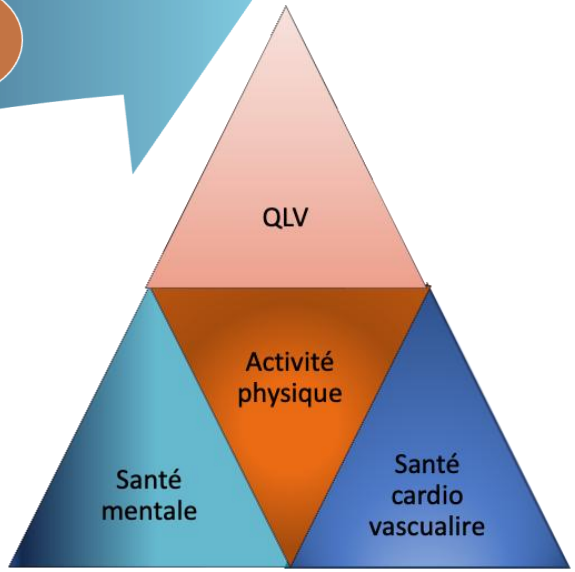
Pascal Amedro[1,2]*, Arthur Gavotto[3,4], Helena Huguet[5], Luc Souilla[4], Anne-Cecile Huby[1,2], Stefan Matecki[4], Anne Cadene[5], Gregoire De La Villeon[3,6], Marie Vincenti[3,4,6], Oscar Werner[3,6], Charlene Bredy[3,7], Kathleen Lavastre[3], Hamouda Abassi[3,4], Sarah Cohen[8], Sebastien Hascoet[8], Claire Dauphin[9], Aurelie Chalard[9], Yves Dulac[10], Nathalie Souletie[10], Helene Bouvaist[11], Stephanie Douchin[11], Matthias Lachaud[11], Caroline Ovaert[12], Camille Soulatges[12], Nicolas Combes[13], Jean-Benoit Thambo[1,2], Xavier Iriart[1], Fanny Bajolle[14], Damien Bonnet[14], Helene Ansquer[15], Jean-Guillaume Delpey[15], Laurence Cohen[16], Marie-Christine Picot[5,17], and Sophie Guillaumont[3,6]; the QUALIREHAB Study Group

QUALIREHAB : points déterminants

Critères de jugement

Intervention

Inclusion



Main inclusion criteria

- 13-25 year old CHD patients
- VO_{2max} <80% and /or VAT<55%

12-month follow-up

QUALIREHAB: conception

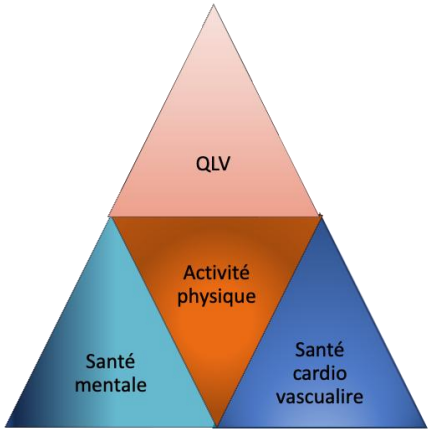
M0 Inclusion → Randomisation → Intervention → **M12** Critères de jugement

Adolescents et jeunes adultes
CC

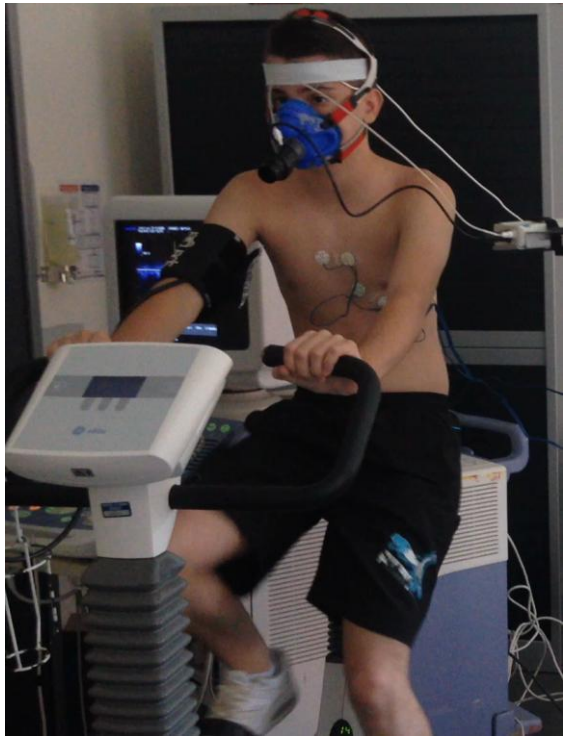
- Groupe Intervention → Programme Rehabilitation
- Groupe Contrôle → Pas d'intervention

RCT multicentrique

- 12 centres d'inclusion, 9 centres de réadaptation
- Promoteur CHU Montpellier, PHRIC,
- Investigateur coordinateur: Sophie Guillaumont
- Responsable scientifique: Pascal Amedro



QUALIREHAB : inclusion et critères de jugement



Main inclusion criteria

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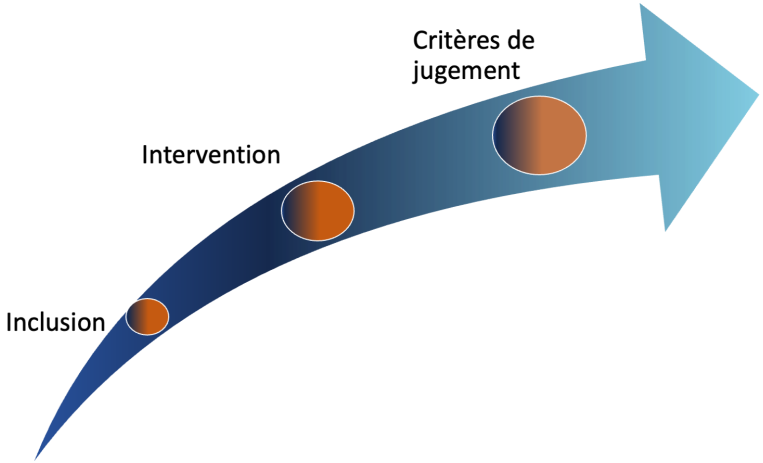


QUALIREHAB : intervention

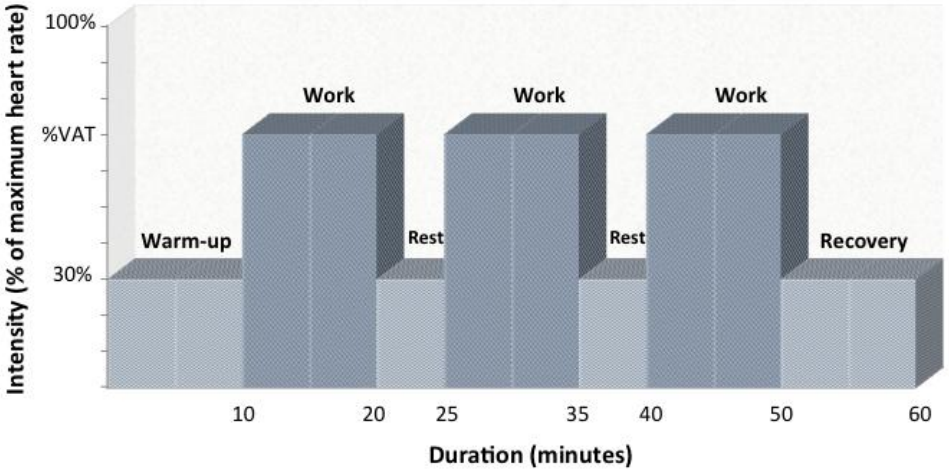
Lessons from the TRANSITION-CHD randomized controlled trial

IDE ETP, Annie Auer, ISP

www.forumeuropeen.com

Bredy et al. J Adol Health 2024

QUALIREHAB : intervention

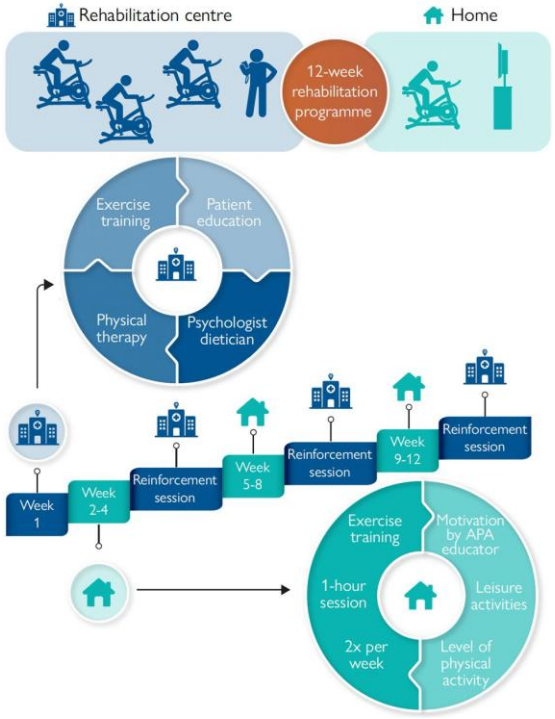


EAPA: Gael Metzler, ISP

www.forumeuropeen.com

Amedro et al. Int J Cardiol 2018

QUALIREHAB : intervention



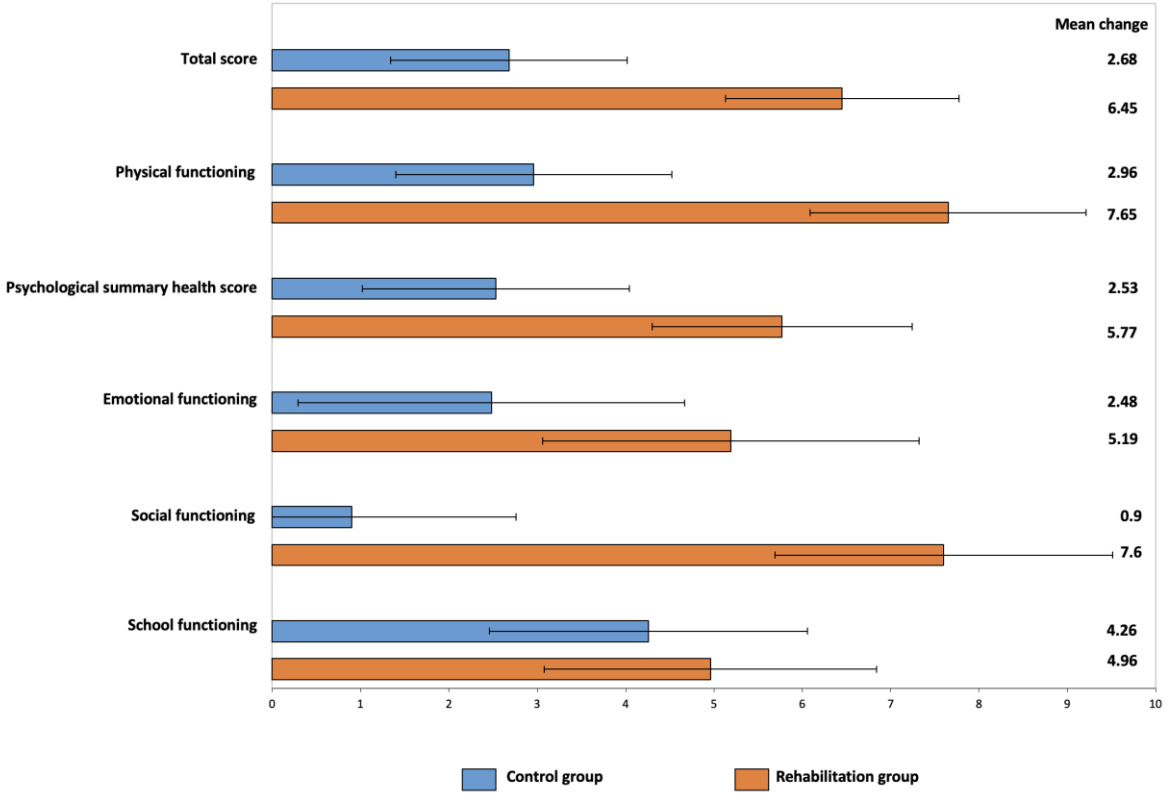
QUALIREHAB essai randomisé contrôlé multicentrique

- **NSN** :

142 patients inclus
(âge moyen 17,4 +/- 3,4)

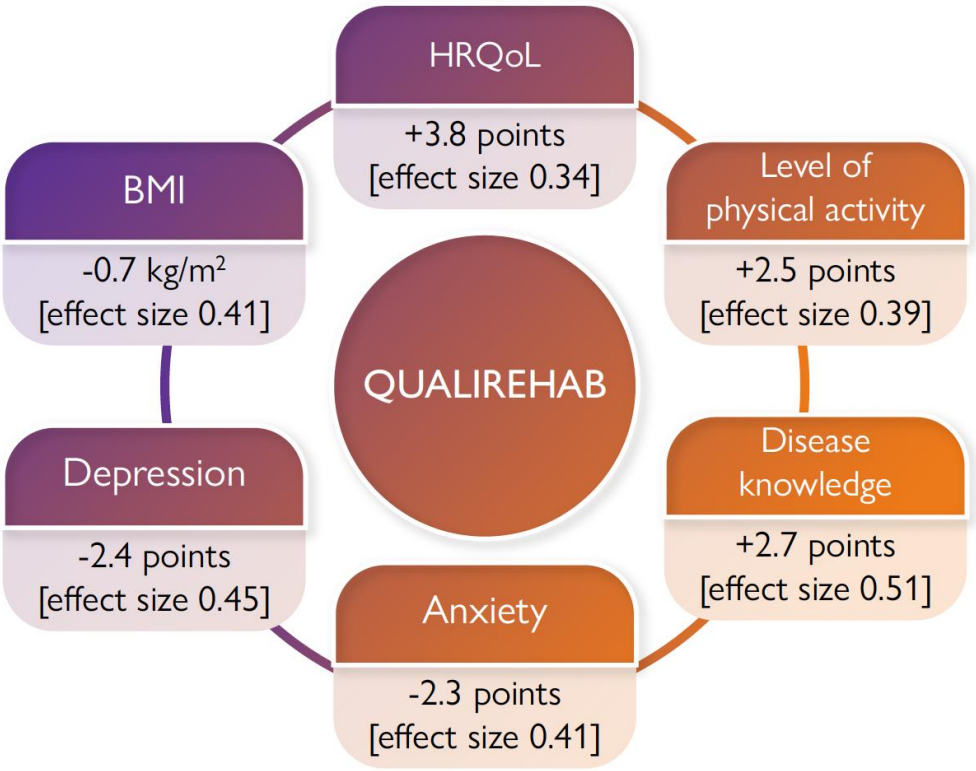
- **CJP**

- Modification positive du score total du PEDS^{QL} à 12 mois
- Différence moyenne: 3.8 (95%CI=[0.2;7.3]; P=0.038, effect size=0.34)



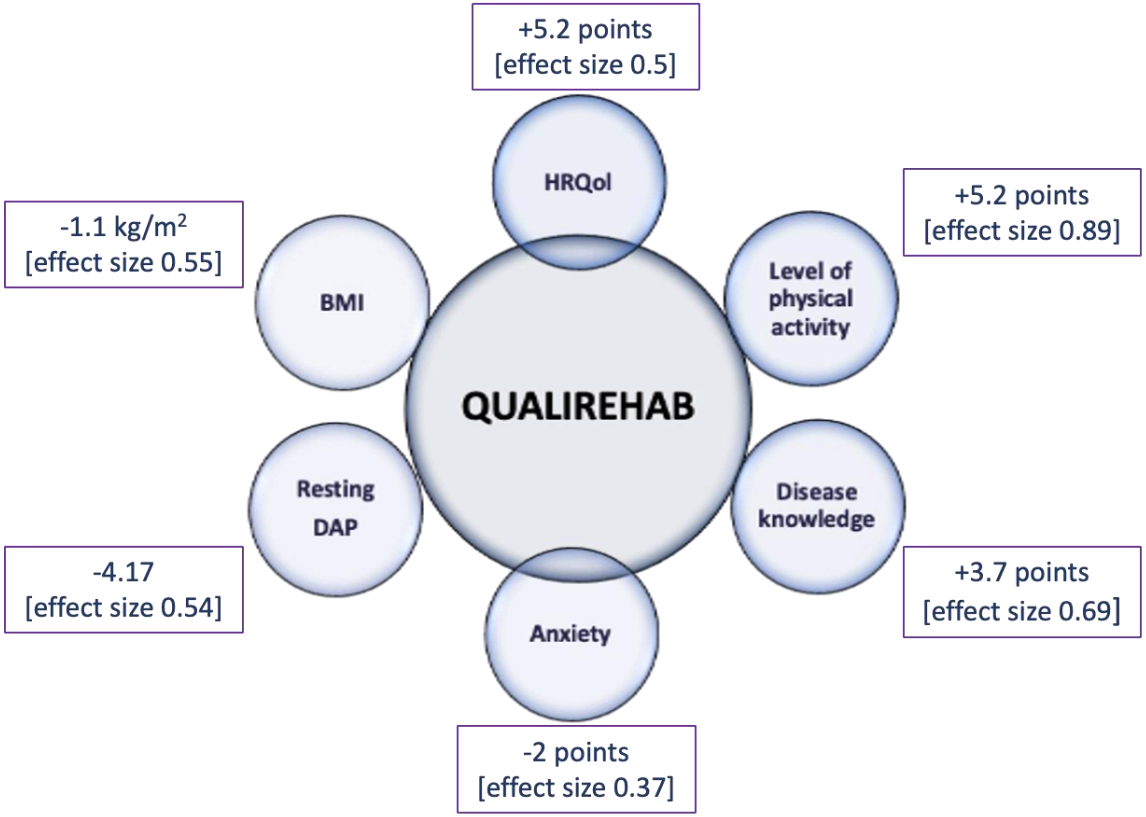
QUALIREHAB essai randomisé contrôlé multicentrique

En ITT



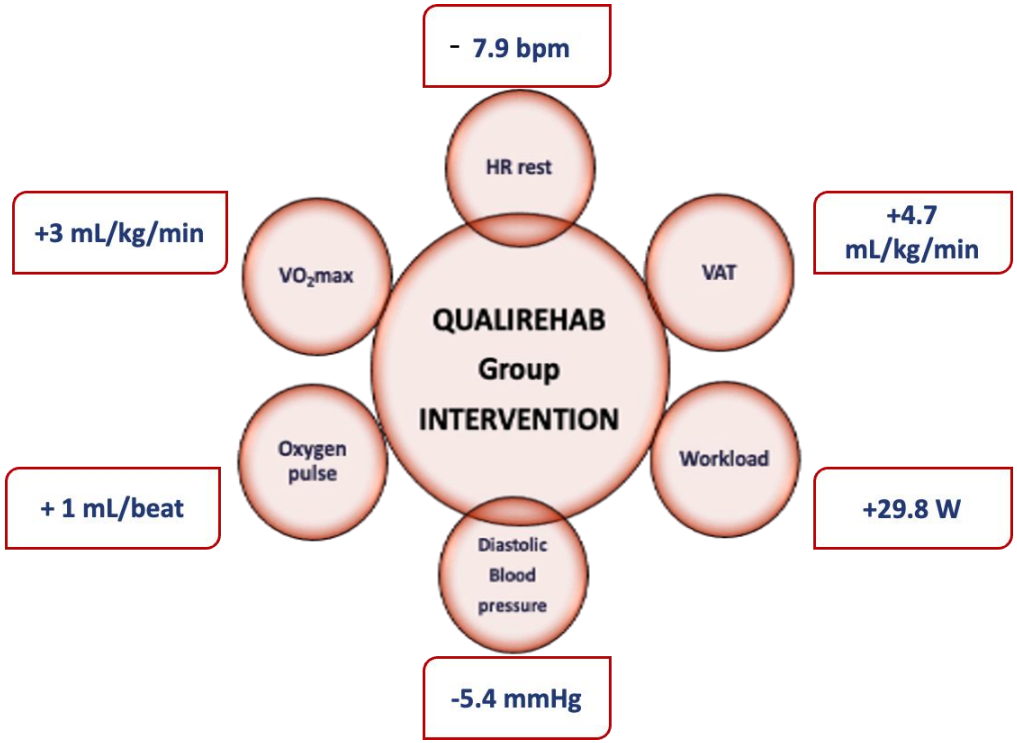
QUALIREHAB essai randomisé contrôlé multicentrique

En per protocole



QUALIREHAB essai randomisé contrôlé multicentrique

- Résultats positifs sur la $VO2_{max}$ à court terme
- Efficacité d'un programme hybride de 12 semaines



QUALIREHAB essai randomisé contrôlé multicentrique

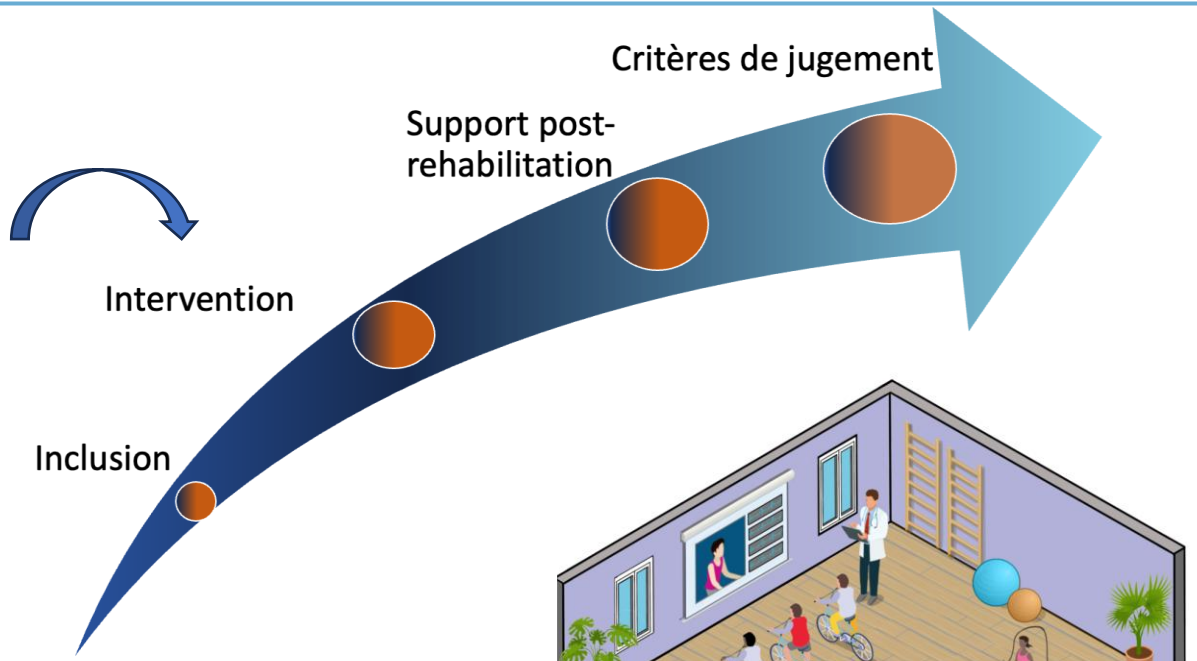
Acceptabilité et Innocuité de l'intervention

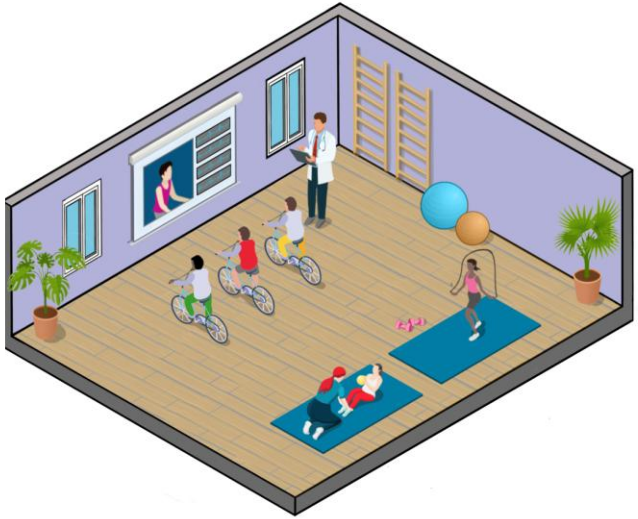
Réalisation de plus de 80% des sessions pour 81% des patients

Taux de participation satisfaisant : 1ère semaine en centre (91%), séances à domicile (88%), and sessions de rappel en centre (77%).

Pas d'effet indésirable lié au programme de réhabilitation

QUALIREHAB : perspectives et pistes d'amèlioration





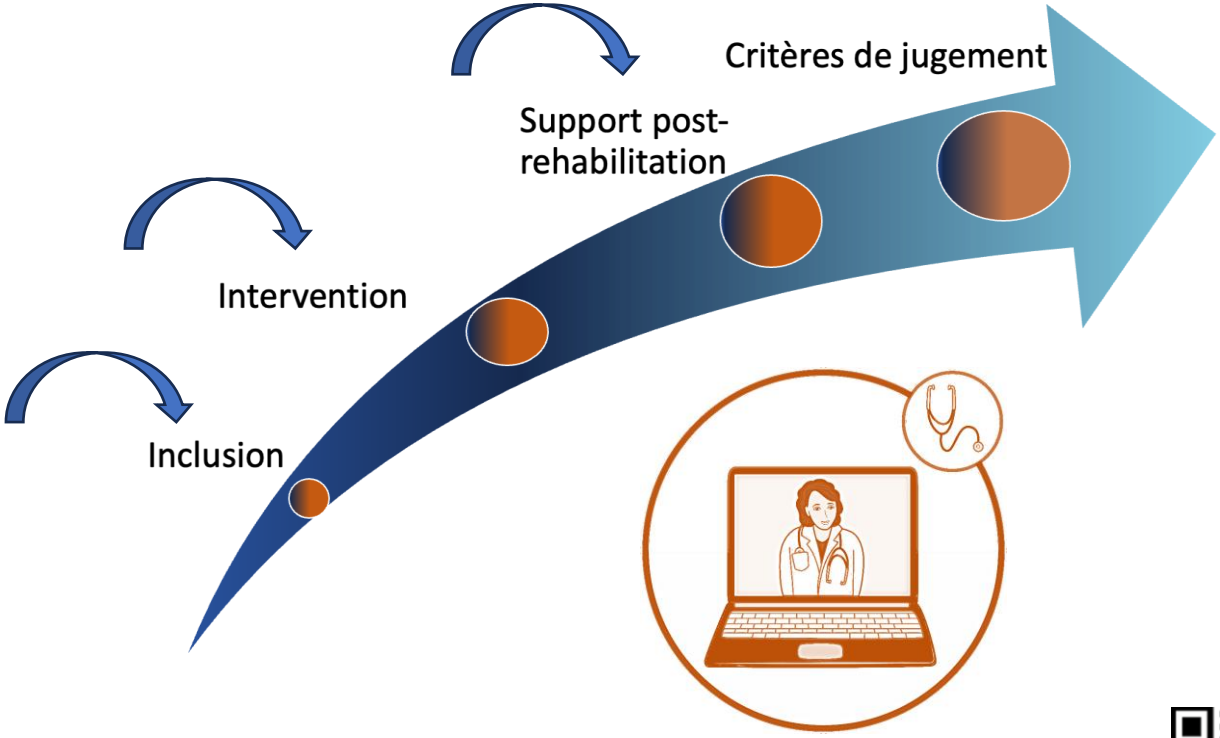
Stimulab

JUST COACHING

QUALIREHAB : perspectives

Plateforme digitale

Anamnèse
Anticiper . Accompagner . Accélérer



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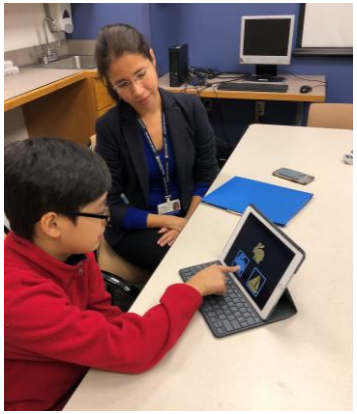
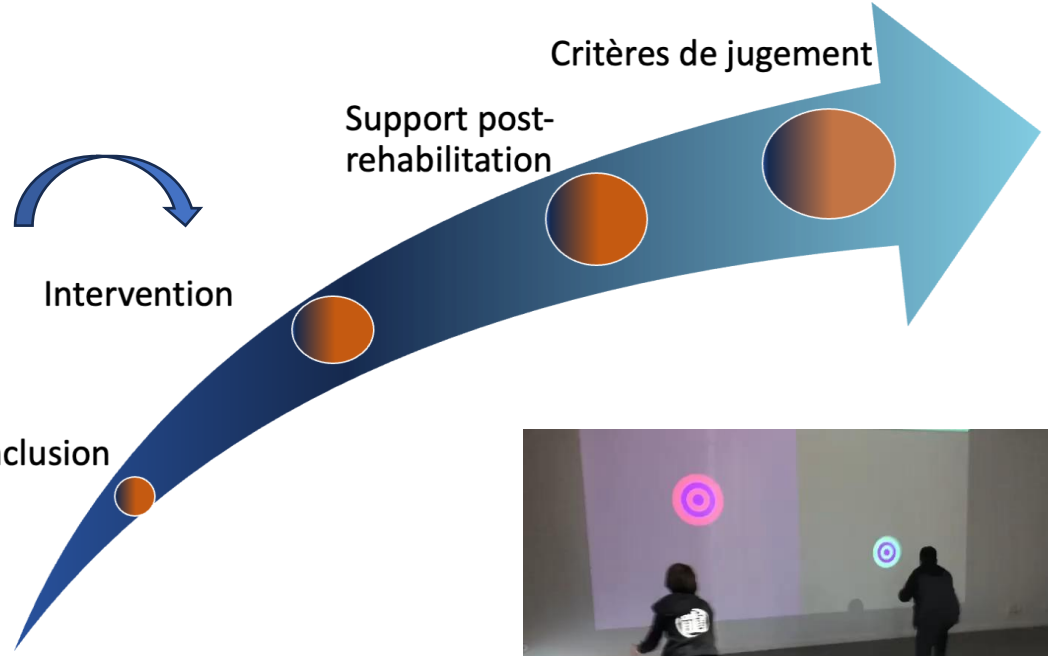
QUALIREHAB : perspectives



Johanna Calderon PhD



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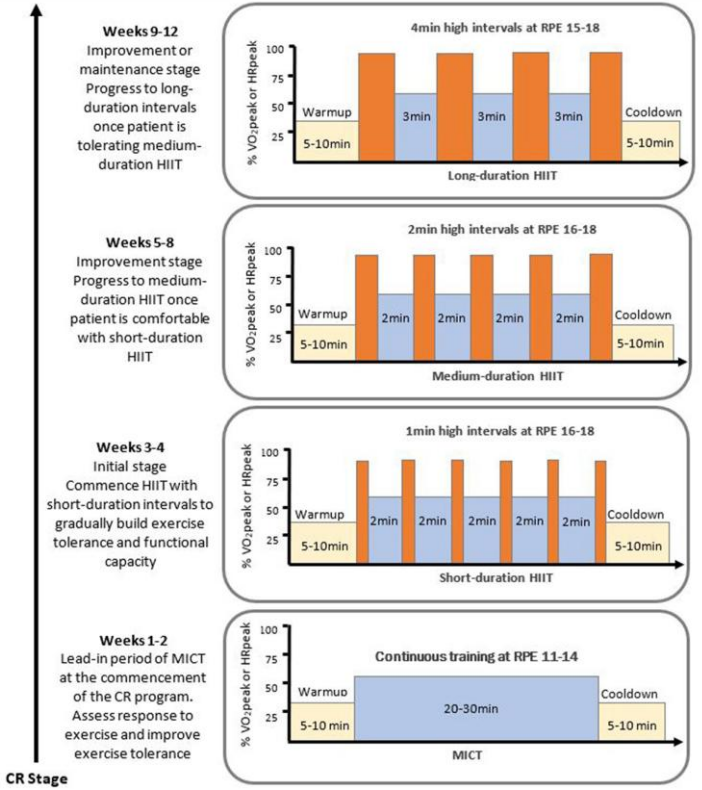
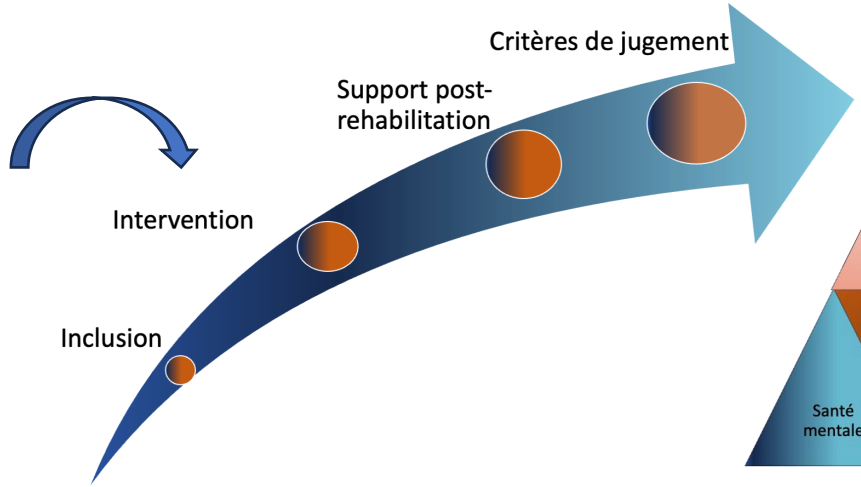
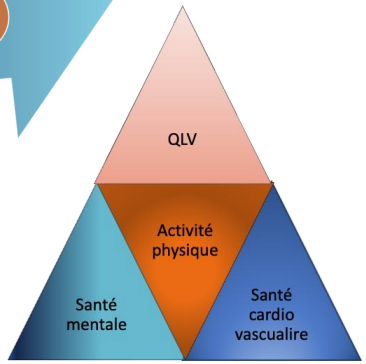
QUALIREHAB : perspectives



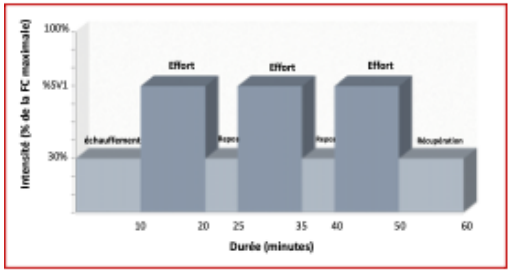
APA:
- Intensité
- Progression
- Personnalisation

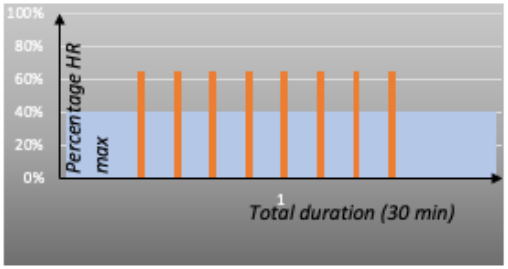


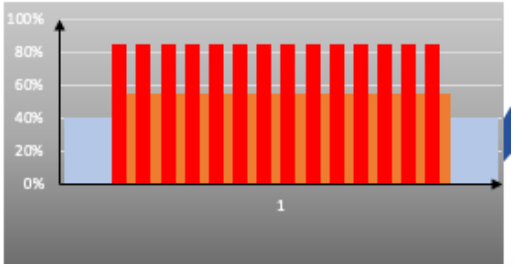


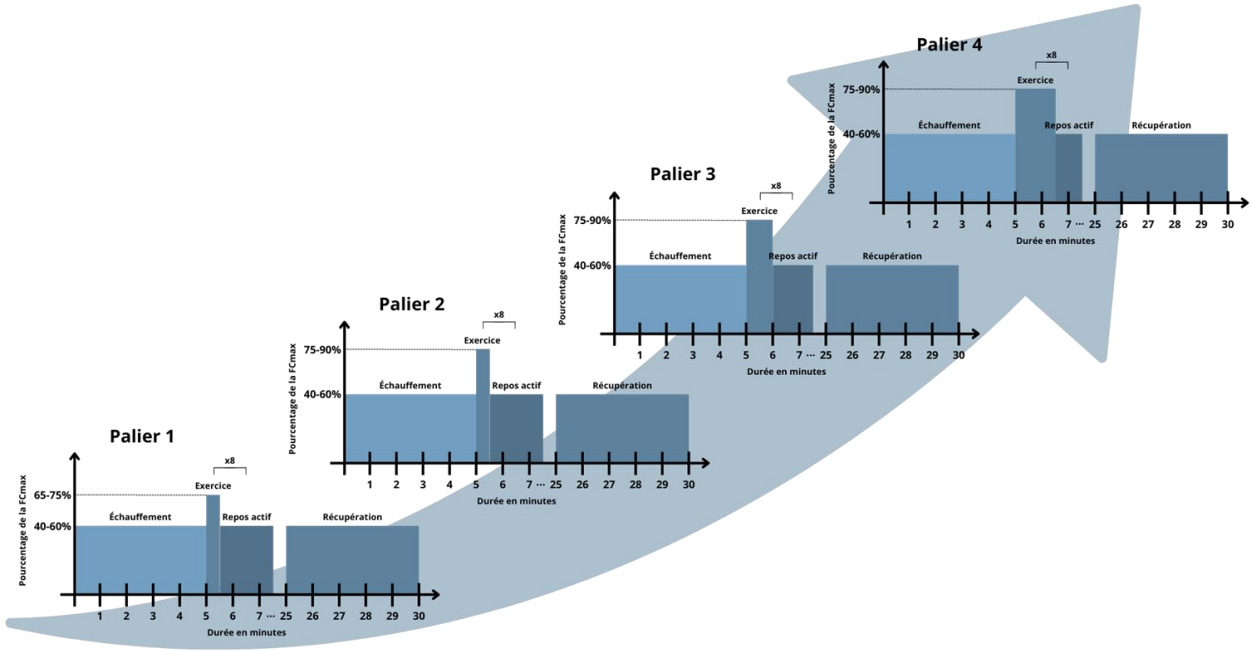
Jenna L. Taylor & al 2021

QUALIREHAB : perspectives









Mathieu Andrianoely, Victor Pommier

QUALI-NEUROREHAB

EXERCISE TRAINING

HIIT, cycle-ergometer + free physical activity (2 h per week, in presence and videoconference)

QUALI NEURO REHAB

NEURO-PSYCHOLOGICAL FEEDBACK

½ hour session per week with neuropsychologist

DIGITAL PLATFORM

PATIENT EDUCATION

Teleconsultation with nurse + digital content

COGNITIVE TRAINING (COGMED)

½ hour individual session twice a week

COGMED

MUSE MONTPELLIER UNIVERSITY OF EXCELLENCE

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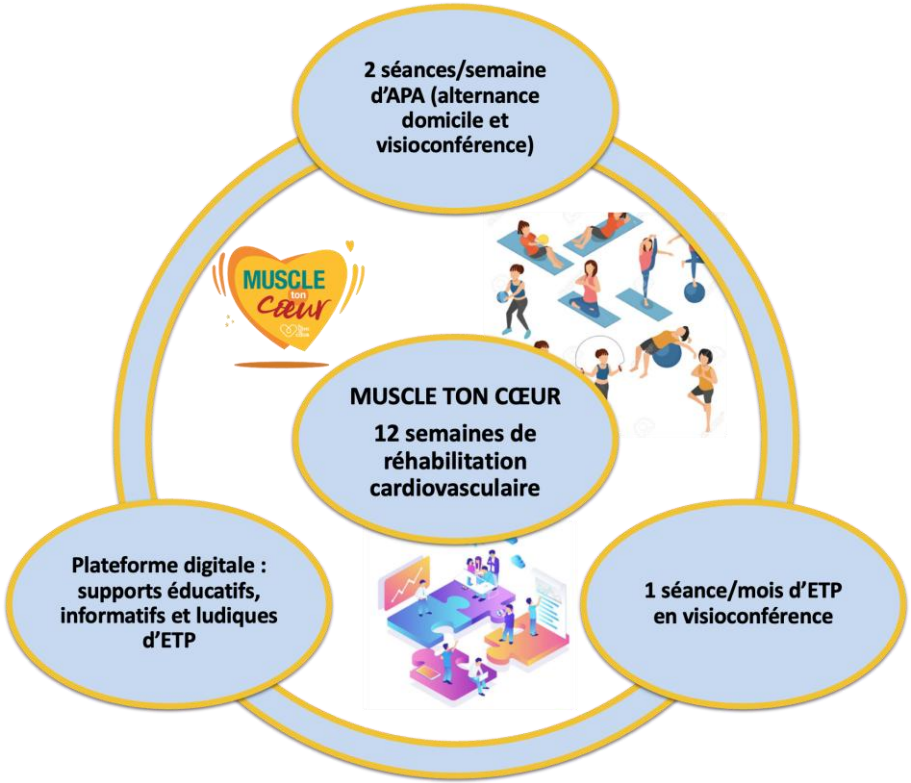
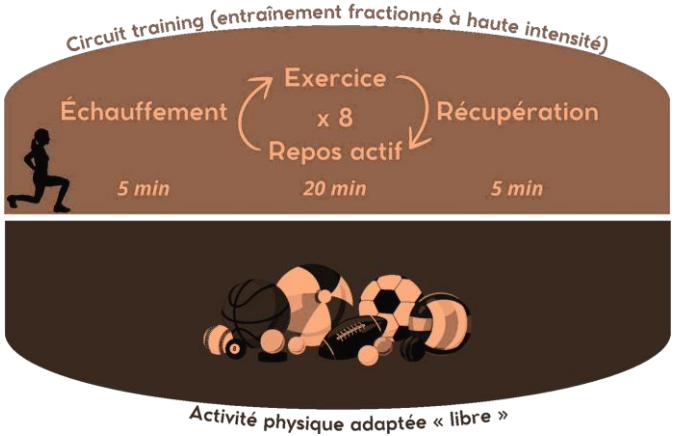
EUROPEAN JOINT PROGRAMME RARE DISEASES

La réhabilitation à domicile: QUALIREHAB-HOME





Mathieu Andrianoely
Enseignant en APA / Doctorant

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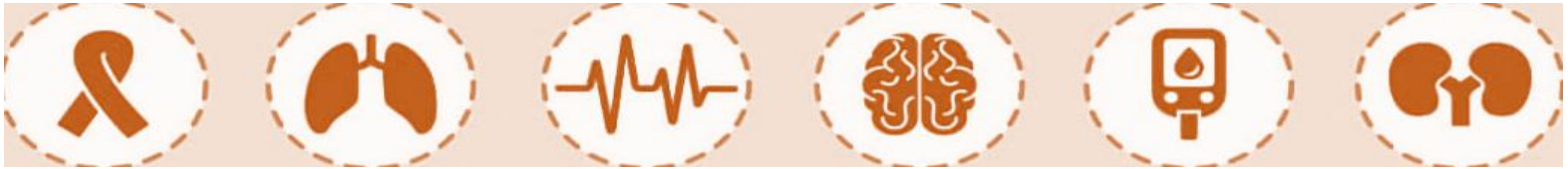
Pathologies chroniques: QUALIREHAB-ONCO

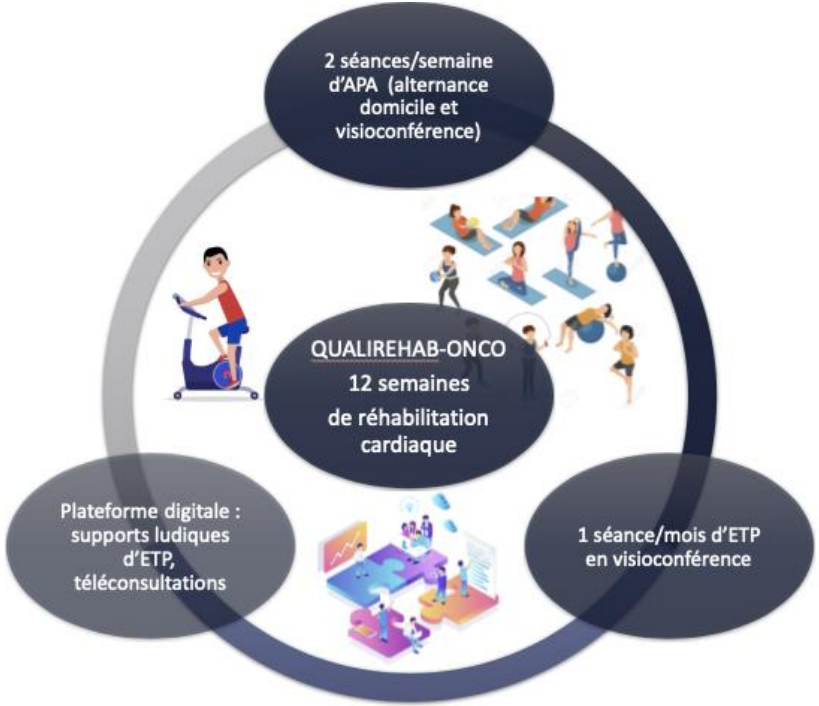


CLINICAL RESEARCH ARTICLE

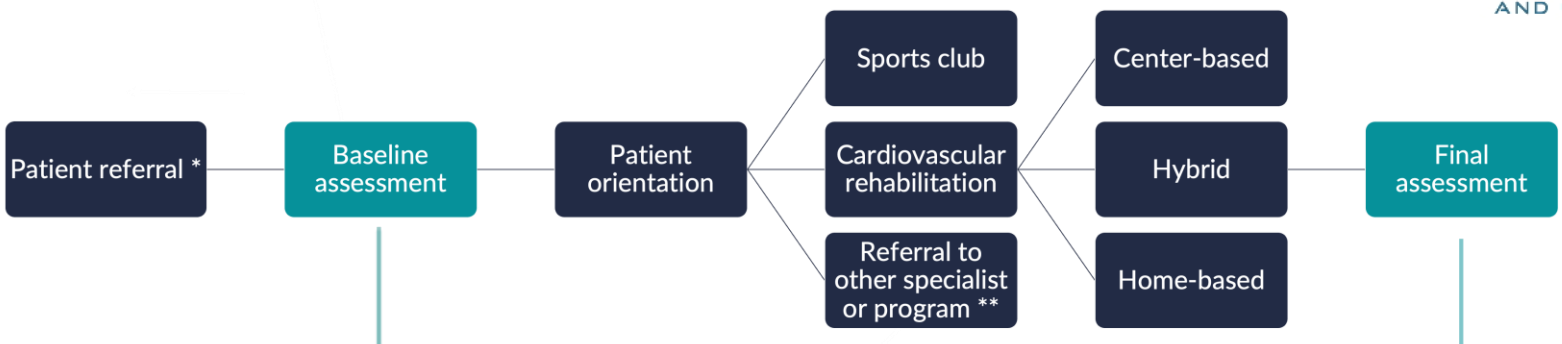
Check for updates

Impaired aerobic capacity in adolescents and young adults after treatment for cancer or non-malignant haematological disease

Arthur Gavotto[1,2], Vincent Dubard[1], Martina Avesani[3], Helena Huguet[4], Marie-Christine Picot[4], Hamouda Abassi[1], Sophie Guillaumont[1,5], Gregoire De La Villeon[1,5], Stephanie Haouy[6], Nicolas Sirvent[6], Anne Sirvent[6], Alexandre Cheron[6], Anne Requirand[1], Stefan Matecki[1,2] and Pascal Amedro[3,7]✉



QUALIREHAB: parcours patient



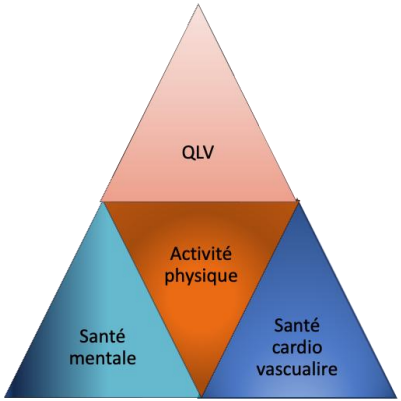
- ✓ Health-related quality of life
- ✓ CPET
- ✓ Cardiovascular, muscular, pulmonary, locomotor function
- ✓ Level of physical activity
- ✓ Mental health and behavioral aspects
- ✓ Dietetics
- ✓ Social and environmental aspects

* By specialist physician, family doctor, nurse practitioner, etc.
**Dietician, psychologist, neuropsychologist, psychiatrist, physiatrist, social worker, other subspecialists, etc.

Doctors should be able to prescribe exercise like a drug

Few think that brief advice can change behaviour

Exercise is medicine: a call to action for physicians to assess and prescribe exercise



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