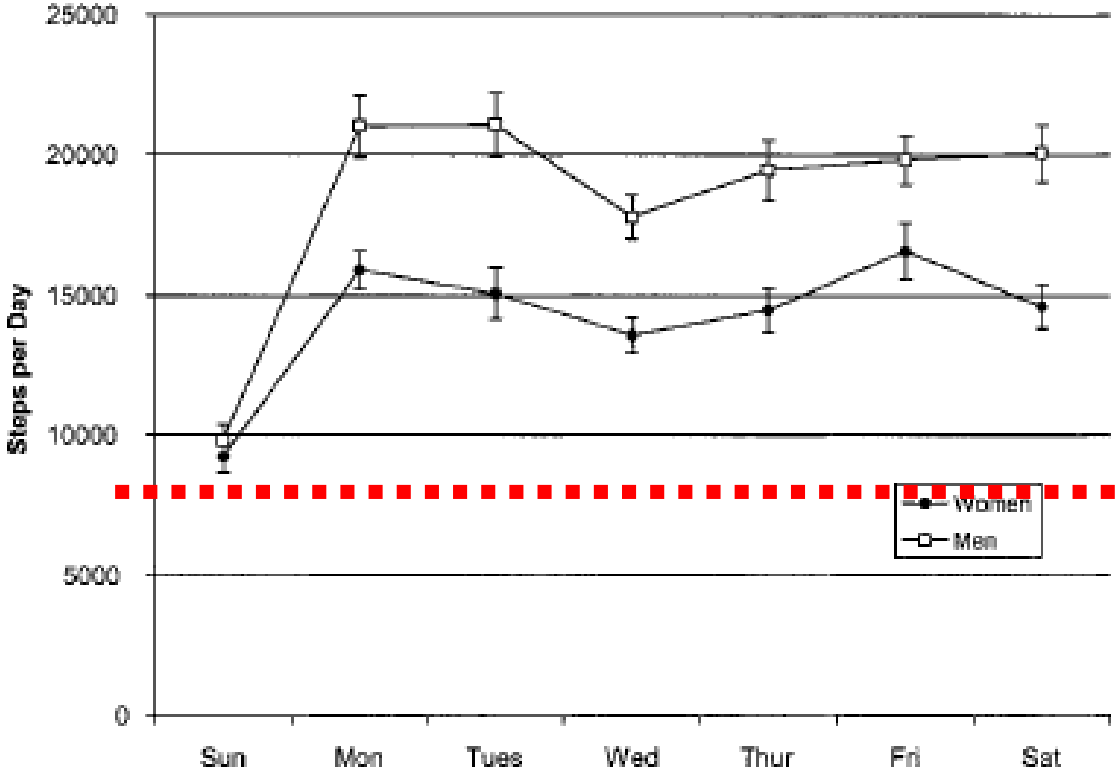
Bénéfices des activités physiques adaptées dans la prise en charge de sujets atteints de pathologies mentales

BERNARD Paquito

9ème Congrès de l'Association Nationale pour la Promotion des Soins Somatiques en Santé Mentale

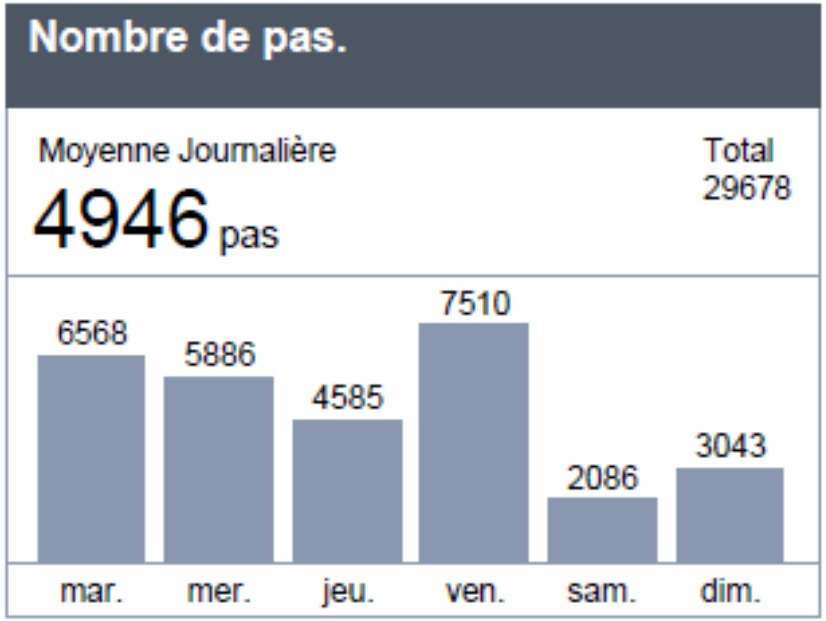
♂ 10h d'AP vigoureuse /semaine, 8h d'AP d'intensité modérée

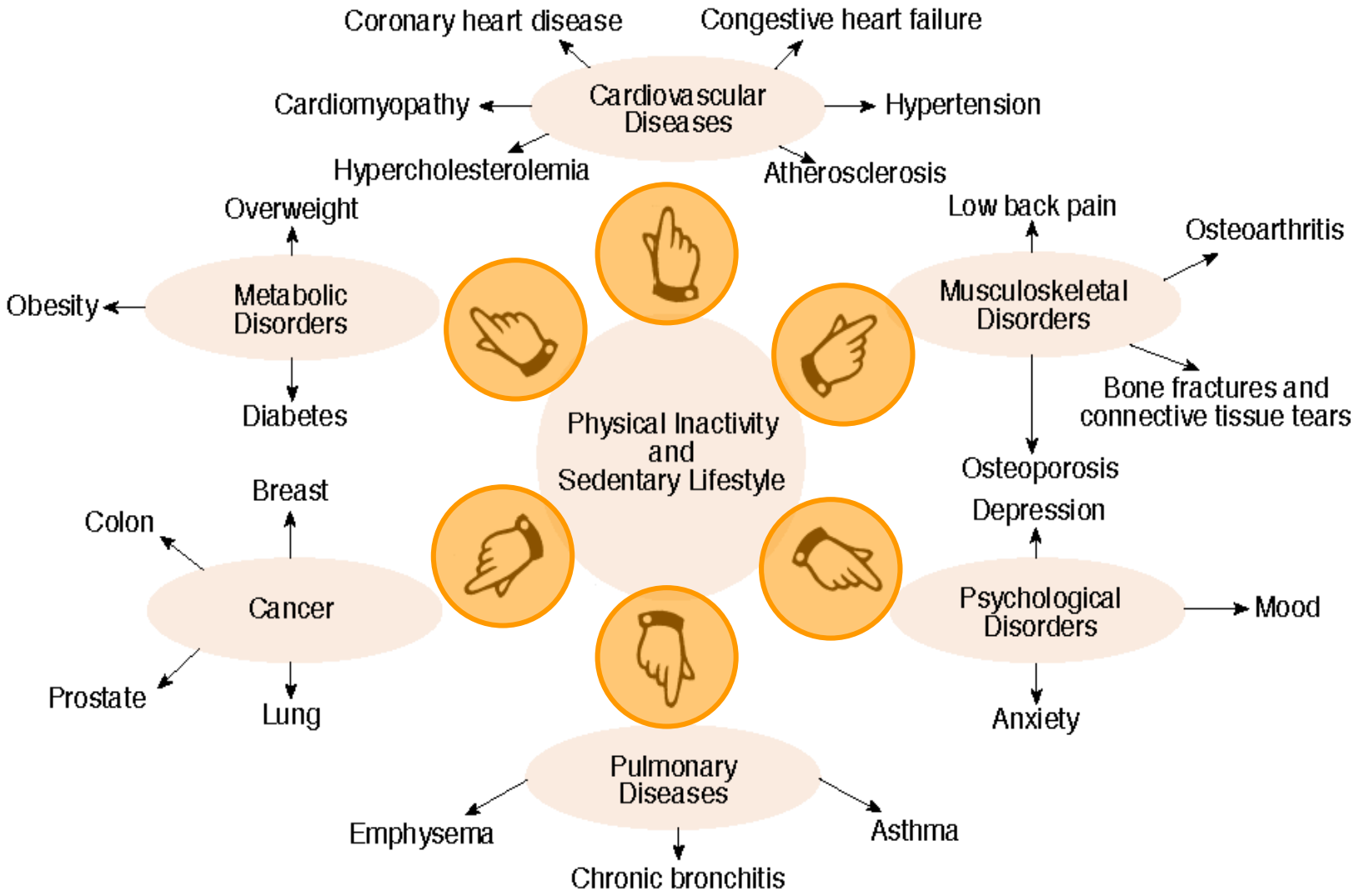
Obésité = 0% ♂ 9% ♀



Bassett, D,(2004). Physical activity in an Old Order Amish community. *Medicine & Science in Sports & Exercise*.

Homme 63 ans, IMC = 22.2, EDM





Pedersen BK, Saltin B. Evidence for prescribing exercise as therapy in chronic disease. Scand J Med Sci Sports 2006;16

Review

Neuropsychobiology

Neuropsychobiology 2009;59:191–198
DOI: 10.1159/000223730

Opinion TRENDS in Neurosciences Vol.25 No.6 June 2002

se: a behavioral

Exercise and Physical

Exercis
Many F

Andréa Deslande

BJPsych The British Jo
197, 357–364

Physic
Samuel B. Ha

The New England Journal of Medicine

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VOLUME 346 MARCH 14, 2002 NUMBER 11

EXERCISE CAPACITY AND MORTALITY AMONG MEN REFERRED FOR EXERCISE TESTING

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THE LANCET Neurology

Leisure-time physical activity at midlife and the risk
dementia and Alzheimer's disease

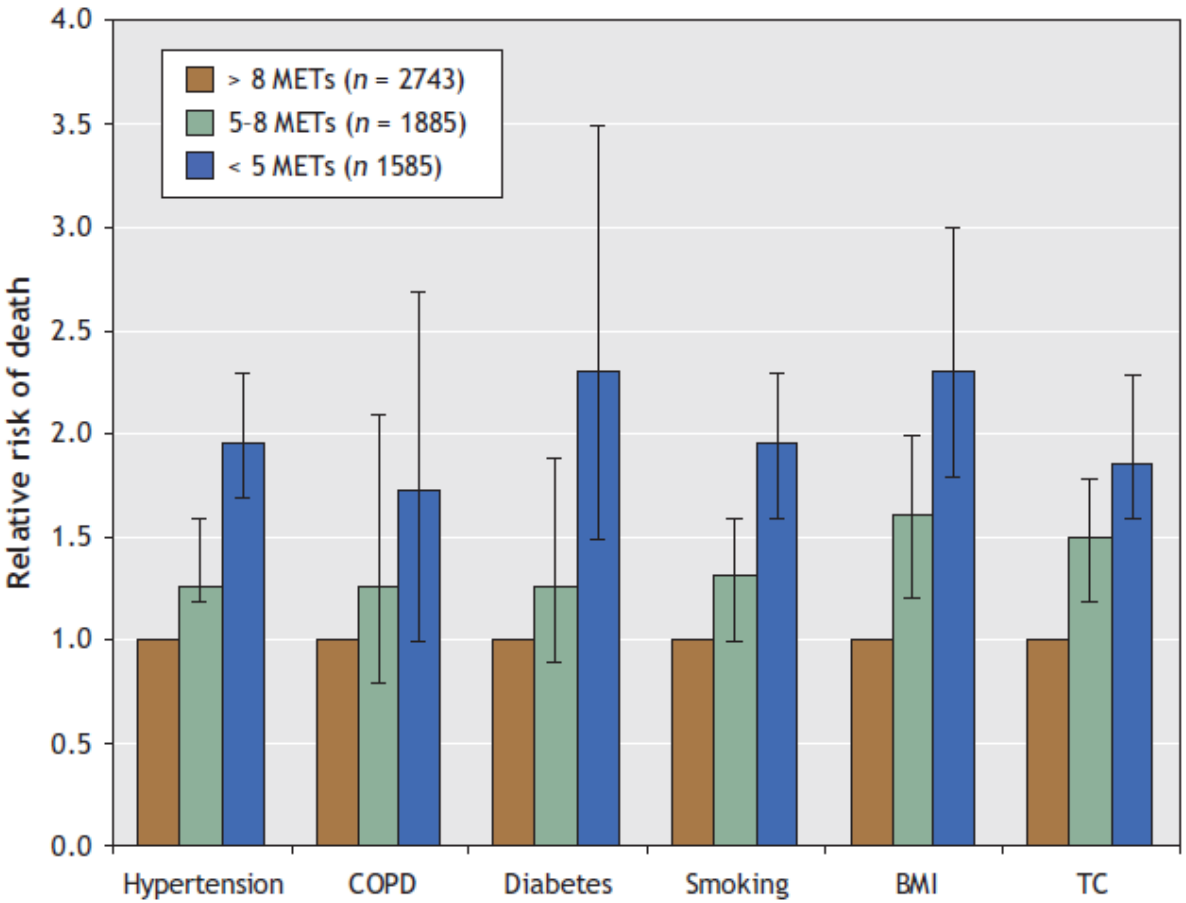
Suvi Rovio, Ingemar Kåreholt, Eeva-Liisa Helkala, Matti Viitanen, Bengt Winblad, Jaakko Tuomilehto, Hilkka Soininen, Aulik

nature REVIEWS

SCIENCE AND SOCIETY

Be smart, exercise your heart: exercise effects on brain and cognition

Charles H. Hillman, Kirk I. Erickson and Arthur F. Kramer



Myers J. Exercise capacity and mortality among men referred for exercise testing. N Engl J Med 2002;346:793-801.

EFFET DOSE

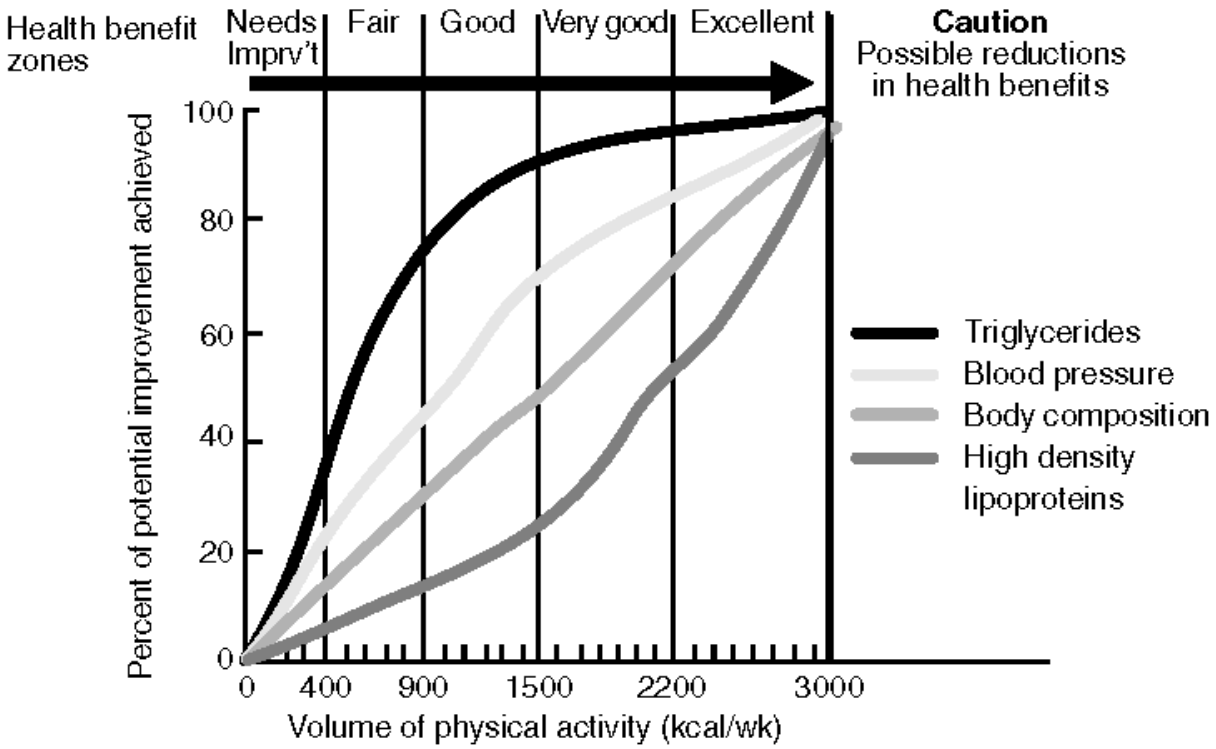


Figure 1.2 Dose-response relationship and health benefit zones for health benefits and volume of physical activity participation.

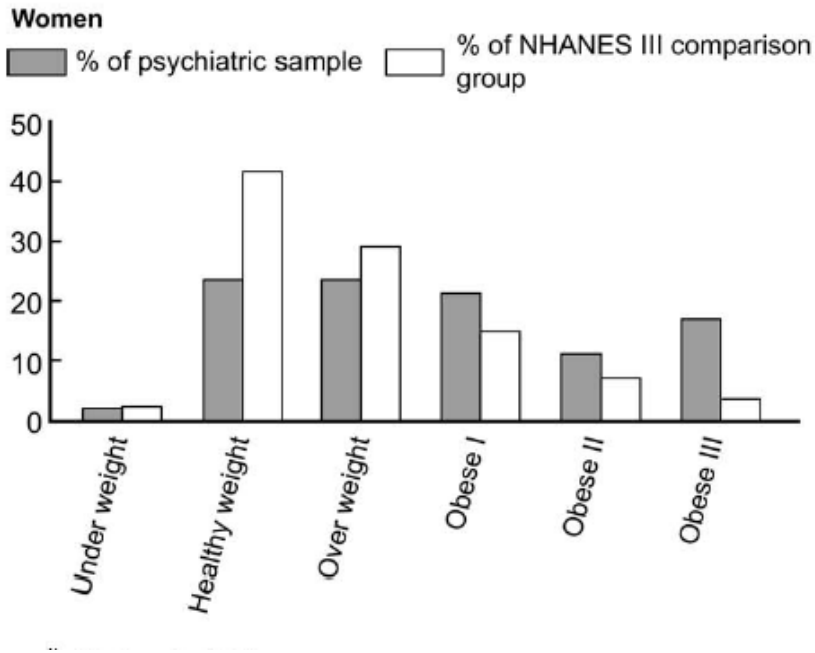
"Source: *The Canadian Physical Activity, Fitness and Lifestyle Appraisal: CSEP's Plan for Healthy Active Living*, 2nd edition © 1998. Reprinted with permission from the Canadian Society for Exercise Physiology." Schematic developed by N. Gledhill and V. Jamnik of York University.

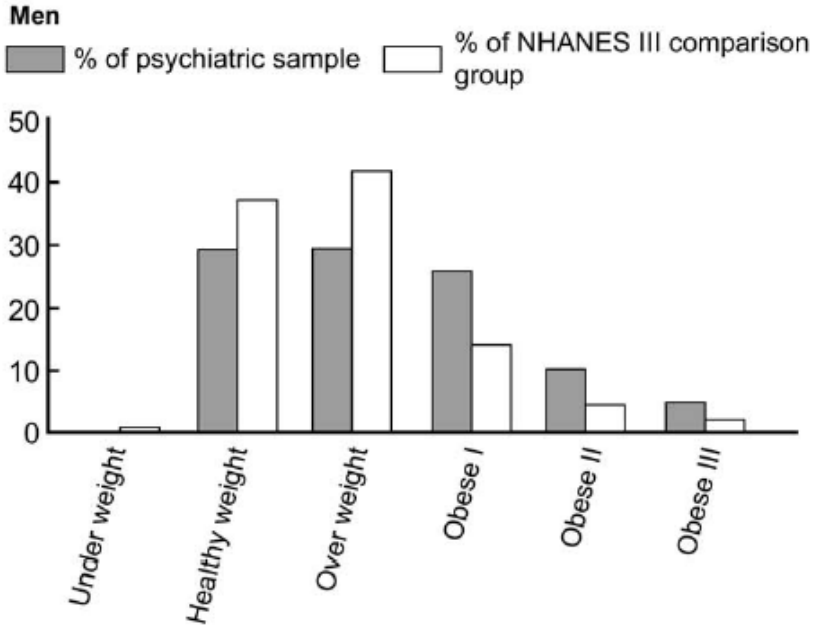
Dépense énergétique, niveau d’Activité Physique (AP), condition physique chez des adultes schizophrènes et dépressifs majeurs.

Non observance au traitement antipsychotique est X2 chez sujets obèses / surpoids ou normo-pondérés (OR = 2,5; 95% CI 1,1–5,5)

Périmètre abdominal = prédicteur de la qualité de vie chez sujets schizophrènes

(Faulkner 2007)





Allison 2009 Obesity Among Those with Mental Disorders. A National Institute of Mental Health Meeting Report. American Journal of Preventive Medicine.

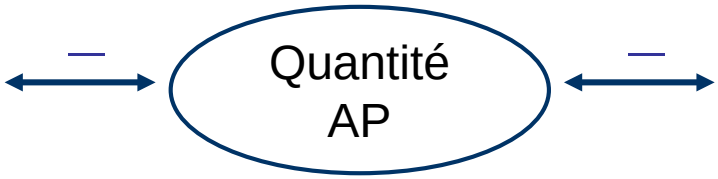
Dépense énergétique quotidienne > 20% inférieure aux recommandations de l'OMS avec 2511 kcal/jr ± 606
(calorimétrie indirecte, ♂ clozapine >6 mois) (Sharpe, 2006)

4% ont une dépense énergétique = recommandations américaines (150 min/sem d'AP > 10min) (schizophrènes en surpoids ou obèses) (accéléromètre) (Jerome et al., 2009)

1.5 H d'AP de moyenne intensité contre 2.9 H ($p<0.001$)
0.3 H d'AP d'intensité élevée contre 1.7H ($p<0.001$)
(Roick et al., 2007).

Roick, (2007). Health habits of patients with schizophrenia. Social psychiatry and psychia epidemio, 42(4), 268–276.
Jerome, G, (2009). PA levels of persons with mental illness attending psychiatric rehabilitation programs. Schizophrenia Research, 108(1-3), 252-257.
Sharpe, J. (2006). Energy expenditure and physical activity in clozapine use: implications for weight management. Australian and New Zealand Journal of Psychiatry, 40(9), 810-814.

Isolement social
(McCormick et al., 2009)

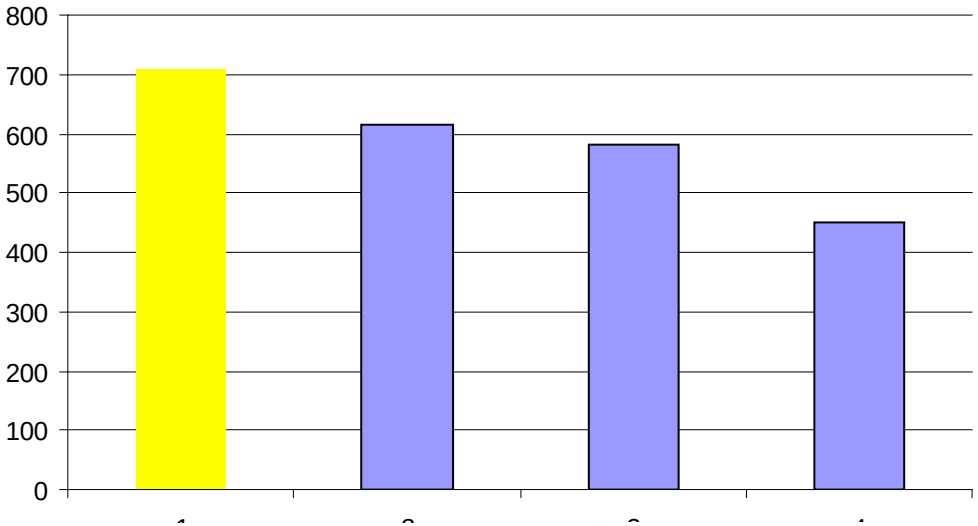


Symptômes négatifs
(Yamamoto et al., 2010)

Résultats contradictoires chez sujets bipolaires
(Kilbourne et al., 2007)

Test de marche de 6 minutes

Masse Corporelle

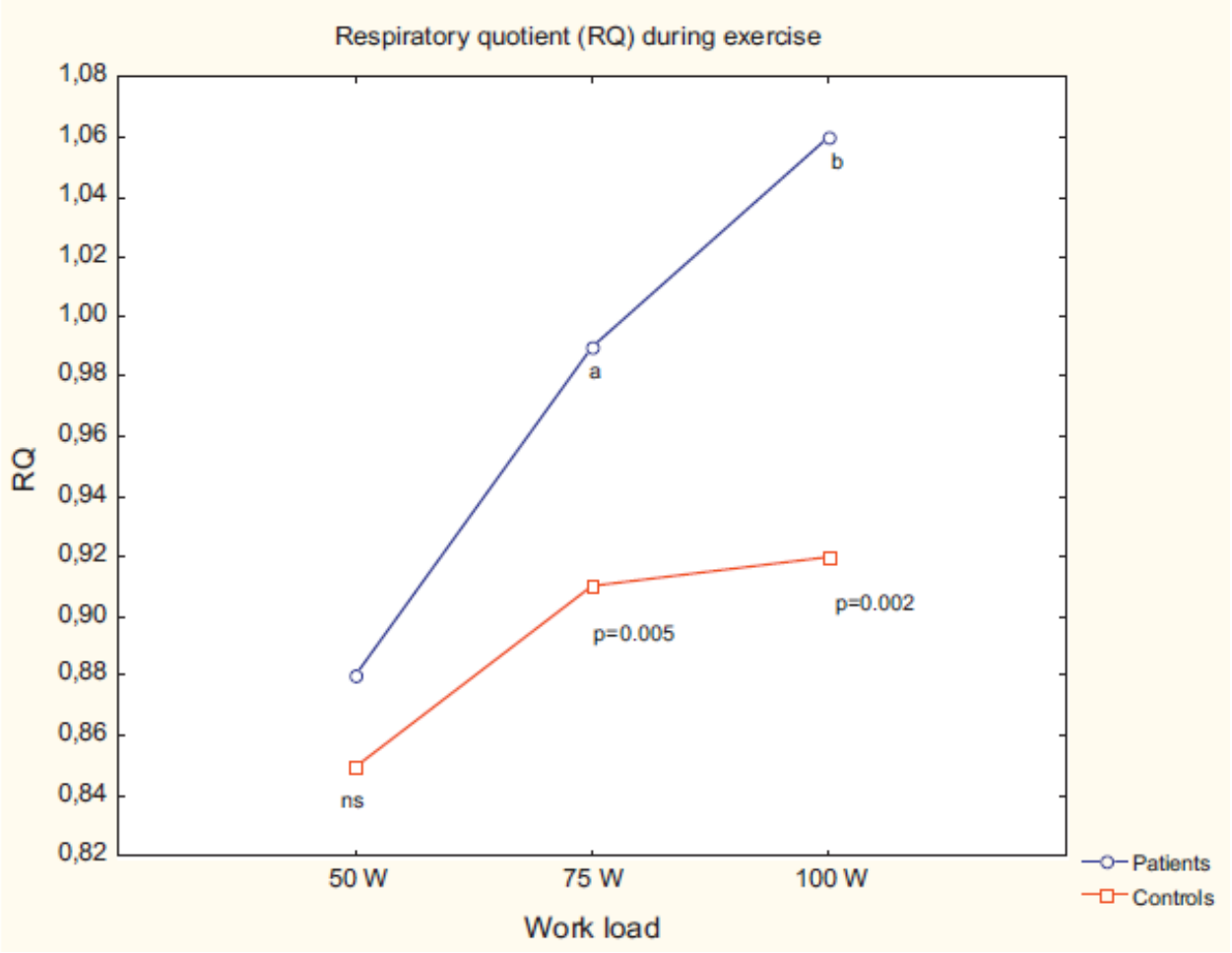


Syndrome Métabolique

Without MetS ($n=69$)	With MetS ($n=37$)	P
610.0 ± 93.7	527.6 ± 108.9	<0.001

Vancampfort, D.(2011). Association of the metabolic syndrome with PA performance in patients with schizophrenia. *Diabetes & Metabolism*.

Vancampfort. (2011). Relationships between obesity, functional exercise capacity, physical activity participation in people with schizophrenia. *Acta Psychiatrica Scandinavica*, *123*(6), 423-430.



Résultats similaires EDM

(Boettger 2009; Donath 2010)

Nilsson BM, et al. Physical capacity, respiratory quotient and energy expenditure during exercise in male patients with schizophrenia compared with healthy controls. European Psychiatry (2010

Effets de l’AP sur la santé des adultes schizophrènes.

Equipe	N	Intervention	Résultats
Beebe et al. 2005	12, M=52*, ♂/♀ 8/2	16S, 3 fois/S, ▪ 10 min échauff+ 30min marche sur tapis ▪ Soins standards	⬊ taux de masse grasse (p=.03) (gp expé) Abs effet sur les symptômes positifs et négatifs et la distance TDM6
Duraiswamy et al. 2007	61, M=31*, ♂/♀ 42/19	15S, 5 fois/S, ▪ 40 min yoga+ 20 min relaxation ▪ 10min marche+ 5 min jogging+ 20 postures	⬊ PANSS total (ET, .74) Effet non significatif pour le score PANSS symptômes positifs ⬊ PANSS symptômes négatifs (p<.01), ⬈ fonctionnement social (p<.03) Abs d'effet symptômes extrapyramidaux et mouvements involontaires 22,8% sortie d'étude
Marzolini et al. 2009	13, M=42*, ♂/♀ 8/5	12S, 2fois/S, ▪ 10 échauff+ 20 min résistance+ 60 min AP aérobie+ 5 min étirements ▪ Soins standards	Abs différence => santé mentale. Différence significative pour le groupe AP (p<.01) pour les TDM6 (ET, .91), la force (ET, .94), TT/TH (ET, .11) et IMC (ET, .58)
Acil 2008 et al.	30, M=30, ♂/♀ 17/13	10S, 3fois/S, ▪ 10 min échauff+ 25 min AP aérobie+ 5 min étirements ▪ Soins standards	⬊symptômes négatifs et positifs (p<.05), ⬊ symptômes psychiatriques (p<.05) et ⬈ QOL (p<.05)

Gorczynski P,Faulkner G. Exercise therapy for schizophrenia. Cochrane Database of Systematic Reviews 2010
Marzolini S,. Feasibility and effects of a group-based resistance and aerobic exercise program for individuals with severe schizophrenia: A multidisciplinary approach. Ment Health Phys Act 2009;2(1):29-36
Acil AA,. The effects of physical exercises to mental state and quality of life in patients with schizophrenia. J of Psychia and Ment Health Nurs. 2008;15(10):808–815

Approche médicamenteuse et non médicamenteuse de la gestion du poids

Metformine ?

Interventions non médicamenteuses (versus traitement usuel) entraine une diminution de la prise de poids due à la prescription d'antipsychotique (-2.56kg, IC 95% -3.20 à -1.92, $p<0.001$) (Alvarez 2008)

Alvarez-Jiménez M, Hetrick SE, González-Blanch C, et al. Non-pharmacological management of antipsychotic-induced weight gain: systematic review and meta-analysis of randomised controlled trials. Br J Psychiatry 2008;193(2):101-107.
Praharaj SK, Jana AK, Goyal N, Sinha VK. Metformin for olanzapine induced weight gain: a systematic review and meta analysis. Br J of Clin Pharmacology 2011;71(3):377-382.

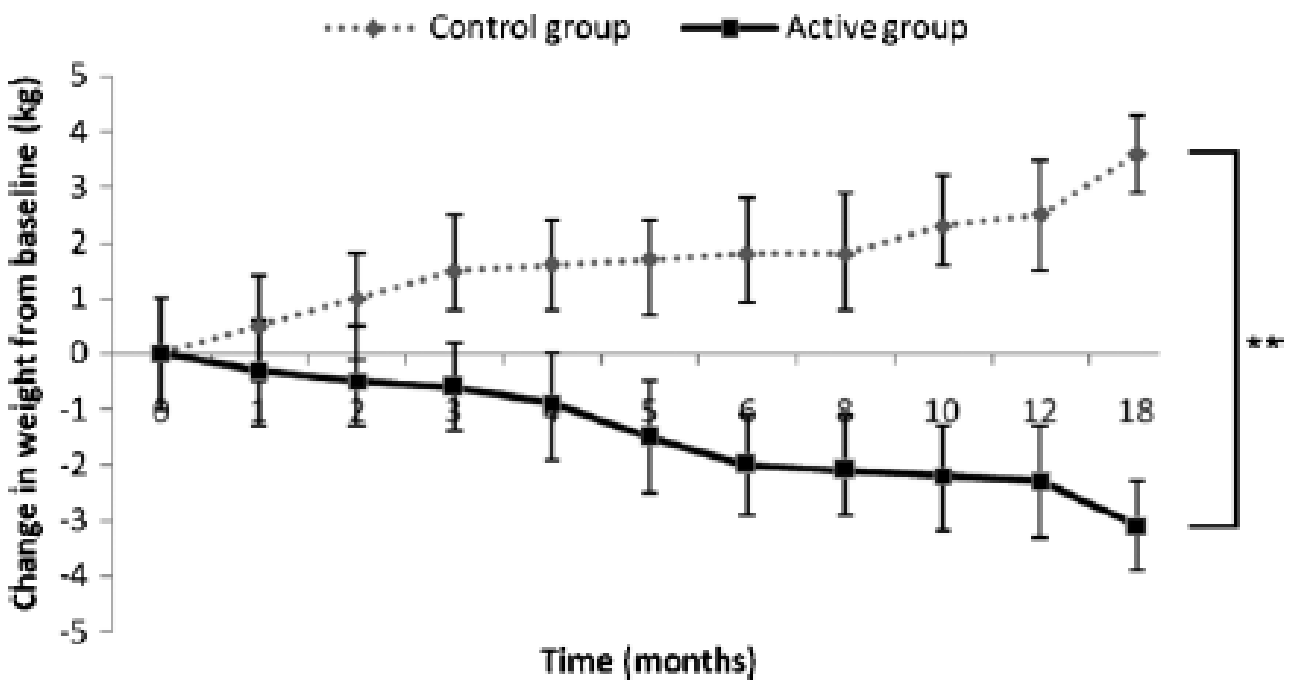
RCT conseil nutritionnel + marche (3 X/sem 60 min, intensité faible), 6 mois chez des sujets obèses sous clozapine (dose ≥ 300 mg/jour).

↘ périmètre abdominal (3,3 cm, p<.001), IMC (5,4%, p<.001) et la masse corporelle après 3 et 6 mois / groupe contrôle (Wu 2007)

Etude prospective, conseil nutritionnel + AP aérobie (2X/sem), 18 mois

lipoprotéines à haute densité (HDL) (+21,4%, p<.01), lipoprotéines à basse densité (LDL) (-13,7%, p<.01), et hémoglobine glyquée (HbA1c) (-11,4%, p<.01).

(Poulin 2007, Daumit 2010)



JAMA®

Lifestyle Intervention and Metformin for Treatment of Antipsychotic-Induced Weight Gain: A Randomized Controlled Trial

RCT à 4 bras compare chez des sujets ayant une prise de poids de 10% suite à une médication antipsychotique

metformine (750mg/jr) + suivi nutritionnel +ETP + AP aérobie modérée (lifestyle)

metformine seule

lifestyle+ placebo

placebo

Metformine + lifestyle > autres conditions

IMC (-1,8, p<.001)

Masse corporelle (-4,7 kg, p<.001)

Périmètre abdominal (-2 cm, p<.001)

sans effets secondaires plus importants que les autres conditions

adhésion faible AP (57%)

(Wu 2008)

Daumit, G. et al. (2010). A behavioral weight-loss intervention for persons with serious mental illness in psychiatric rehabilitation centers. *International Journal of Obesity*.

Effets de l’AP sur la santé d’adultes dépressifs majeurs.

23 Essais (907 participants), ITT analyses Effet de taille => -0.82 (95% CI -1.12, -.51)
(Mead 2008)

Effet de taille autres Meta analyses:

-0.72 (Craft & Landers, 1998)
-0.80 (Rethorst, 2010)
-1.1 (Lawlor & Hopker, 2001)
-0.53 (North & McCullagh1990)

THE COCHRANE COLLABORATION®

Recommandations

	Depressive symptoms	Clinically depression
Intervention duration	4-9 week > 17-26 week 10-16 week > 17-26 week	10-16 week > 4-9 week
Bout duration	20-29min>45-59min	45-59 > 30-44 min
Exercise intensity	50-60% > 45-59% FC max ≥75%% > 45-59% FC max	No difference between different intensity
Exercise frequency	2 by week	≥ 2 by week
Exercise type	Aerobic + resistance	Aerobic or resistance
Comment		Coupled with antidepressant

Rethorst, C. D., Wipfli, B. M., & Landers, D. M. (2009). The antidepressive effects of exercise: a meta-analysis of randomized trials. Sports Medicine, 39(6), 491-511.

Mead, G. E., Morley, W., Campbell, P., Greig, C. A., McMurdo, M., & Lawlor, D. A. (2008). Exercise for depression. Cochrane Database of Systematic Reviews (Online), (4).

Study	Treatment group	Pre	Post	Change
Martinsen et al.[61] (1985)[a]	Exercise	25.2	12.1[b]	13.1[c]
	Control	31.5	22.8	8.7
Singh et al.[77] (2001)[a]	Exercise	21	9.2[b]	11.8[c]
	Control	18.4	11	7.4
Singh et al.[76] (1997)[a]	Exercise	21.3	9.8[b]	11.5[c]
	Control	18.4	13.8	4.6
Veale et al.[82] (1992)[a]	Exercise	22.91	13.94[b]	8.97[c]
	Control	26.66	17.79	8.87
McNeil et al.[60] (1991)	Exercise	16.6	11.1[b]	5.5
	Control	15.2	14.7	0.5
Epstein[47] (1986)[a]	Exercise	25.29	9[b]	16.29[c]
	Control	22	16.3	5.7
Broocks et al.[30] (1998)	Exercise	15.2	7.2[b]	8
	Control	18.3	15.8	2.5
Mutrie[64] (1998)[a]	Exercise	22.44	9.46[b]	12.98[c]
	Exercise	21.86	14.63	7.23
	Control	23	21.42	1.58

a Clinically significant change in depression scores.

b Post-treatment scored crossing the cutoff point of 14.29.

c Pretreatment to post-treatment change >8.46.

Rétablis

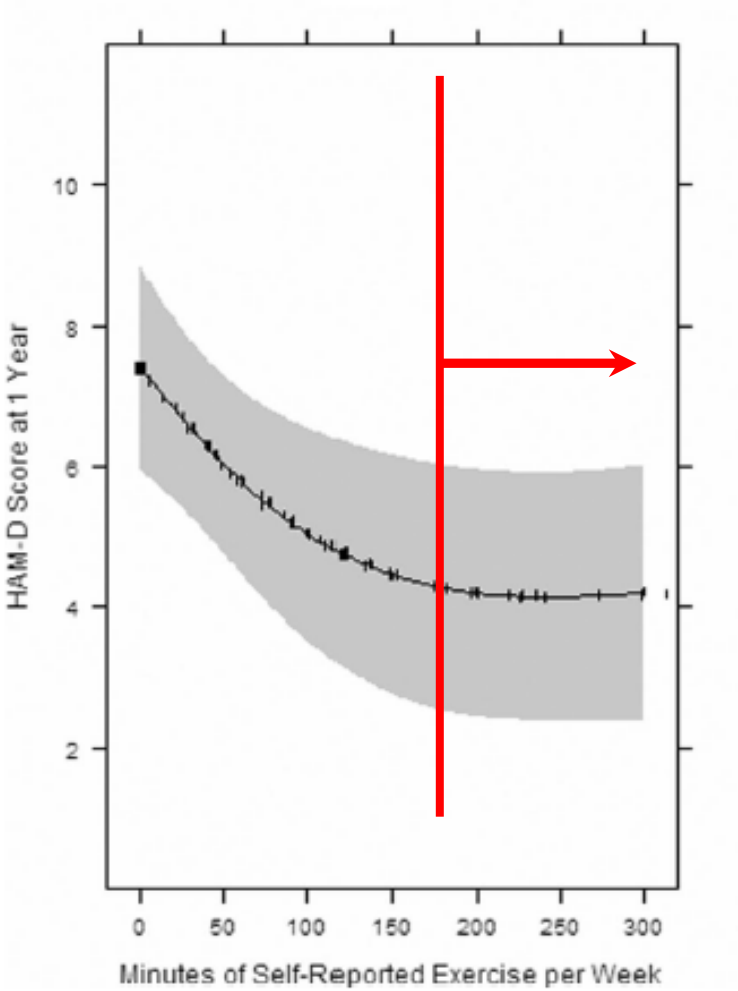
Améliorés

Inchangés

Détériorés

(Rethorst, 2010)

SMILE Study



Author	Medication	Cognitive behavioral therapy/psychotherapy
Knubben *et al.* 2007 [29]	✓	
Craft *et al.* 2007 [21]	✓	✓
Mather *et al.* 2002 [20]	✓	
Blumenthal *et al.* 1999 [25]	✓	
Martinsen *et al.* 1989 [18]	✓	✓
Martinsen *et al.* 1985 [16]	✓	✓

Amélioration long terme Qol (Carta 2010)

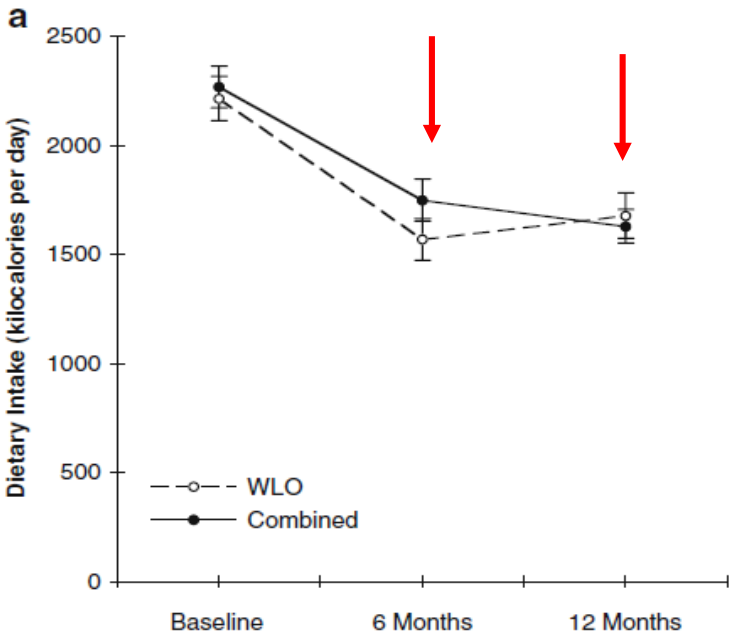
Amélioration sexualité perçue (Hoffman 2009)

Hoffman, B. M. (2010). Exercise and Pharmacotherapy in Patients With Major Depression: One-Year Follow-Up of the SMILE Study. *Psychosomatic Medicine*.

Partonen, T.. (1998). Randomized trial of physical exercise alone or combined with bright light on mood and health-related quality of life. *Psychological Medicine*, *28*(6), 1359-1364.

RCT, ♀ obèses+ dépression
Conseil nutritionnel+ Exercice non supervisé (WLO) **VS** Conseil nutritionnel + TCC
Résultats: ⇘ Poids + dépression à 6 et 12 mois pour les 2 gp

(Linde 2011)



RCT, ♀>60 ans, surpoids ou obèse, Niveau modéré à élevé de dépression
Pr: 3X/sem, 50 min marche, 6 mois
Résultats: ⇘ IMC, Anxiété, Dépression fin prog

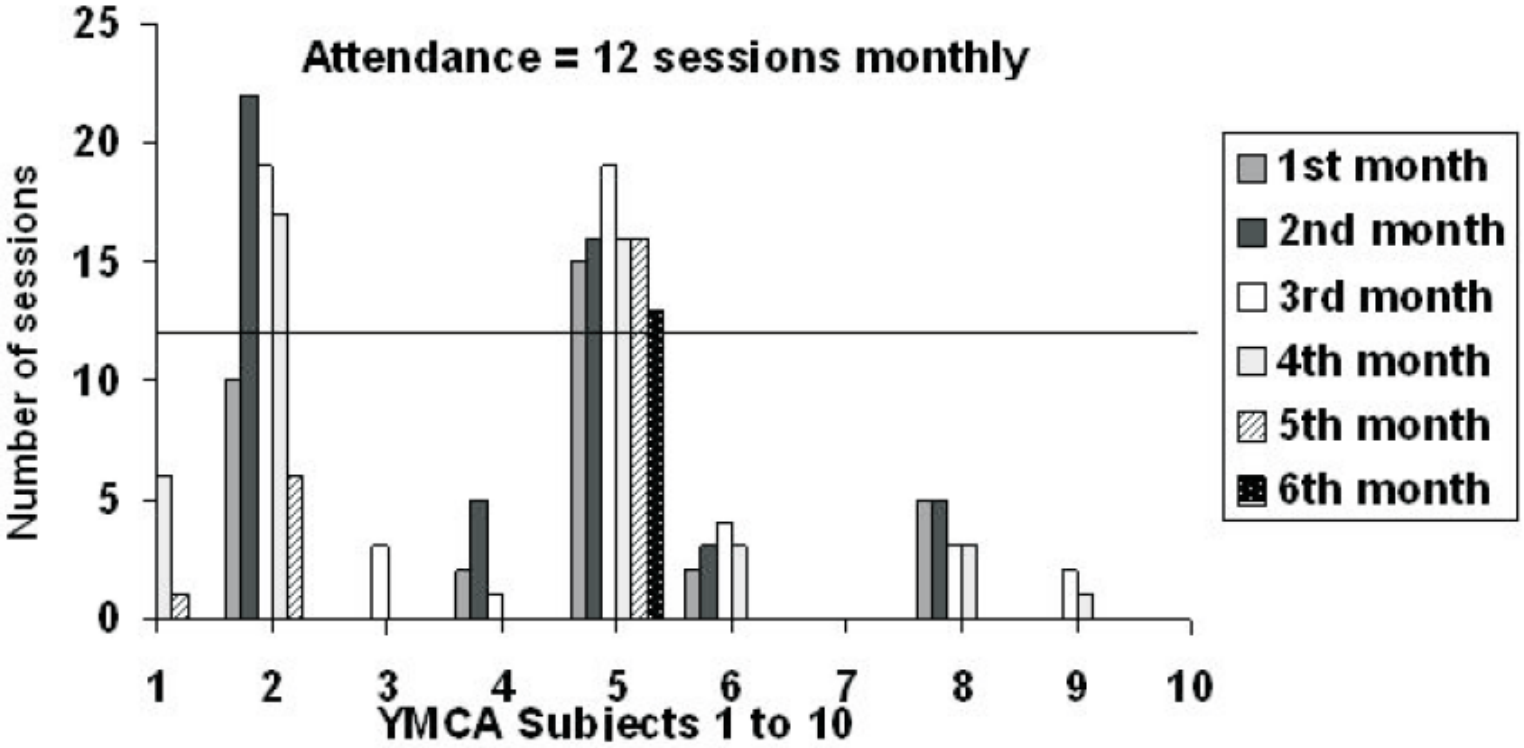
(Gusi 2008)

Schneider, K. L., (2011). Design and methods for a pilot randomized clinical trial involving exercise and behavioral activation to treat comorbid type 2 diabetes and major depressive disorder. Mental Health and Physical Activity, 4(1).
Linde, (2011). A RCT of behavioral weight loss treatment versus combined weight loss/depression treatment among women with comorbid obesity and depression. *Annals of Behavioral Medicine*
Gusi, N., (2008). Cost-utility of a walking programme for moderately depressed, obese, or overweight elderly women in primary care: RCT. BMC Public Health, 8, 231.

Il suffirait donc de demander aux patients de bouger plus ?

Ou d’ouvrir une salle de sport à côté du service ?

Réponse : **NON**



Taux d'abandon de la pratique est de 40% à 4 mois, 70% à 5 mois et 90% à 6 mois, contre 50% à 6 mois en population générale (Gould, 1998).

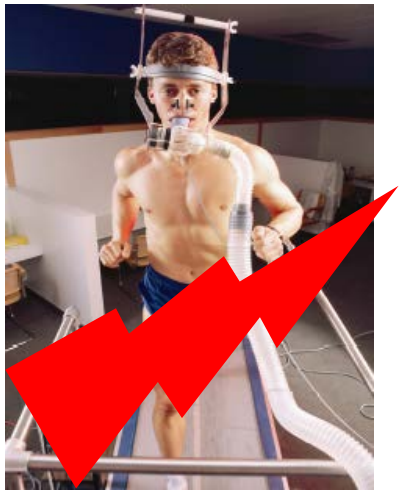
« To motivate participants, different rewards were offered, such as toilet paper, soap, and sugar-free drinks. » WU 2007

Archie, S., Wilson, J. H., Osborne, S., Hobbs, H., & McNiven, J. (2003). Pilot study: access to fitness facility and exercise levels in olanzapine-treated patients. *Canadian Journal of Psychiatry*, *48*(9), 628–632.

Comment mettre en place les recommandations EBM auprès des patients ?

Littérature scientifique + approche motivationnelle + individualisation =

Activités physiques Adaptées



AP déclarée comme la plus facilement accessible est la **MARCHE**,
72% reconnaissent que l'AP est bénéfique pour leur santé mentale,
58% et 63% déclarent qu'ils pourraient faire plus d'AP s'ils étaient accompagnés d'un spécialiste ou s'ils disposaient de conseils d'un médecin (Ussher, 2007) (n=120)

Approche motivationnelle

Walk, Address sensations, Learn about exercise, Cue exercise behavior (WALC)

(Beebe, 2010) (n=97)

Transthéorique de Prochaska pour augmenter l'adhésion des sujets schizophrènes à des programmes d'AP

(Gorczynski, 2010)

Table 2. Activities and Materials for the WALC-S

Week	Activities and Materials
One	Introductions of research staff and group members
	Review section of booklet on basics of exercising safely
	Perform stretches: Poster with photograph of each stretch, demonstration by research staff and return demonstration by group members
Two	Introductions and Check-in with each member
	Review section of booklet on basics of exercising safely
	Review section of booklet on exercise benefits
	Perform stretches: Poster with photograph of each stretch, demonstration by research staff and return demonstration by group members
Three	Introductions and Check-in with each member
	Review section of booklet on basics of exercising safely
	Review section of booklet on exercise benefits
	Barriers and solutions: Discuss and write

Beebe, L. H., et al. (2010). Effect of a Motivational Intervention on Exercise Behavior in Persons with Schizophrenia Spectrum Disorders. *Community Mental Health Journal*.
Gorczynski, P. (2010). *Psychiatric Rehabilitation Journal*, *34*(1), 61–64.
Ussher (2007). Physical Activity Preferences and Perceived Barriers to Activity Among Persons With Severe Mental Illness in the United Kingdom. *Psychiatr Serv*, *58*(3), 405-408.

Individualisation effort

L'attention qui doit être portée aux atteintes secondaires liées à la schizophrénie lors de proposition d'AP (Hamera 2010).

Classes d'antipsychotiques entraînent des allongements des intervalles QT et PR et une dépression du segment ST (Cury 2002)

Or dans le cadre d'une passation d'épreuve d'effort à un sujet traité avec un ou plusieurs types d'antipsychotiques, un sous décalage ST pourrait entrainer des arythmies ventriculaires, voir les torsades de pointes.

Il apparaît alors essentiel d'être extrêmement prudent lors de ce type d'épreuve.

Peu d'études ont exploré cette problématique, Johnson et al. (1982) ont montré qu'un test d'effort n'entrainait pas de complications chez les sujets étudiés.

Hamera E. Safety considerations when promoting exercise in individuals with serious mental illness. Psychiatry Res 2010 juin 30;178(1):220-222.
Gury C, .Risk of QT prolongated and torsade de pointes induced by antipsychotics. Drugs 2002;21(1):47-55.
Johnson RE, et al. Response to exercise in patients taking psychotropic drugs. Arrhythmias and the QT interval (QT wave peak). Arch. Intern. Med 1982 ;142(4):755-759.

Autres populations

Symptômes de sevrage, arrêt du tabac et activité physique.

(Cochrane, Ussher 2008)

Effets + craving et dépression dépendance alcool, cocaïne

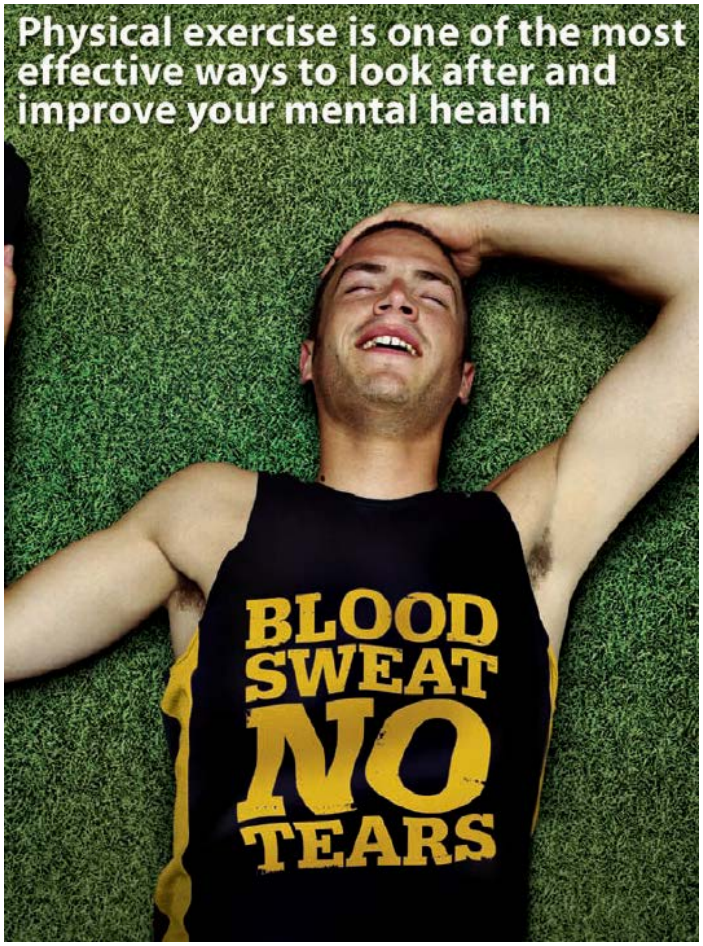
(Ussher 2004; Smith 2008)

Etude exploratoire échantillon TOC, bipolaires

(Brown, 2007;Wright 2009)

Prévention dépression post-partum

(Daley 2009)



Wright KA,. The effects of physical activity on physical and mental health among individuals with bipolar disorder: A systematic review. Ment Health Phys Act 2009;2(2):86-94.
Ussher, M., Sampuran, A. K., Doshi, R., West, R., & Drummond, D. C. (2004). Acute effect of a brief bout of exercise on alcohol urges. *Addiction*

Perspectives Recherche

RCT APA avec évaluation biopsychosociale à court et long terme

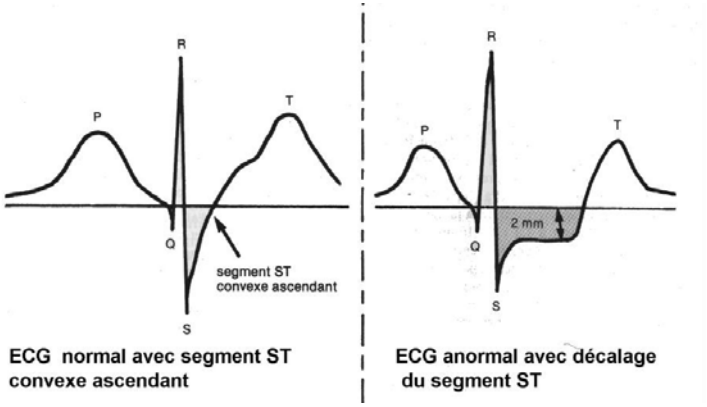
Mesurer l'AP des sujets inclus dans les futures cohortes

RCT couplage APA + antipsychotiques + TCC = effet synergie

Validation outils spécifiques

Effets sur troubles cognitifs, habiletés sociales

Décrire avec précision prg + taux adhésion



Perspectives Cliniques

Prise en charge pluridisciplinaire

Ouvrir équipes de soignants en psychiatrie aux professionnels des APA et diététiciens.

Faire connaitre l'existant.

Etablir conditions de sécurité

JAMA®
Online article and related content current as of October 20, 2010.

Using Pedometers to Increase Physical Activity and Improve Health: A Systematic Review

Dena M. Bravata; Crystal Smith-Spangler; Vandana Sundaram; et al.

JAMA. 2007;298(19):2296-2304 (doi:10.1001/jama.298.19.2296)

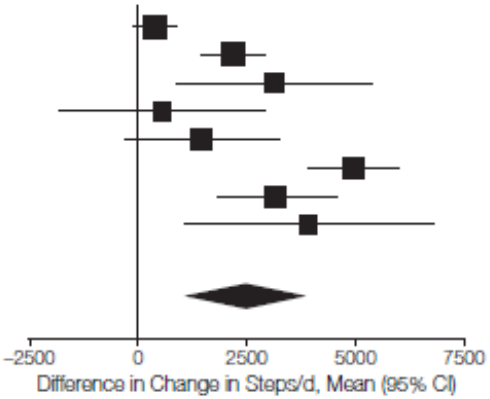
augmentation moyenne = 2491 pas / jour.

Travaux avec des adultes diabétiques, BPCO, cardiaques, obèses.

Le fait de distribuer cet outil et de fixer des objectifs à ces personnes entraine une augmentation de 27% des pas quotidiens.

Figure 2. Increase in Physical Activity Among Participants Randomly Assigned to Pedometer Interventions vs Control Participants

Source	Sample Size: Intervention	Sample Size: Control	Difference in Change in Steps/d, Mean (95% CI)	*P* Value
Butler and Dwyer,[17] 2004	17	16	395 (–118 to 908)	.13
Hultquist et al,[19] 2005	31	27	2226 (1488 to 2964)	<.001
Araiza et al,[16] 2006	15	15	3189 (905 to 5473)	.006
de Blok et al,[18] 2006	8	8	567 (–1872 to 3006)	.65
Talbot et al,[23] 2003	17	17	1498 (–300 to 3296)	.10
Moreau et al,[20] 2001	15	9	5066 (4003 to 6129)	<.001
Izawa et al,[14] 2005	24	21	3254 (1851 to 4657)	<.001
Ransdell et al,[21] 2004 and Ormes et al,[22] 2005	28	9	3994 (1050 to 6938)	.008
Summary difference	155	122	2491 (1098 to 3885)	<.001



3000 pas en 30 minutes par jour, 5 jours par semaine Marshall (2009).

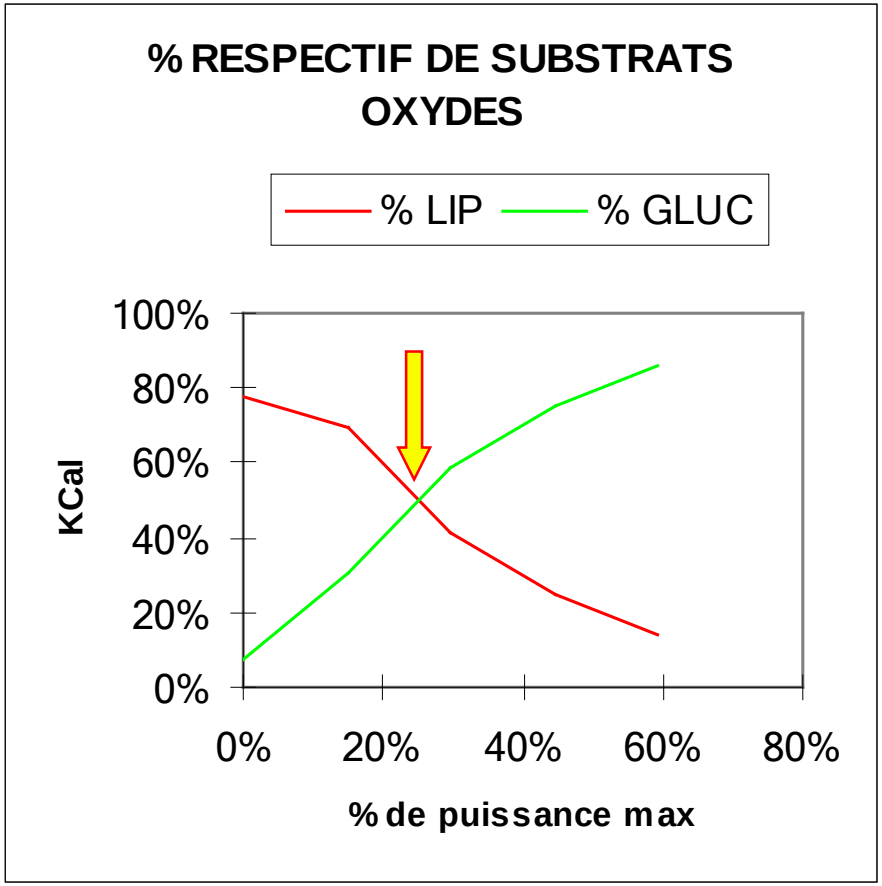
A titre d'exemple : 10000 à 11700 pour les adolescents en surpoids (Adams 2009) et 11000 à 12000 pour les adultes en surpoids (Tudor-Locke et al 2008)

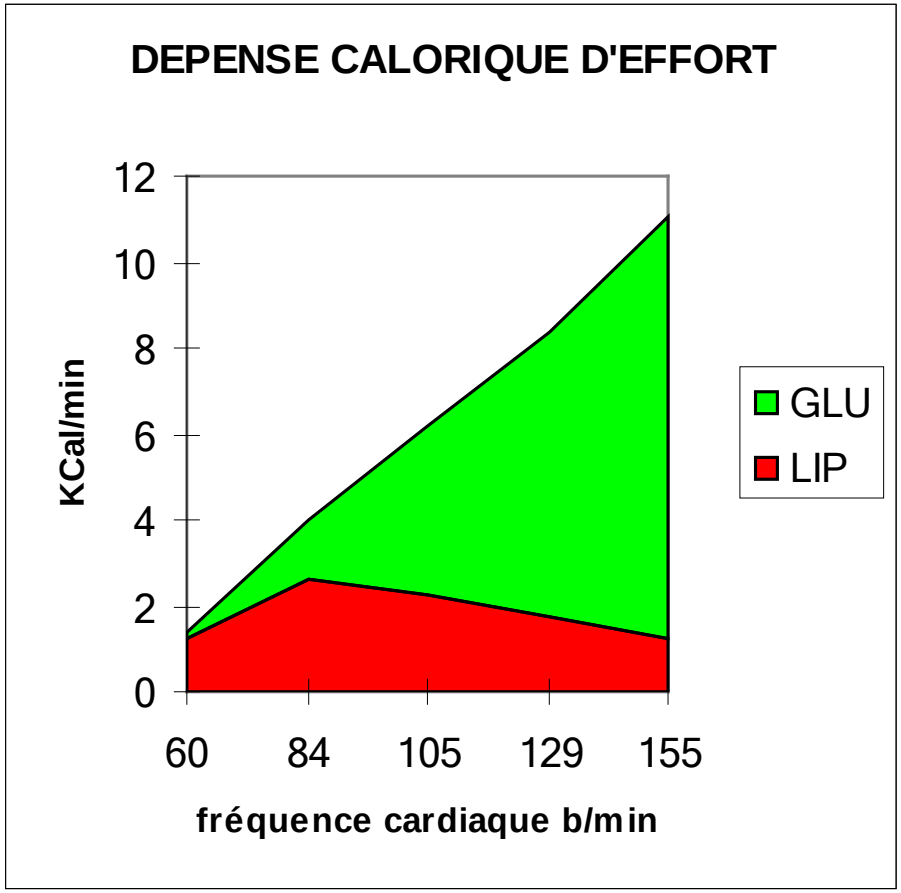
Tudor-Locke et al., "BMI-referenced cut points for pedometer-determined steps per day in adults," Journal of Physical Activity & Health 5 Suppl 1 (2008): S126-139

	conditioning		
4 Walk	▪Feedback ▪Self-monitoring	▪Explicit information provided to subjects about their behavior ▪Self measure of pleasure and breathlessness by VAS	-
5 Coun	▪Self-reevaluation ▪Helping relations ▪Self-liberation ▪Reinforcement management	▪Self measure attempts of smoking reduction ▪Discussion of problem-solving approach to adopt new behaviors ▪Identifying discrepancies between behavior and goals ▪Measure of CO level and feedback	Card “Solutions for testing new behaviors”

Bernard P, Esseul E, Raymond L, Dandonneau L, Xambo JJ, Ninot G. Counselling and exercise intervention for smoking reduction in patients with schizophrenia: a feasibility study. *Mental Health and Physical Activity* (en revision)

Substrats oxydés à l'effort "*crossover concept*" (Brooks et Mercier)





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Short communication

The acceptability of physical activity programming within a smoking cessation service for individuals with severe mental illness

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ScienceDirect

Smoking Cessation in Women With Severe Mental Illness: Exploring the Role of Exercise as an Adjunct Treatment

Kelly P. Arbour-Nicitopoulos, Guy E. Faulkner, Tony A. Cohn, and Peter Selby

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