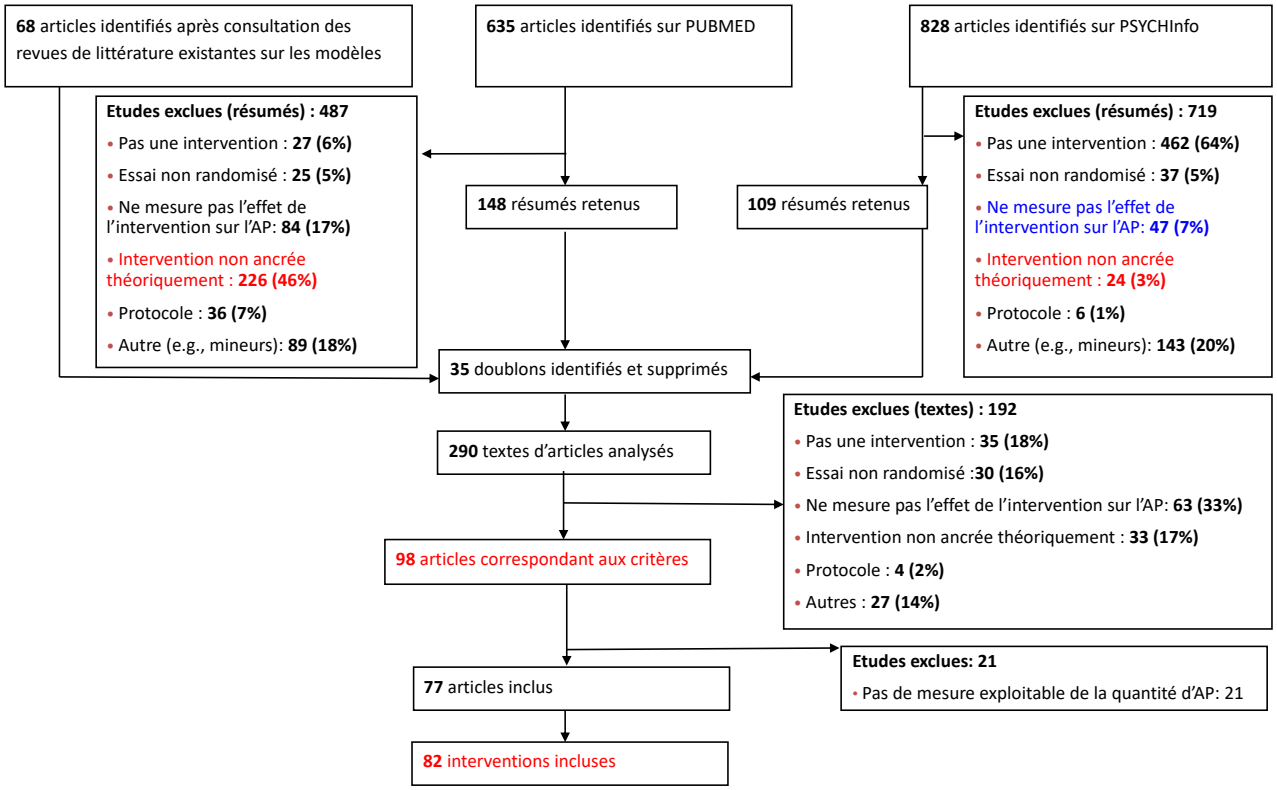
Comment réduire les risques de biais de sélection dans une revue systématique d'interventions comportementales en santé?

Pr. Gregory Ninot, PhD

Plateforme CEPS, Université of Montpellier

Montpellier Cancer Institute

Une de nos expériences en la matière



1 531 publications identifiées

6 MOIS
8 CHERCHEURS

77 articles inclus
82 études

Bernard P, Carayol M, Gourlan M, Boiché J, Romain AJ, Bortolon C, Lareyre O, Ninot G (2017). Moderators of Theory-Based Interventions to Promote Physical Activity in 77 Randomized Controlled Trials. *Health Education and Behavior*, 44(2), 227-35.

Plan de l'atelier

1. Présentation de la Plateforme CEPS
2. Introduction
3. Définitions
4. Objectifs et critères d'inclusion
5. Informations à recueillir
6. Recherche bibliographique

Prise de conscience des autorités de santé sur les enjeux des INM

*« • améliorer le **cadre économique et organisationnel** ;*

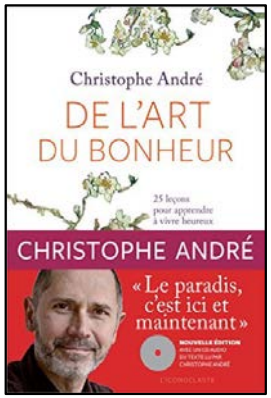
*• améliorer l'**information** des professionnels de santé et des patients sur les thérapeutiques non médicamenteuses ;*

*• améliorer l'adhésion des professionnels de santé aux **recommandations** sur les thérapeutiques non médicamenteuses ;*

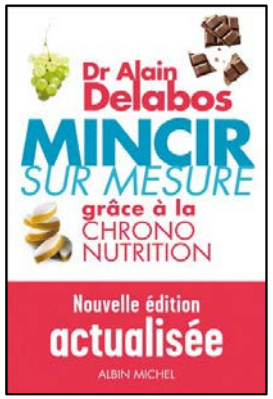
*• améliorer l'**accès à l'offre** en matière de thérapeutiques non médicamenteuses. »* (HAS, 2011, p. 52)

HAS (2011)

Les Interventions Non Médicamenteuses (INM) : une nébuleuse

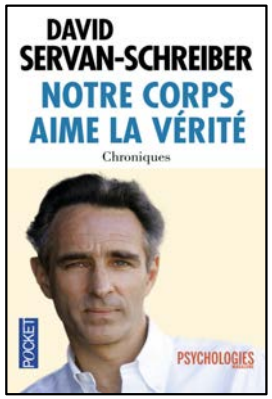


2011



2012

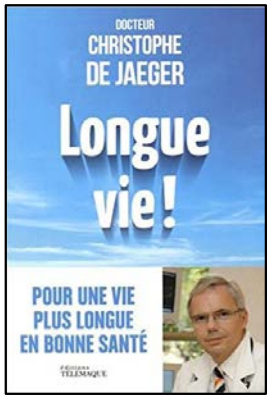
2013



2014

2015

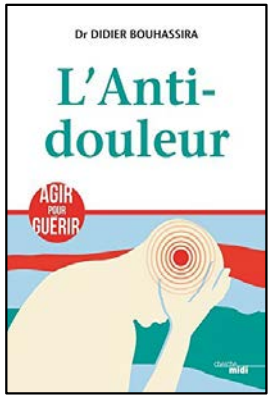
2015



2015

2016

2017

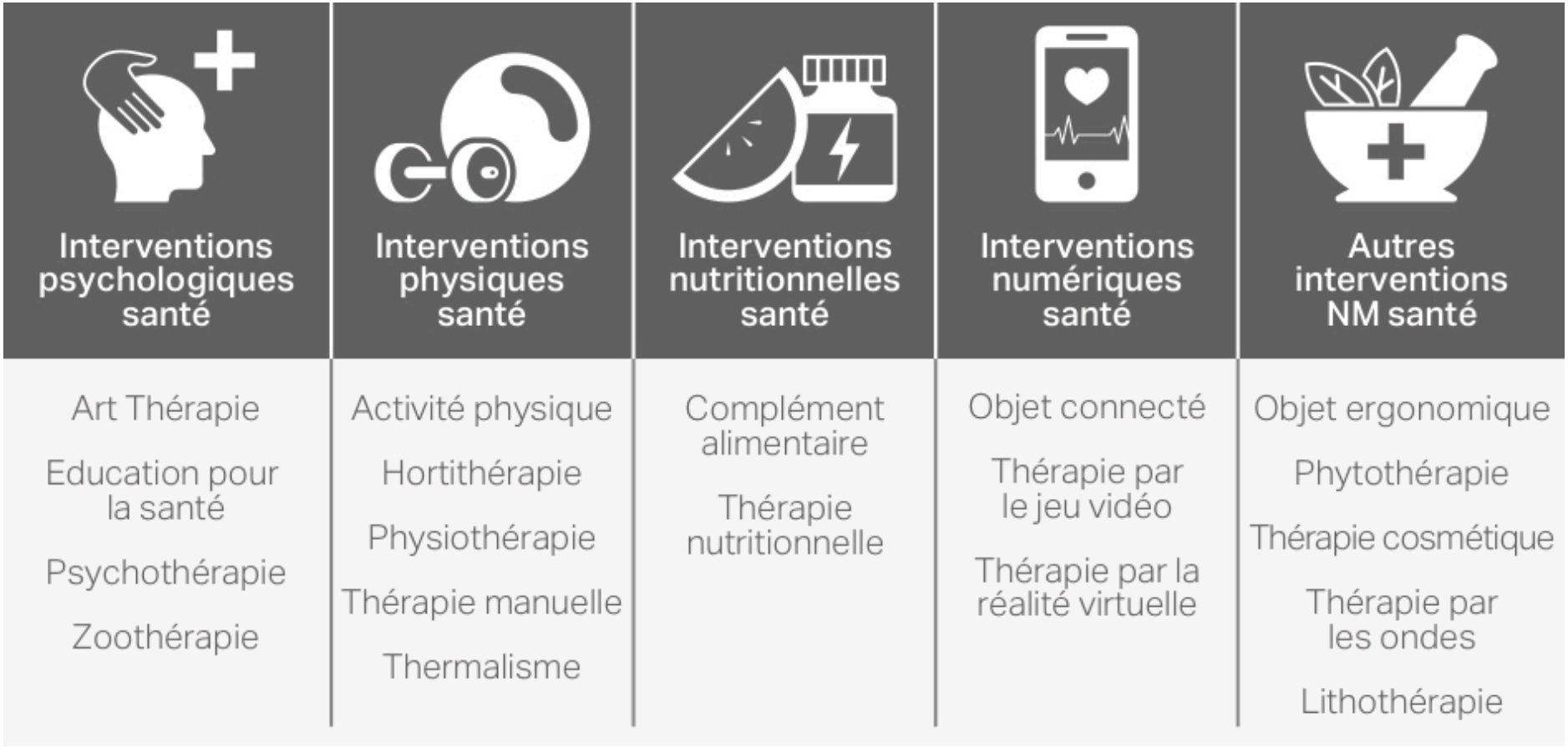


2018

2 personnes sur 3

- **199 milliard de US$ (2015**
- **+5% / an**

Les Interventions Non Médicamenteuses (INM)



Interventions psychologiques santé	Interventions physiques santé	Interventions nutritionnelles santé	Interventions numériques santé	Autres interventions NM santé
Art Thérapie	Activité physique	Complément alimentaire	Objet connecté	Objet ergonomique
Education pour la santé	Hortithérapie	Thérapie nutritionnelle	Thérapie par le jeu vidéo	Phytothérapie
Psychothérapie	Physiothérapie		Thérapie par la réalité virtuelle	Thérapie cosmétique
Zoothérapie	Thérapie manuelle			Thérapie par les ondes
	Thermalisme			Lithothérapie

Plateforme CEPS (2016)

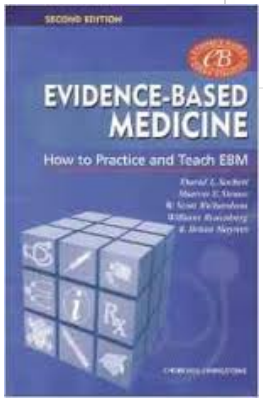
Les 6 missions de la Plateforme universitaire CEPS jusqu'en 2020

Un objectif opérationnel	Une solution
1. Rapprocher les acteurs de la recherche interventionnelle non médicamenteuse	**ICEPS Conference (depuis 2011)**
2. Recenser toutes les INM	**Ontologie des INM (depuis 2016)**
3. Faciliter la recherche bibliographique des études interventionnelles sur les INM	**Motrial (depuis 2018)**
4. Identifier les chercheurs et les unités de recherche évaluant des INM	**NIRI (en 2019)**
5. Encourager la réalisation d'études interventionnelles et de surveillance de qualité sur les INM	**NISHARE (en 2020)**
6. Promouvoir un paradigme d'évaluation et de surveillance des INM après les avoir recensés	**Paradigme INM (en 2020)**

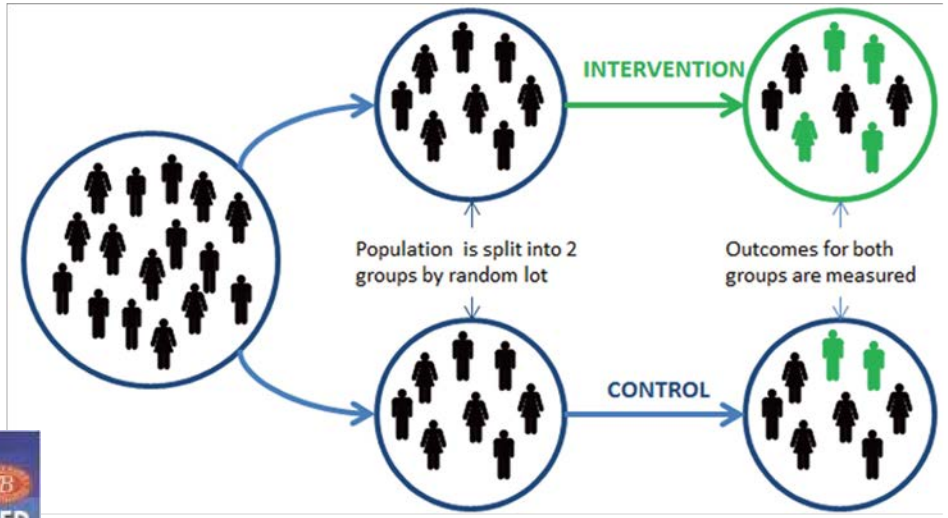
Pratiques professionnelles de santé fondées sur les preuves

David L. Sackett

McMaster University
Inspiring Innovation and Discovery

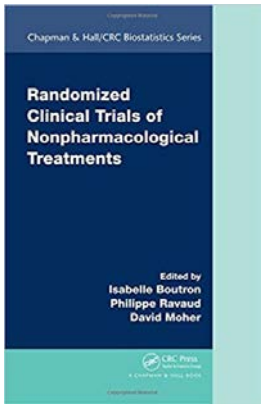


Sackett *et al.* (2000)



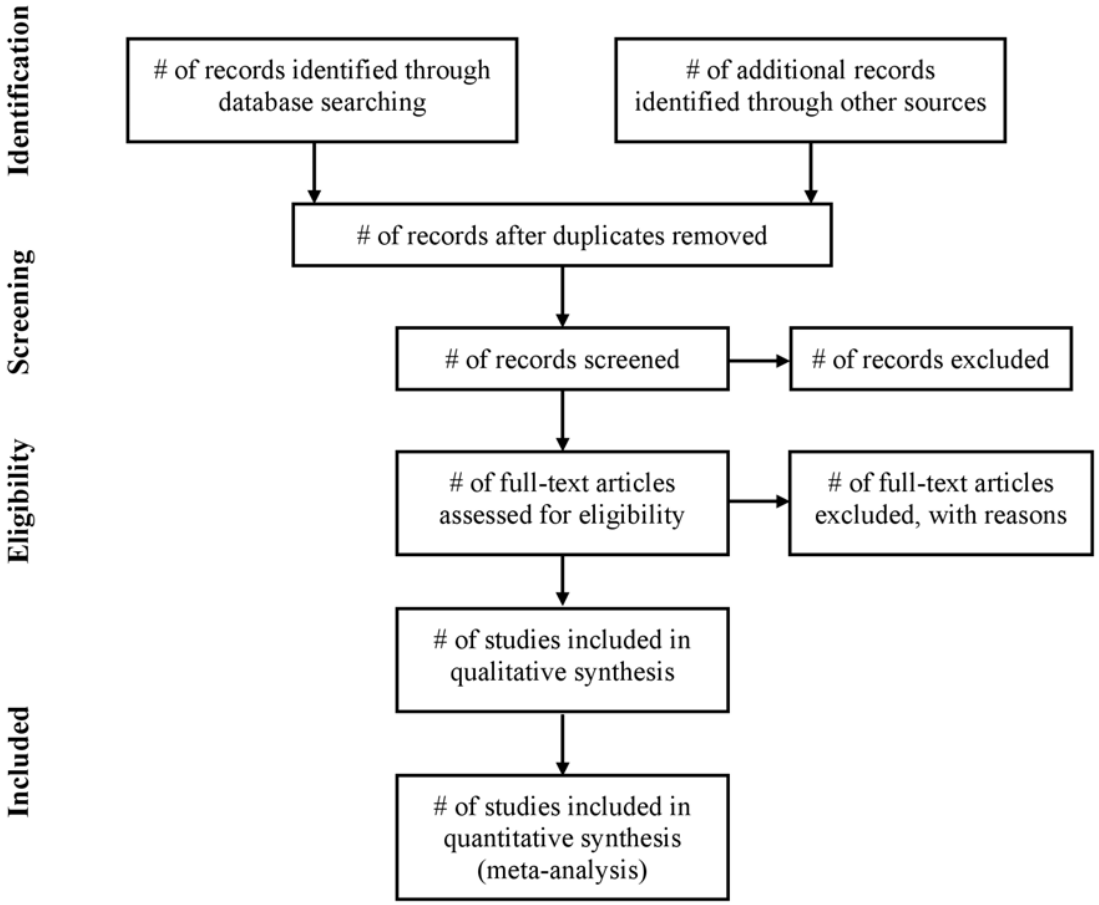
Essai clinique ou étude interventionnelle

Etudes interventionnelles
vs.
Etudes mécanistiques
Etudes observationnelles
Revues de questions



Boutron *et al.* (2008)

PRISMA



Explanation. The National Library of Medicine's MEDLINE database is one of the most comprehensive sources of health care information in the world. Like any database, however, its coverage is not complete and varies according to the field. Retrieval from any single database, even by an experienced searcher, may be imperfect, which is why detailed reporting is important within the systematic review.

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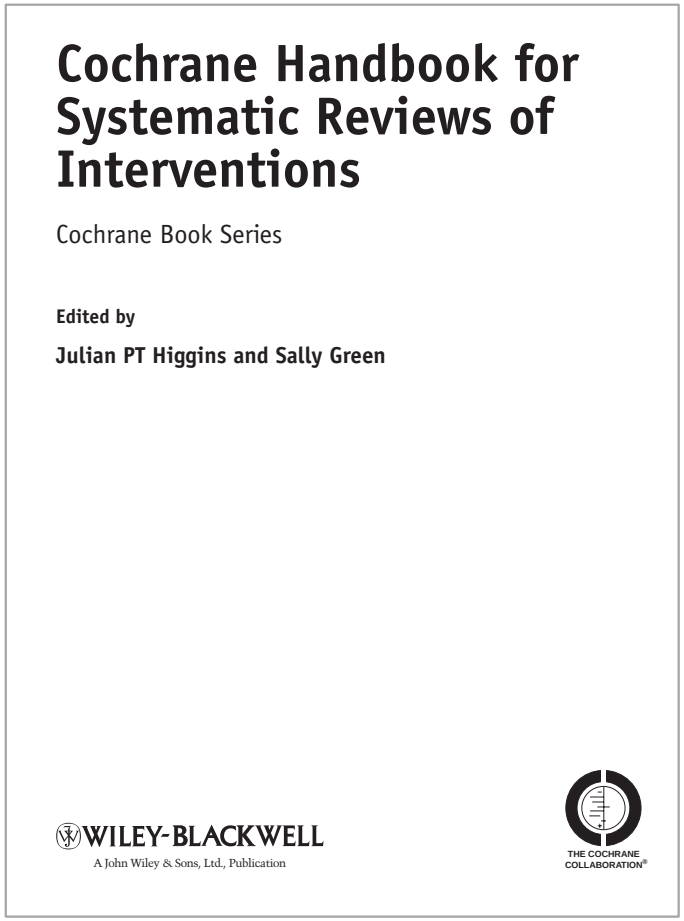
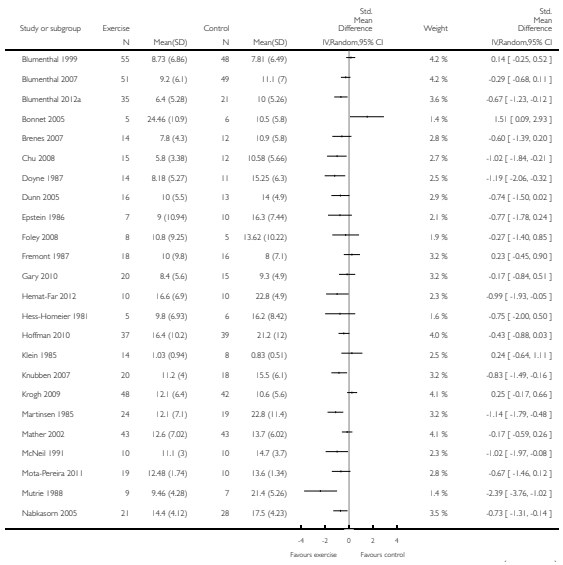
Liberati *et al.* (*PLOS Medicine,* 2009)

Méthodologies parfaites



Higgins et Green (2008)

Méthodologies parfaites



Study or subgroup	Exercise N	Mean(SD)	Control N	Mean(SD)	Std. Mean Difference IV,Random,95% CI	Weight	Std. Mean Difference IV,Random,95% CI
Orth 1979	3	7 (6.6)	2	16.5 (2.12)		0.6 %	-1.25 [-3.71, 1.21]
Pilu 2007	10	8.1 (5.2)	20	16.7 (9.1)		2.7 %	-1.04 [-1.85, -0.23]
Reuter 1984	9	5.1 (4.75)	9	18.56 (7.7)		1.8 %	-2.00 [-3.19, -0.82]
Schuch 2011	15	5.93 (4.46)	11	9.45 (3.56)		2.7 %	-0.83 [-1.65, -0.01]
Setaro 1985	25	62 (6.51)	25	69.88 (3.96)		3.3 %	-1.44 [-2.07, -0.81]
Shahidi 2011	20	11.1 (6.2)	20	15.2 (6.1)		3.3 %	-0.65 [-1.29, -0.02]
Sims 2009	23	15.13 (8.49)	22	20.62 (11.79)		3.4 %	-0.53 [-1.12, 0.07]
Singh 1997	17	9.8 (2.4)	15	13.8 (2)		2.6 %	-1.75 [-2.59, -0.92]
Singh 2005	18	8.5 (5.5)	19	14.4 (6)		3.1 %	-1.00 [-1.69, -0.31]
Veale 1992	36	13.94 (12.78)	29	17.79 (10.18)		3.8 %	-0.33 [-0.82, 0.17]
Williams 2008	17	8.37 (5.78)	12	11.75 (8.1)		2.9 %	-0.48 [-1.23, 0.27]
Total (95% CI)	**711**		**642**			**100.0 %**	**-0.62 [-0.81, -0.42]**

Heterogeneity: Tau² = 0.19; Chi² = 91.35, df = 34 (P<0.00001); I² =63%

Test for overall effect: Z = 6.22 (P < 0.00001)

Test for subgroup differences: Not applicable

-4 -2 0 2 4

Favours exercise Favours control

Exercice vs. contrôle

Symptômes dépressifs

35 RCT

1353 participants

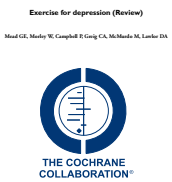
-0.62 {-0.81, -0,42}

Cooney *et al.* (2013, *Cochrane*)

Méthodologistes parfaits

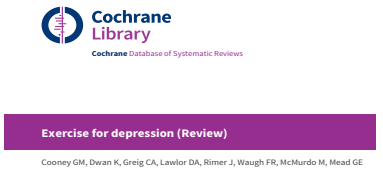
Exercise to reduce depression symptoms post-treatment

-0.82	**-0.62**	**-0.18**
(95% CI -1.12 to -0.51)	(95% CI -0.81 to -0.42)	(95% CI -0.47 to 0.11)
28 RCT (17 in the US)	35 RCT (22 in the US)	6 RCT+++ (6 in the US)
		Exercise vs. Control
		Allocation concealment, ITT, blinded outcome
907 participants	*1353 participants*	*464 participants*



Mead *et al.*
(2008, *Cochrane Reviews*)

Cooney *et al.*
(2013, *Cochrane Reviews*)



Cooney *et al.*
(2013, *Cochrane Reviews*)

Méthodologies perfectibles

OPEN ACCESS Freely available online

PLOS | MEDICINE

Essay

How to Make More Published Research True

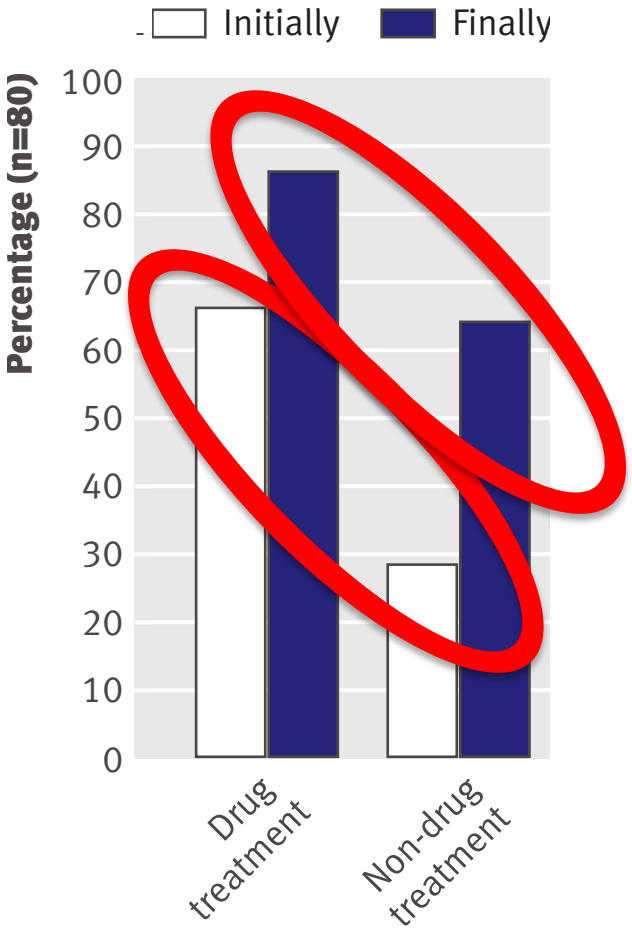
John P. A. Ioannidis[1,2,3,4]*

1 Meta-Research Innovation Center at Stanford (METRICS), Stanford University, Stanford, California, United States of America, **2** Department of Medicine, Stanford Prevention Research Center, Stanford, California, United States of America, **3** Department of Health Research and Policy, Stanford University School of Medicine, Stanford, California, United States of America, **4** Department of Statistics, Stanford University School of Humanities and Sciences, Stanford, California, United States of America

Adoption of more appropriate statistical methods [38], standardized definitions and analyses and more stringent thresholds for claiming discoveries or "successes" [39] may decrease false-positive rates in fields that have to-date been too lenient (like epidemiology [40], psychology [41,42], or economics [43]). It may lead them to higher credibility, more akin to that of fields that have traditionally been more rigorous in this regard, like the physical sciences [44].

Ioannidis (2014, *Plos Medicine*)

Méthodologies perfectibles

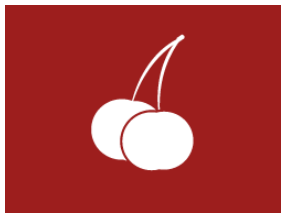


"Percentage of studies with sufficient description of treatment initially (based only on the published paper) and after supplementary information was obtained".

Glasziou *et al.* (2008, *British Medical Journal*)

Méthodologies perfectibles

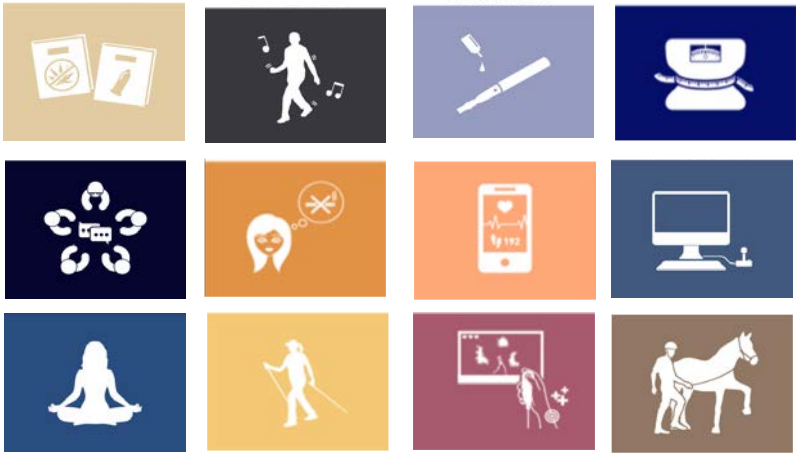
Consumer Goods and Services
Culture
Health promotion
Socialization



General Norms

DG CCRF

Interventions Comportementales #INM



Quel modèle d'évaluation (CONSORT, ORBIT, MRC, EVOLVE, MOST, AGILE, PROCEED…)?

Biomedical Products and Services

Evidence of Efficacy and Safety + Approval

FDA

EUROPEAN MEDICINES AGENCY
SCIENCE MEDICINES HEALTH

Méthodologies perfectibles

PLOS | BIOLOGY

COMMUNITY PAGE

Meta-research: Evaluation and Improvement of Research Methods and Practices

John P. A. Ioannidis*, Daniele Fanelli, Debbie Drake Dunne, Steven N. Goodman

Meta-Research Innovation Center at Stanford (METRICS), Stanford University, Stanford, California, United States of America

* jioannid@stanford.edu

Ioannidis *et al.* (*PLOS Medicine,* 2015)

Méthodologies perfectibles

Meta-research area	Specific interests (nonexhaustive list)
Methods: "performing research"—study design, methods, statistics, research synthesis, collaboration, and ethics	Biases and questionable practices in conducting research, methods to reduce such biases, meta-analysis, research synthesis, integration of evidence, crossdesign synthesis, collaborative team science and consortia, research integrity and ethics
Reporting: "communicating research"—reporting standards, study registration, disclosing conflicts of interest, information to patients, public, and policy-makers	Biases and questionable practices in reporting, explaining, disseminating and popularizing research, conflicts of interest disclosure and management, study registration and other bias-prevention measures, and methods to monitor and reduce such issues
Reproducibility: "verifying research"—sharing data and methods, repeatability, replicability, reproducibility, and self-correction	Obstacles to sharing data and methods, replication studies, replicability and reproducibility of published research, methods to improve them, effectiveness of correction and self-correction of the literature, and methods to improve them
Evaluation: "evaluating research"—prepublication peer review, postpublication peer review, research funding criteria, and other means of evaluating scientific quality	Effectiveness, costs, and benefits of old and new approaches to peer review and other science assessment methods, and methods to improve them
Incentives: "rewarding research": promotion criteria, rewards, and penalties in research evaluation for individuals, teams, and institutions	Accuracy, effectiveness, costs, and benefits of old and new approaches to ranking and evaluating the performance, quality, value of research, individuals, teams, and institutions

Ioannidis *et al.* (*PLOS Medicine,* 2015)

Méthodologies perfectibles

Initiative	Area of work (website)
METHODS	
Cochrane Collaboration	Systematic reviews of health care (cochrane.org)
Campbell Collaboration	Systematic reviews of social science (campbellcollaboration.org)
James Lind Library	Evolution of fair tests of treatment (jameslindlibrary.org)
Society for Clinical Trials	Clinical trials (sctweb.org)
SRSM	Methods for research synthesis (srsm.org)
BioSharing	Standards for biology, natural, and life sciences (biosharing.org)
Human Proteome Project	Collaboration center for proteome (thehpp.org)
NCPRE	Research ethics (ethicscenter.csl.illinois.edu)
REPORTING	
ClinicalTrials.gov	Clinical trials registration (clinicaltrials.gov)
EQUATOR network	Reporting standards for research (equator-network.org)
Sense About Science	Communicating research in public (senseaboutscience.org)
Health News Reviews	Expert review of science news stories (healthnewsreview.org)
REPRODUCIBILITY	
Center for Open Science	Open science in psychology and more (centerforopenscience.org)
BITSS	Transparency in social sciences (bitss.org)
BPS	Best practices in social sciences (bps.stanford.edu)
Political Science Replication	Reproducibility in political science (politicalsciencereplication.com)
YODA	Sharing data from clinical research (yoda.yale.edu)
Neurovault	Data repository for PET and MRI maps (neurovault.org)
OpenfMRI	fMRI data repository (openfmri.org)
NIH repositories, examples:	
dbGAP	Raw data on genotype and phenotype (ncbi.nlm.nih.gov/gap)
GEO	Functional genomics repository (ncbi.nlm.nih.gov/geo)
Science Exchange	Reproducibility checks (validation.scienceexchange.com)
EVALUATION	
Peer Review Congress	Evidence on peer review (peerreviewcongress.org)
Center for Scientific Integrity	Tracking retractions of scientific articles (retractionwatch.com/the-center-for-scientific-integrity
PubMed Commons	Postpublication comments (ncbi.nlm.nih.gov/pubmedcommons)
ArXiv	Preprint article repository (arxiv.org)
ICMJE	Standards for journal publishing (icmje.org)
COPE	Journal publication ethics (publicationethics.org)
PubPeer	Peer comments on research (pubpeer.com)
PEERE	New models for peer review (www.peere.org)
INCENTIVES	
REWARD	Reducing waste and rewarding diligence in research (researchwaste.net)
AAAS	Science policy (aaas.org)
ICSU	International science policy (icsu.org)

Ioannidis *et al.* (*PLOS Medicine,* 2015)

Méthodologistes perfectibles

BMJ 2017;357:j2490 doi: 10.1136/bmj.j2490 (Published 2017 June 08)

RESEARCH

Evolution of poor reporting and inadequate methods over time in 20 920 randomised controlled trials included in Cochrane reviews: research on research study

Agnes Dechartres *associate professor*[1 4], Ludovic Trinquart *researcher*[1 4], Ignacio Atal *data scientist*[1 4], David Moher *senior scientist*[5], Kay Dickersin *professor*[6], Isabelle Boutron *professor*[1 4], Elodie Perrodeau *statistician*[1 3], Douglas G Altman *professor*[7], Philippe Ravaud *professor*[1 4 8]

Méthodologies(istes) en progrès constant

Networks

CONSORT
TRANSPARENT REPORTING of TRIALS

Annals of Internal Medicine RESEARCH AND REPORTING METHODS

CONSORT Statement for Randomized Trials of Nonpharmacologic Treatments: A 2017 Update and a CONSORT Extension for Nonpharmacologic Trial Abstracts

Isabelle Boutron, MD, PhD; Douglas G. Altman, DSc; David Moher, PhD; Kenneth F. Schulz, PhD, MBA; and Philippe Ravaud, MD, PhD, for the CONSORT NPT Group*

Boutron *et al.* (2017, *Annals of Internal Medicine*)

SPIRIT
Standard Protocol Items: Recommendations for Interventional Trials

TIDieR
Template for Intervention Description and Replication

ibtn
international
behavioural
trials network

equator
network

Agences

NICE National Institute for Health and Care Excellence

NIH

HAS
HAUTE AUTORITÉ DE SANTÉ

World Health Organization

3. Définitions

Etat de l'art = Revue de question = Revue narrative

Revue systématique > Méta-analyse

Transparence, justification de la décision, procéder étape par étape

4. Objectifs et critères d'inclusion

Question initiale

Quel est le niveau d'efficacité d'Interventions Comportementales fondées sur un Modèle Théorique de Changement de Comportement pour promouvoir l'AP à partir d'essais randomisés contrôlés?

Objectifs

(1) Identifier le(s) modèles sociocognitifs efficaces pour augmenter le niveau d'AP à court (post-intervention) et moyen terme (quelques mois après l'intervention)

(2) Explorer dans quelle mesure certains modérateurs (e.g., qualité de l'implémentation théorique) sont susceptibles d'expliquer les différences (ou absence de différences) d'efficacité entre les différents modèles théoriques

5. Informations à recueillir

Critères PICOS

P(opulation) = *Adulte (+18), sains et malades*

I(intervention) = *Interventions de promotion de l'AP sur un modèle théorique*

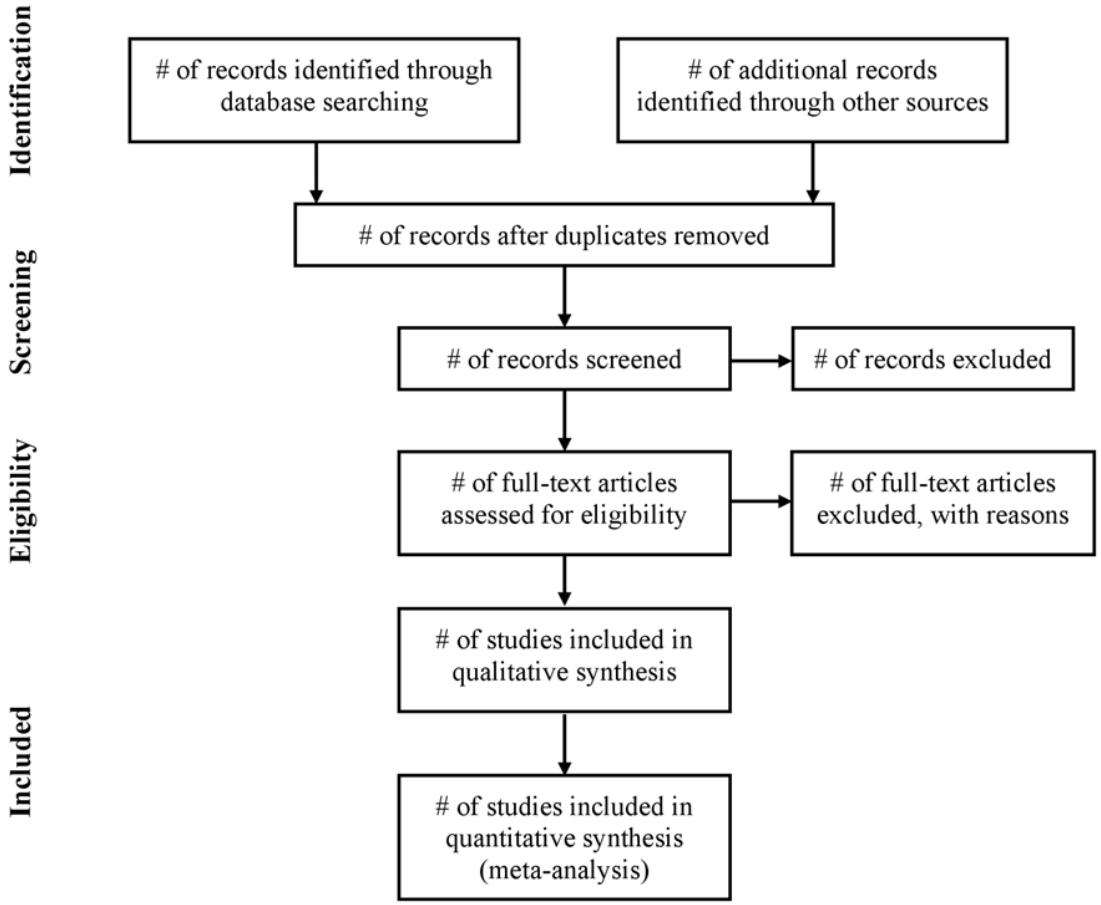
C(ontrol) = *Tout type de groupe contrôle*

O(outcomes) = *Mesure AP (déclarée ou objective)*

S(tudies) = *Essais randomisés contrôlés*

Liberati et al. (*Journal of Clinical Epidemiology*, 2009)

6. Recherche bibliographique



Explanation. The National Library of Medicine's MEDLINE database is one of the most comprehensive sources of health care information in the world. Like any database, however, its coverage is not complete and varies according to the field. Retrieval from any single database, even by an experienced searcher, may be imperfect, which is why detailed reporting is important within the systematic review.

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Liberati *et al.* (*PLOS Medicine,* 2009)

6. Recherche bibliographique

February 14, 2018

Updating the PRISMA reporting guideline for systematic reviews and meta-analyses: study protocol

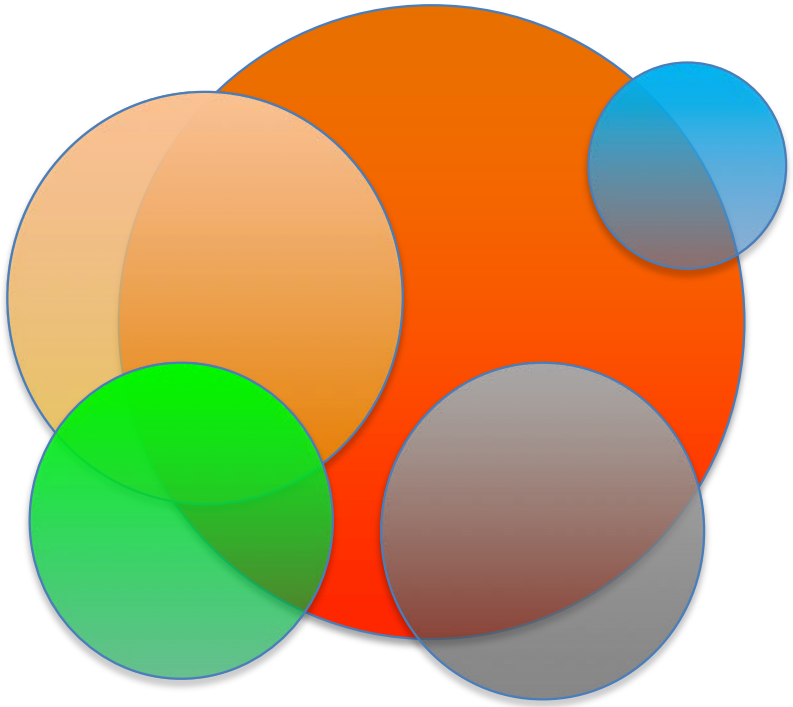
Matthew J Page[1], Joanne E McKenzie[1], Patrick M Bossuyt[2], Isabelle Boutron[3,4,5,6], Tammy Hoffmann[7], Cynthia D Mulrow[8], Larissa Shamseer[9], David Moher[10,11]

6. Recherche bibliographique avec

MOTRIAL

www.motrial.fr

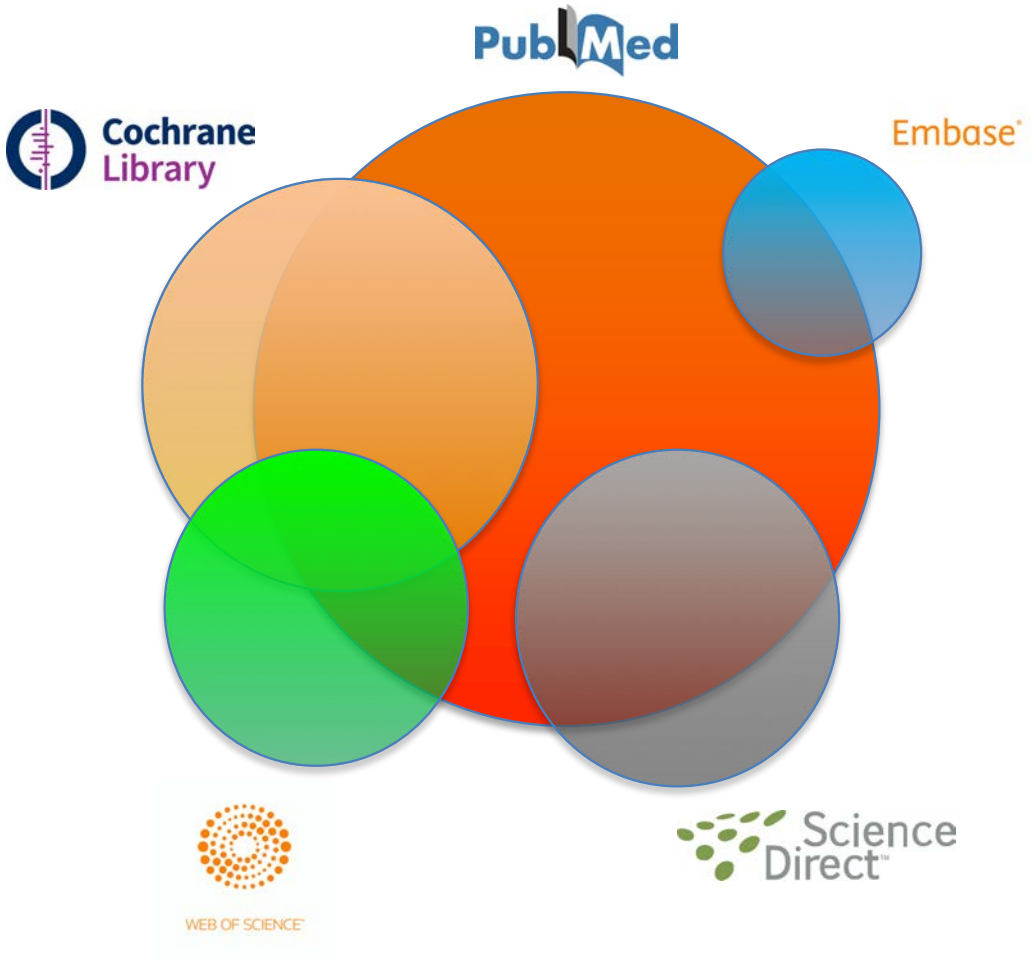
Bases de données des registres officiels d'études déclarées



Protocols Database

ANSM
Chinese Clinical Trial Registry (ChiCTR)
ClinicalTrials
Cochrane Central Register of Controlled Trials
European Clinical Trials Register (Europe)
International Clinical Trials Registry Platform (ICTRP) - WHO
ISRCTN registry (BioMed Central, ltd.)
UMIN Clinical Trials Registry (UMIN-CTR)

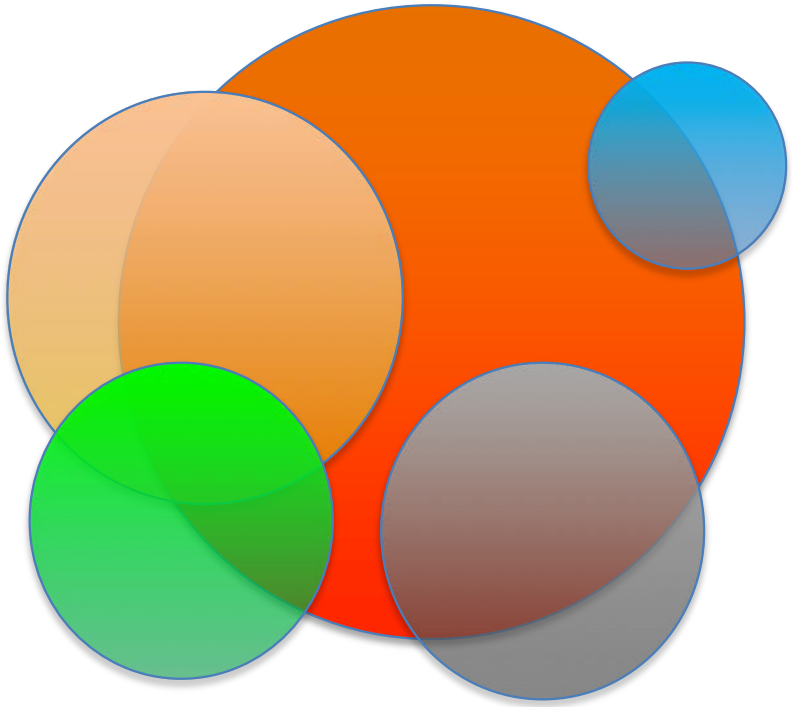
Bases de données des publications d'études interventionnelles



Results Database

AMED (Allied and Alternative Medicine Database)
CAIRN
CINAHL - Cumulative Index of Nursing and Allied Health Literature
Cochrane Library
EPPI-Centre
Literature in the Health Sciences in Latin America and the Caribbean
OVID
OT Seeker (Occupational Therapy Systematic Evaluation of Evidence)
PEDro (Physiotherapy Evidence Database)
PMC
ProQuest Dialog™
PsycINFO
PubMed
Science Direct
Scopus
SPORTDiscus
Web of Science

Bases de données des publications d'études interventionnelles



Results Japanese Database

JDMC

Results Chinese Database

CNKI
Chinese Biomedical Literature (CBM)
Chinese Medical Current Content (CMCC)
VIP
WANFANG (China Online Journals)

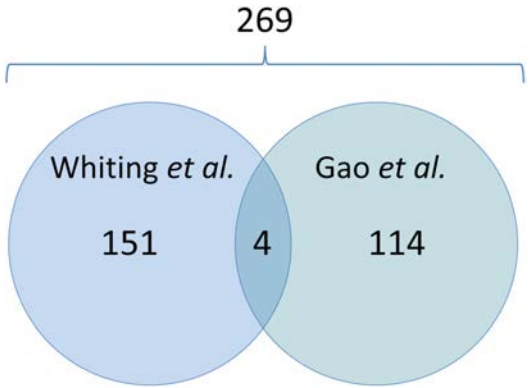
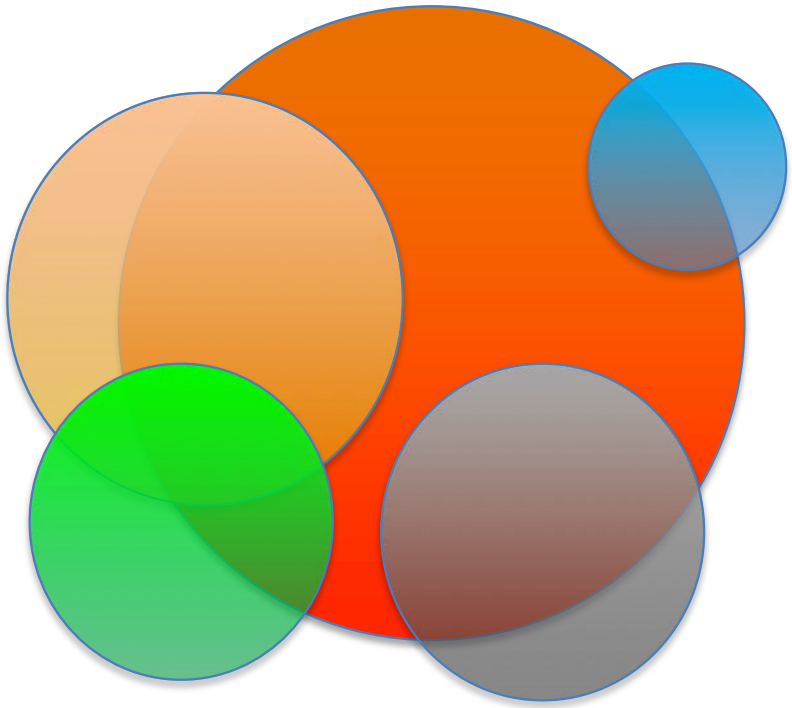


Figure 1 Number of studies included by each review and corresponding overlap.

Cohen et al. (2015, *Systematic Reviews*)

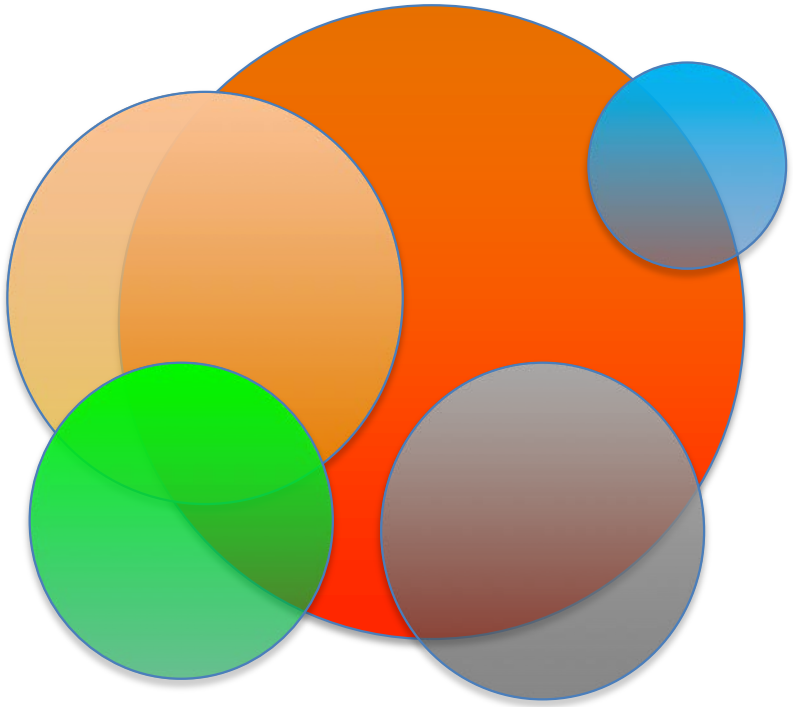
Bases de données des publications d'études interventionnelles



Results from Open Journals

Annals of Saudi Medicine
Bangladesh Journal of Pharmacology
Biomedical Imaging and Intervention Journal
BMC Health Services Research
BMC Medicine
BMJ Open
British Medical Journal
British Columbia Medical Journal
Canadian Medical Association Journal
Dermatology Online Journal
International Journal of Medical Sciences
Journal of Clinical Investigation
Journal of Postgraduate Medicine
The New England Journal of Medicine
Open Heart
Open Medicine
PLOS Medicine
PLOS Neglected Tropical Diseases
PLOS Pathogens
Scientia Pharmaceutica

Bases de données des publications d'études interventionnelles



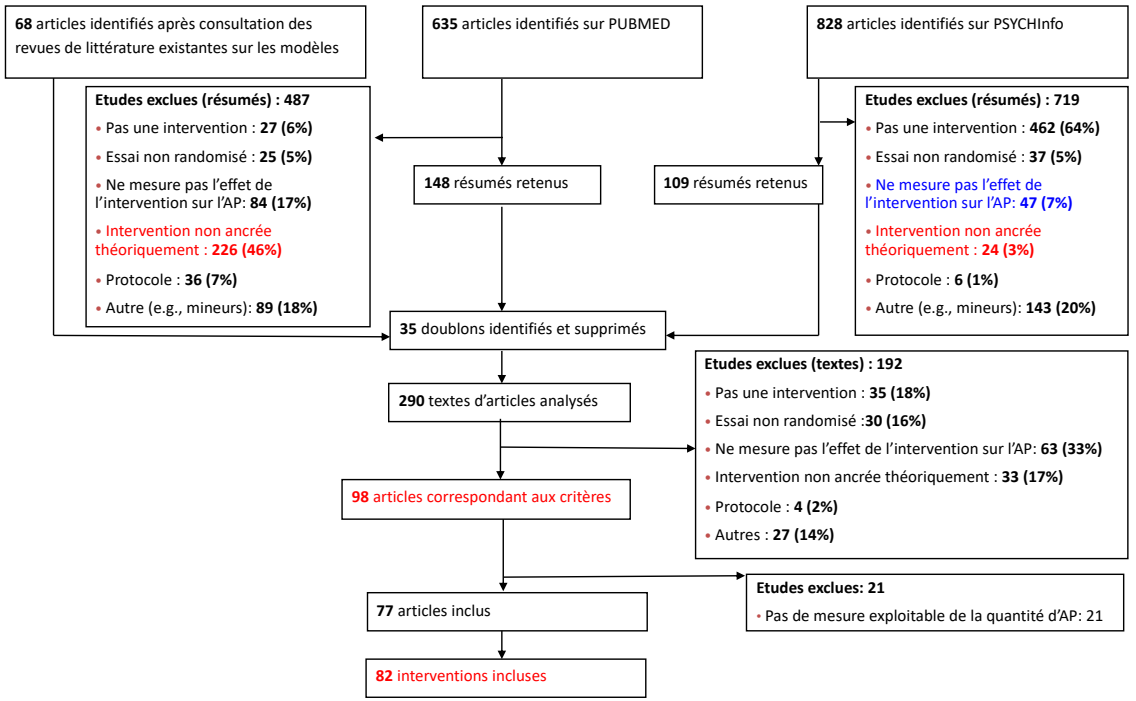
Other

ResearchGate

GoogleScholar

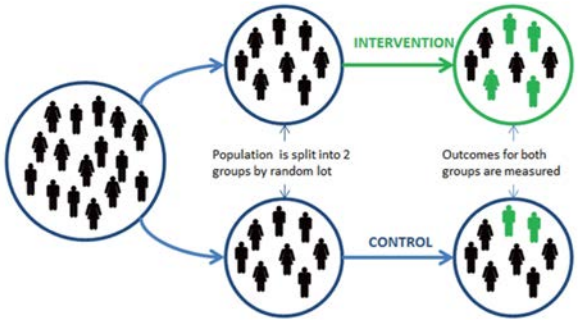
Objectif 1 : diminuer le temps de recherche bibliographique de 6 mois à 6 minutes

MOTRIAL



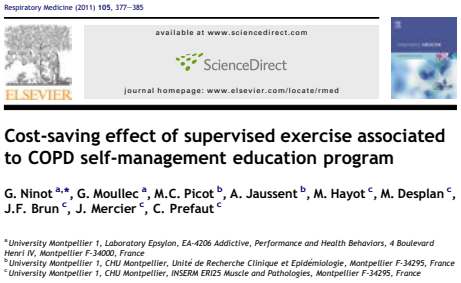
Objectif 2 : obtenir les informations pertinentes de chaque étude clinique sur une INM

MOTRIAL



Main publication

For example:
doi: 10.1016/j.rmed.2010.10.002
Ninot G, Moullec G, Picot MC, Jaussent A, Hayot M, Desplan M, Brun JF, Mercier J, Prefaut C. Cost-saving effect of supervised exercise associated to COPD self-management education program. Respir Med. 2011 Mar;105(3):377-85.


Respiratory Medicine (2011) 105, 377–385

available at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevier.com/locate/rmed

Cost-saving effect of supervised exercise associated to COPD self-management education program

G. Ninot [a,*], G. Moullec [a], M.C. Picot [b], A. Jaussent [b], M. Hayot [c], M. Desplan [c], J.F. Brun [c], J. Mercier [c], C. Prefaut [c]

[a] University Montpellier 1, Laboratory Epsylon, EA-4206 Addictive, Performance and Health Behaviors, 4 Boulevard Henri IV, Montpellier F-34000, France
[b] University Montpellier 1, CHU Montpellier, Unité de Recherche Clinique et Epidémiologie, Montpellier F-34295, France
[c] University Montpellier 1, CHU Montpellier, INSERM ERI25 Muscle and Pathologies, Montpellier F-34295, France

Other publications

Other results, for example:
doi: 10.1016/j.rm.2014.10.022
doi: 10.1016/med.2012.10.052
Follow-up, secondary analysis, qualitative…

Other data, for example:
Study protocol, erratum, experience report

Protocol declaration

For example:
NCT01167283
ClinicalTrials.gov Identifier

Ethical Committee

For example:
n°354903
CPP Sud Méditerranée

Sponsors

For example
Programme Hospitalier de Recherche Clinique (PHRC)
Etat français

Institution

For example:
CHU Montpellier
France

Objectif 3 : préciser les contenus des INM évaluées dans les études interventionnelles

MOTRIAL

Description d'une INM :

- Nom (et synonymes)
- Contenu (ingrédient, technique, geste)
- Dose (durée, fréquence, intensité)
- Modèle théorique explicatif
- Supervision (formation…)

NIH U.S. National Library of Medicine

ClinicalTrials.gov

Intervention Model: Parallel Assignment
Masking: None (Open Label)
Primary Purpose: Treatment
Official Title: Effectiveness of **Exercise** in the Treatment of Depression in Older People as an Alternative to Drugs Antidepressa
Actual Study Start Date : June 1, 2016
Estimated Primary Completion Date : June 1, 2018
Estimated Study Completion Date : December 31, 2018

Resource links provided by the National Library of Medicine NIH NLM

MedlinePlus related topics: Antidepressants Exercise and Physical Fitness

U.S. FDA Resources

Arms and Interventions

Arm	Intervention/treatment
Experimental: **Exercise**	Other: **Exercise** Other Name: Antidepressants
Active Comparator: Antidepressants	Other: **Exercise** Other Name: Antidepressants

Outcome Measures

Glossary

Study record managers: refer to the Data Element Definitions if submitting registration or results information.

Search for terms

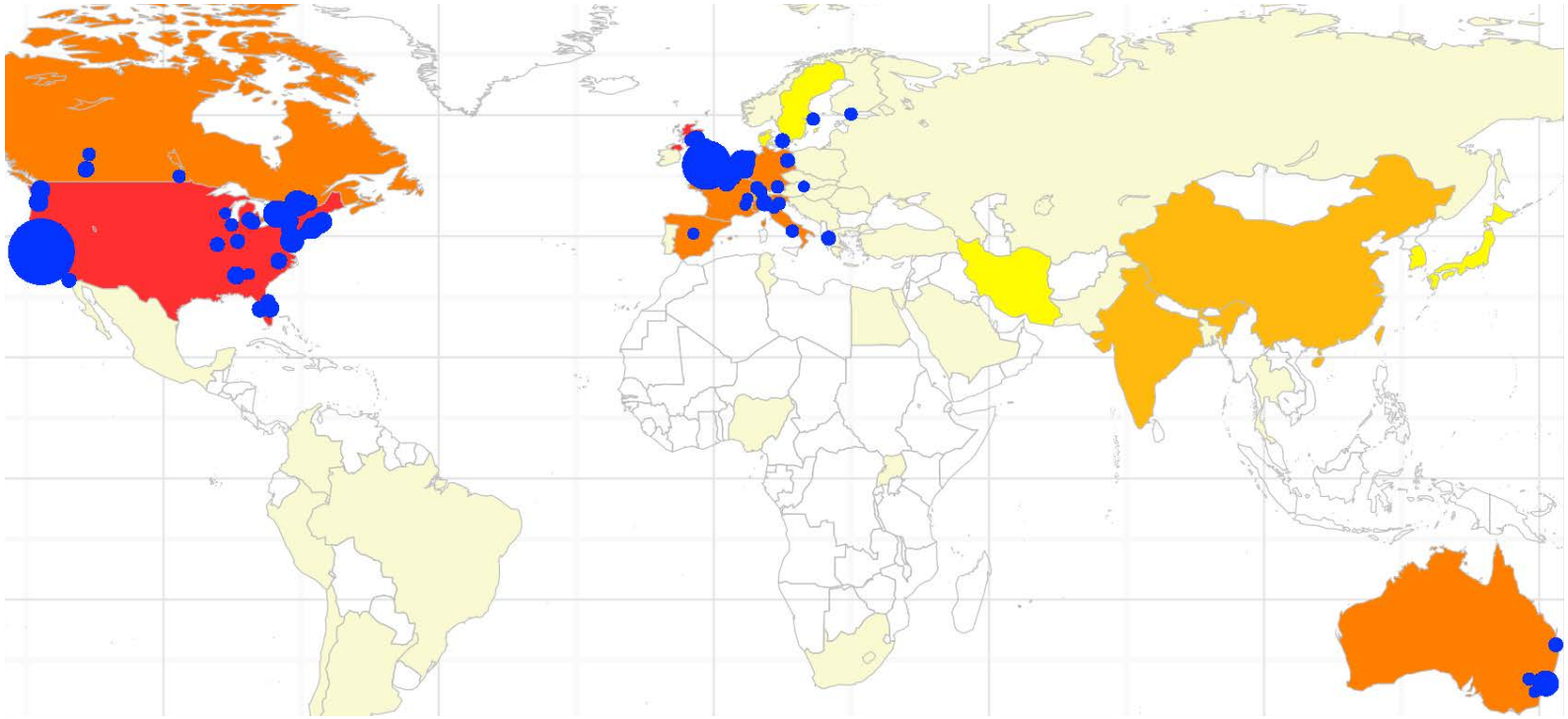
intervention/treatment

Intervention/treatment

A process or action that is the focus of a clinical study. Interventions include drugs, medical devices, procedures, vaccines, and other products that are either investigational or already available. Interventions can also include noninvasive approaches, such as education or modifying diet and exercise.

Objectif 4 : améliorer la justification d'une étude interventionnelle à mener

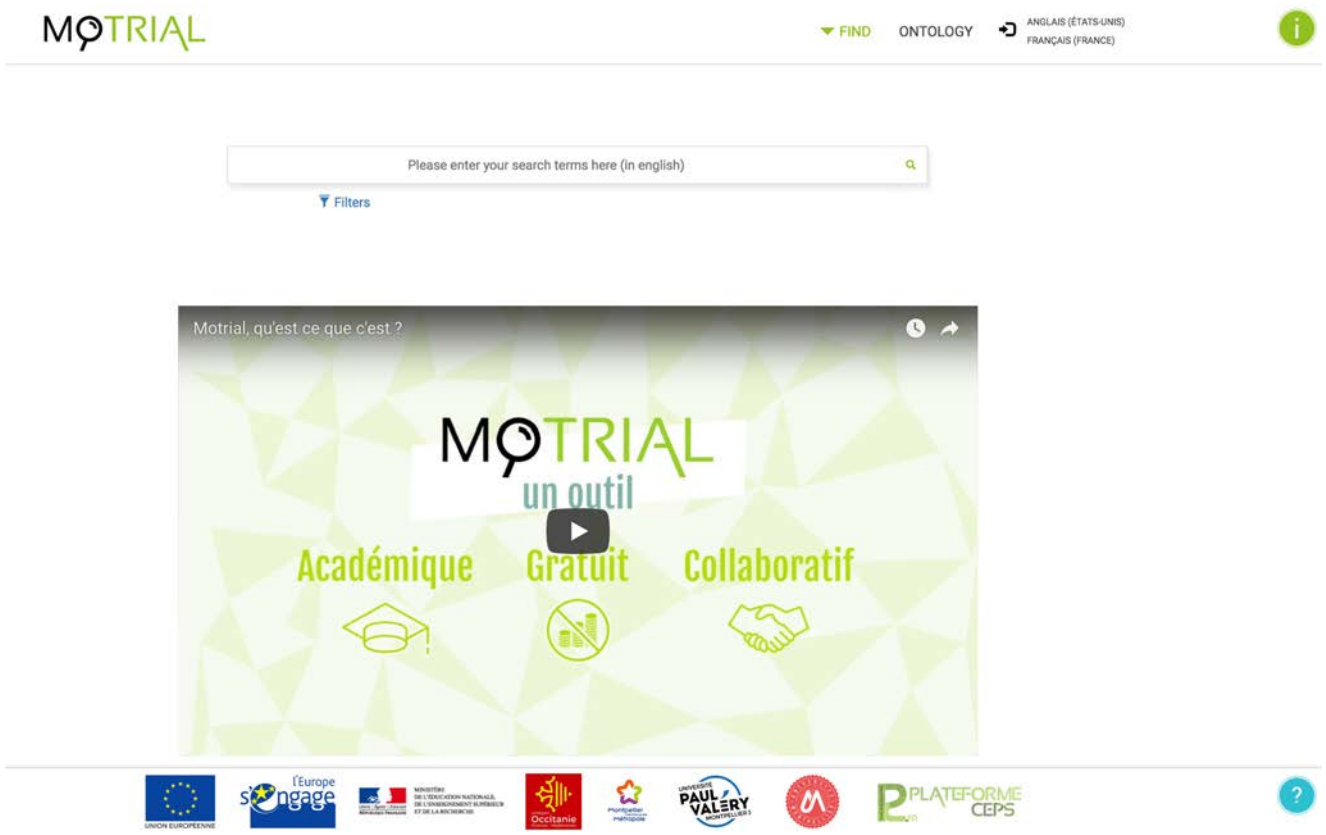
MOTRIAL



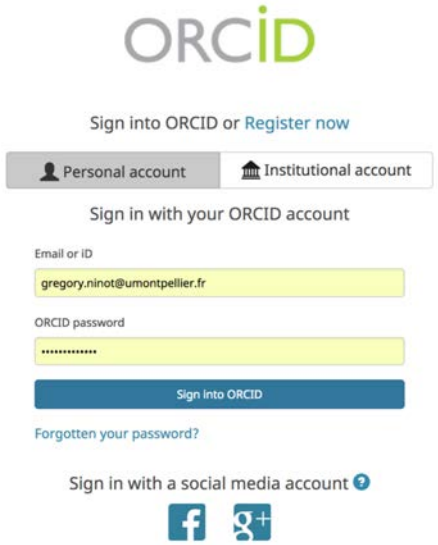
Ioannidis *et al.* (*PLOS Medicine,* 2015)

Accès à MOTRIAL via ORCID (*Connecting Research and Researchers*)

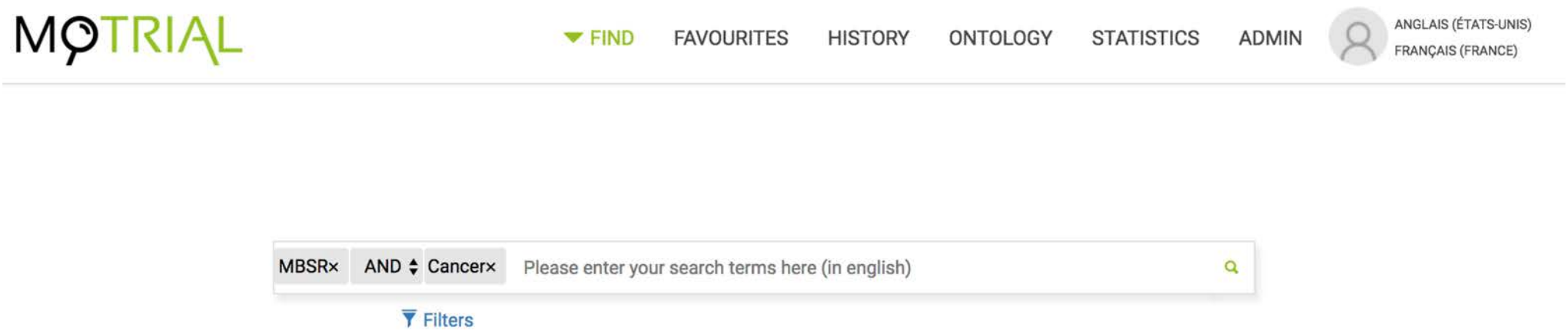
[www.motrial. fr](http://www.motrial.fr)



Registration to ORCID



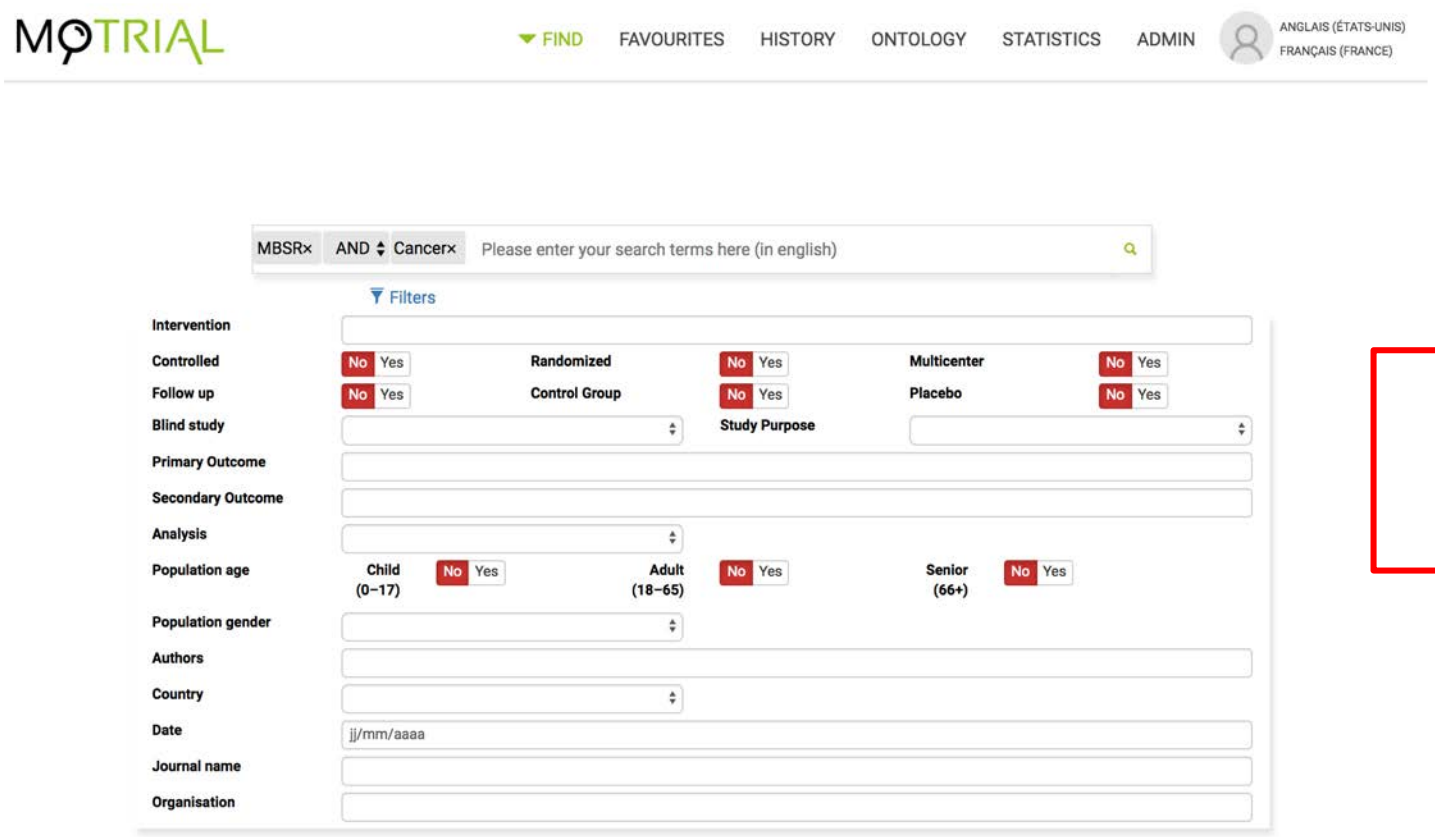
Mots clés



Provide key words

www.motrial. fr

Options méthodologiques



Select option (randomization for example)

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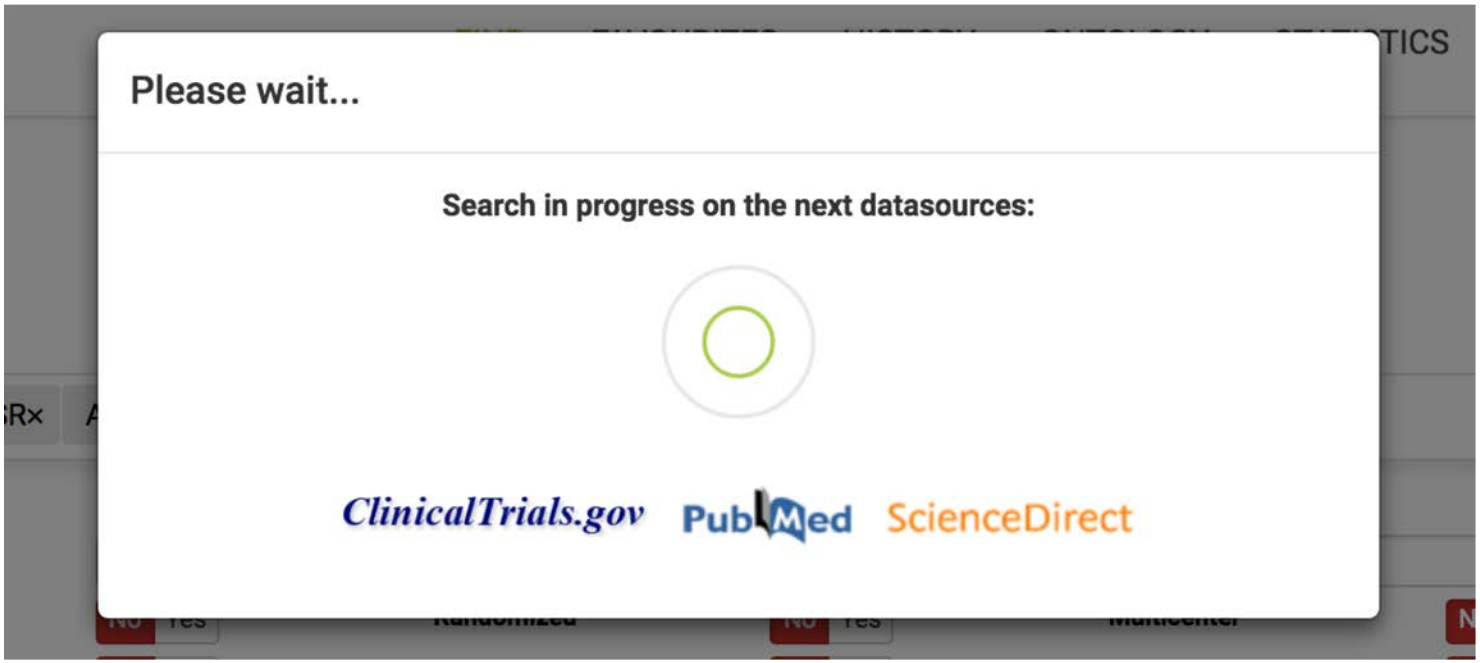
Recherche



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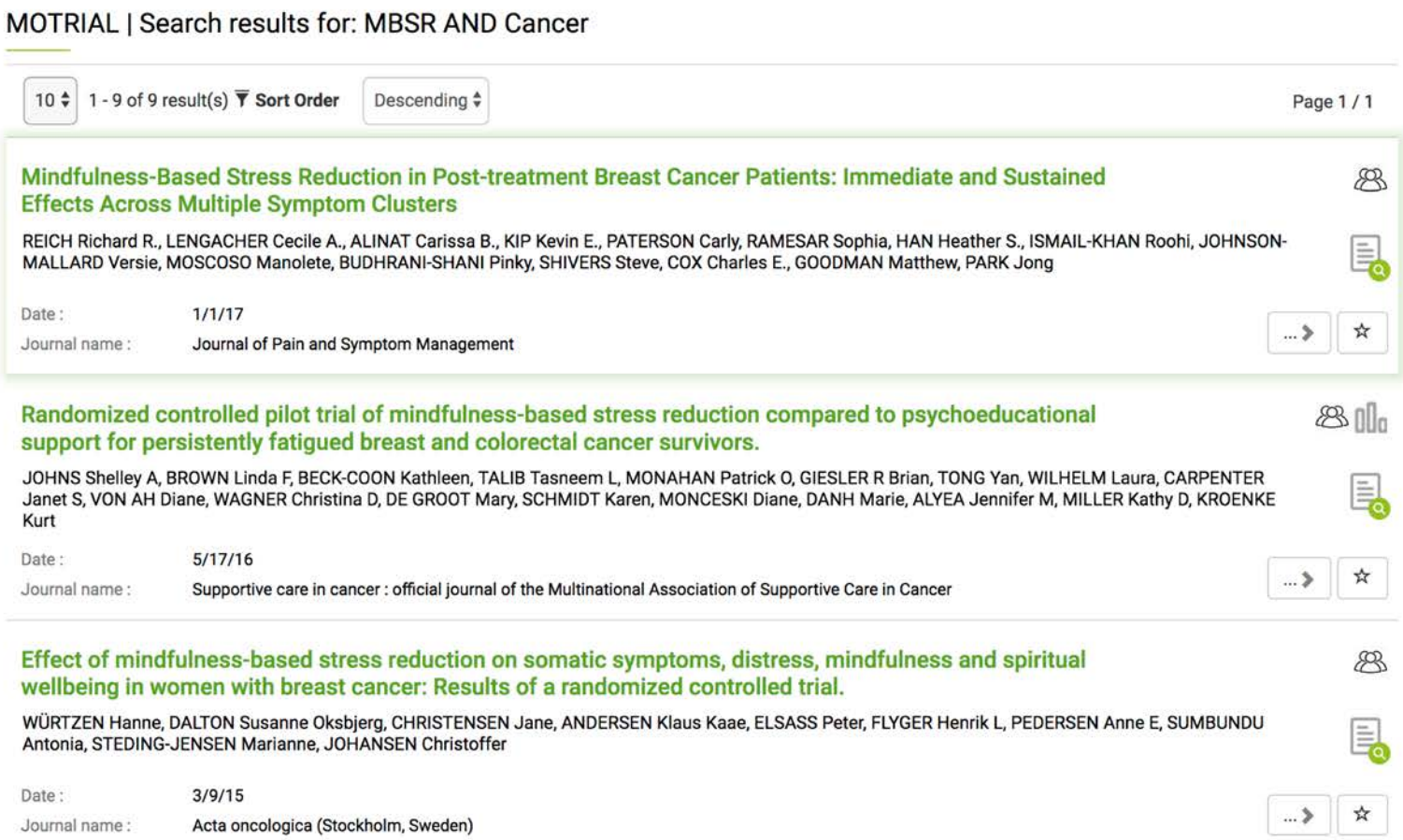
Résultat



Results

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Exemple d'un rapprochement automatique

Actions : MOTRIAL | Detailed view

☆ 🖶

← Results list

Publication:

Mindfulness-Based Stress Reduction in Post-treatment Breast Cancer Patients: Immediate and Sustained Effects Across Multiple Symptom Clusters

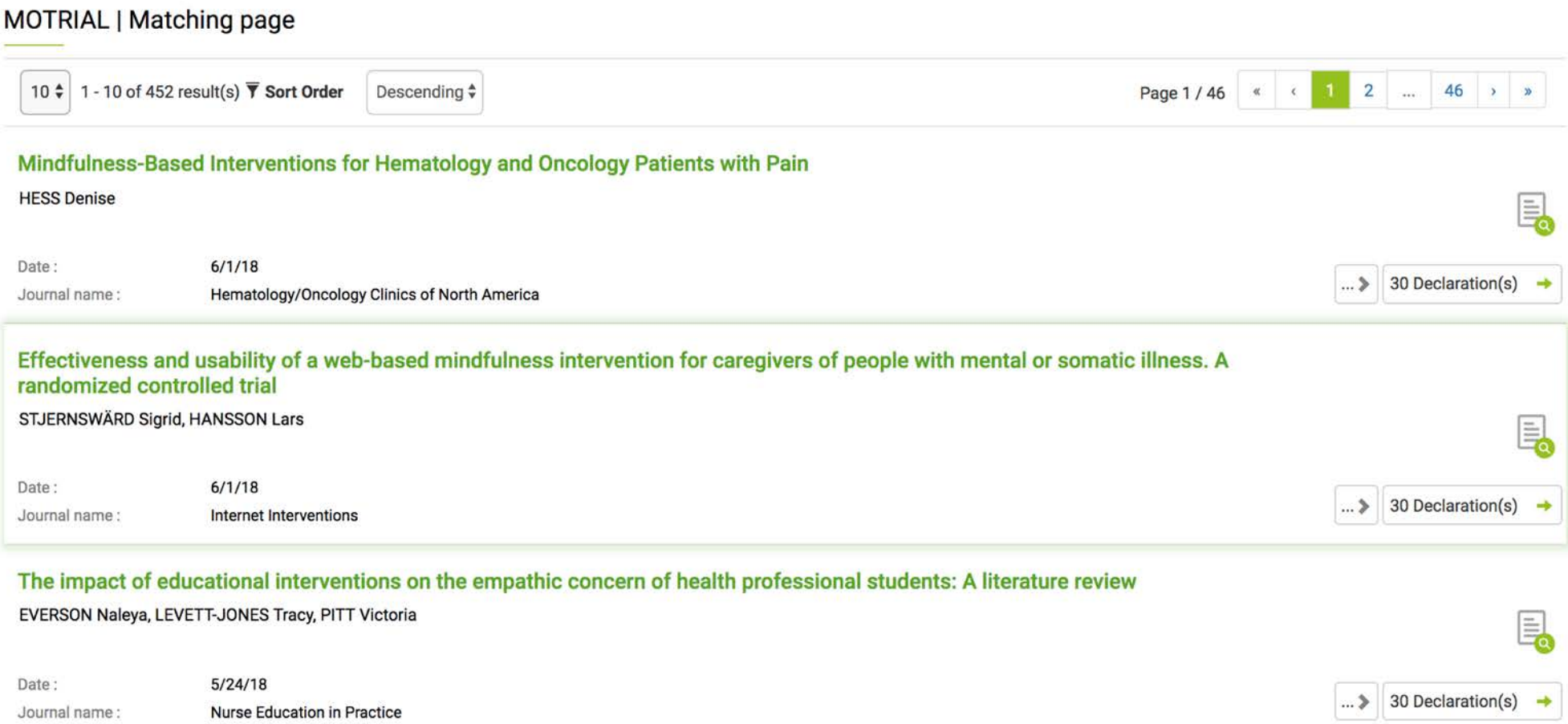
Abstract	Breast cancer survivors (BCS) face adverse physical and psychological symptoms, often co-occurring. Biologic and psychological factors may link symptoms within clusters, distinguishable by prevalence...		
Sponsor(s)	N/A	Country	N/A
Journal name	Journal of Pain and Symptom Management	Journal ISSN	08853924
Language	N/A	Date	1/1/17
DOI	Dx.doi.org/10.1016/j.jpainsymman.2016.08.005	ID	S0885392416303335
Authors	REICH Richard R., LENGACHER Cecile A., ALINAT Carissa B., KIP Kevin E., PATERSON Carly, RAMESAR Sophia, HAN Heather S., ISMAIL-KHAN Roohi, JOHNSON-MALLARD Versie, MOSCOSO Manolete, BUDHRANI-SHANI Pinky, SHIVERS Steve, COX Charles E., GOODMAN Matthew, PARK Jong		
Datasources	PubMed ScienceDirect		
Categories			

Declaration:

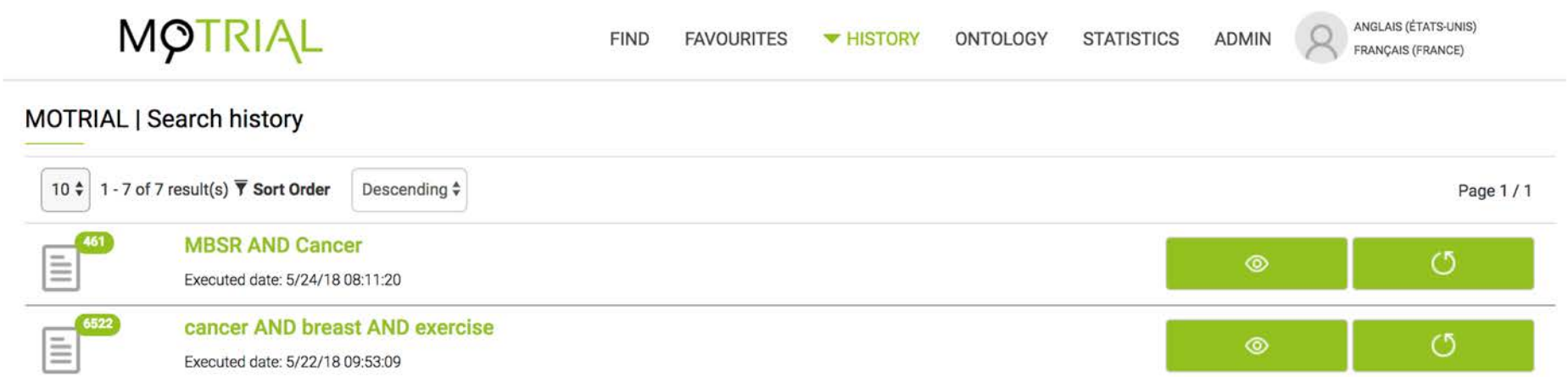
Mindfulness-Based Stress Reduction (MBSR) Symptom Cluster Trial for Breast Cancer Survivors

Abstract:	The purpose of this study among breast cancer survivors is three-fold: (i) to evaluate the efficacy of the MBSR(BC) program in improving psychological and physical symptoms, quality of life and measures of immune function and a stress hormone (cortisol); (ii) to test whether positive effects achieved from the MBSR(BC) program are mediated through changes in mindfulness and fear of recurrence of breast cancer; and (iii) to evaluate whether positive effects achieved from the MBSR(BC) program are modified by specific patient characteristics measured at baseline.		
NTC	NCT01177124		
Start date	2/1/09	Completion date	12/1/13
Detailed description	Breast cancer survivors are living longer and may be living with many symptoms incurred from the disease and its treatment. Survivors from 1 to 2 years off treatment report continued fatigue, depression, pain and		

Exemple d'un rapprochement manuel



Sauvergarde dans un dossier personnel



Download queries

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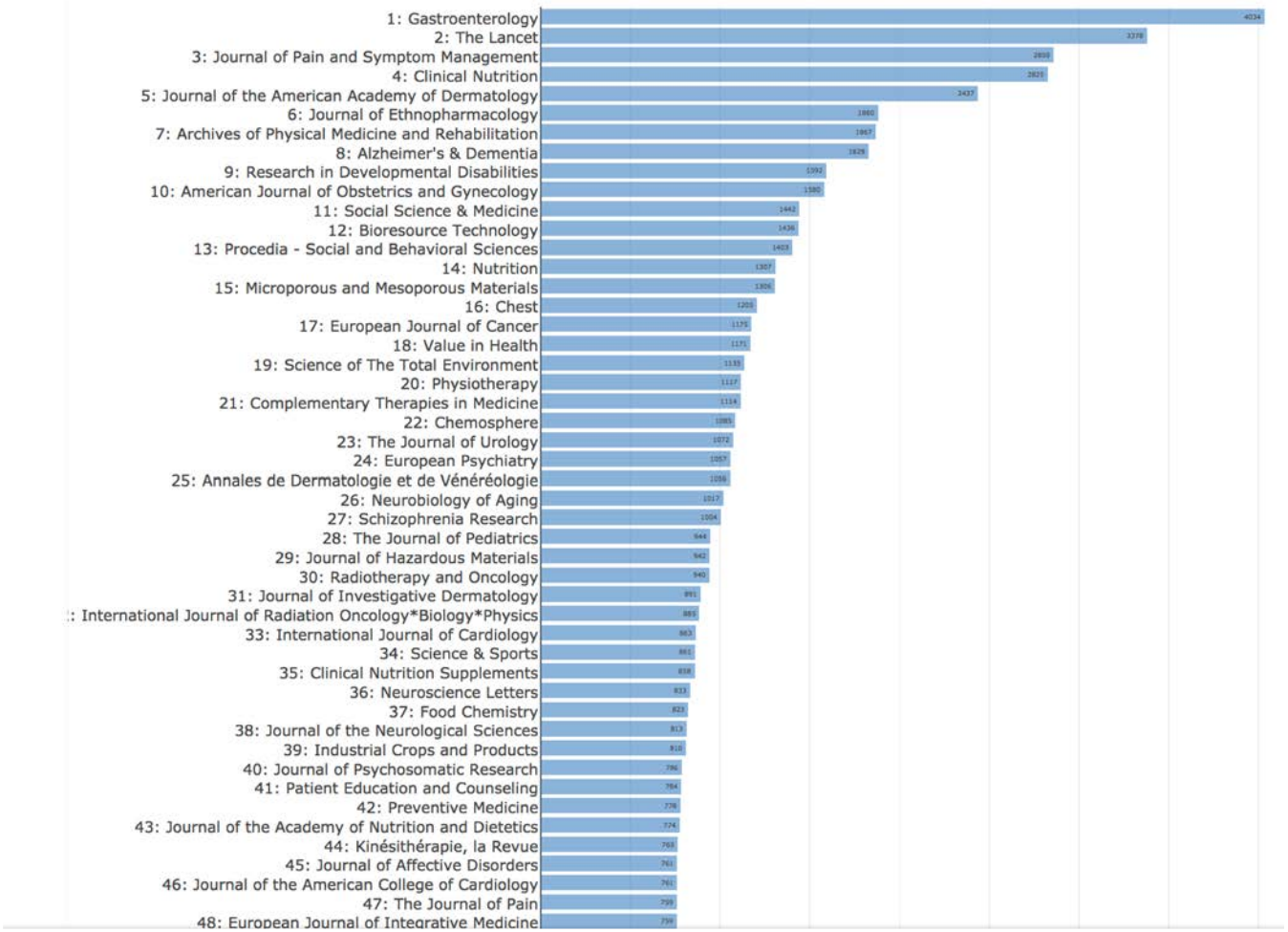
Top 50 Journals



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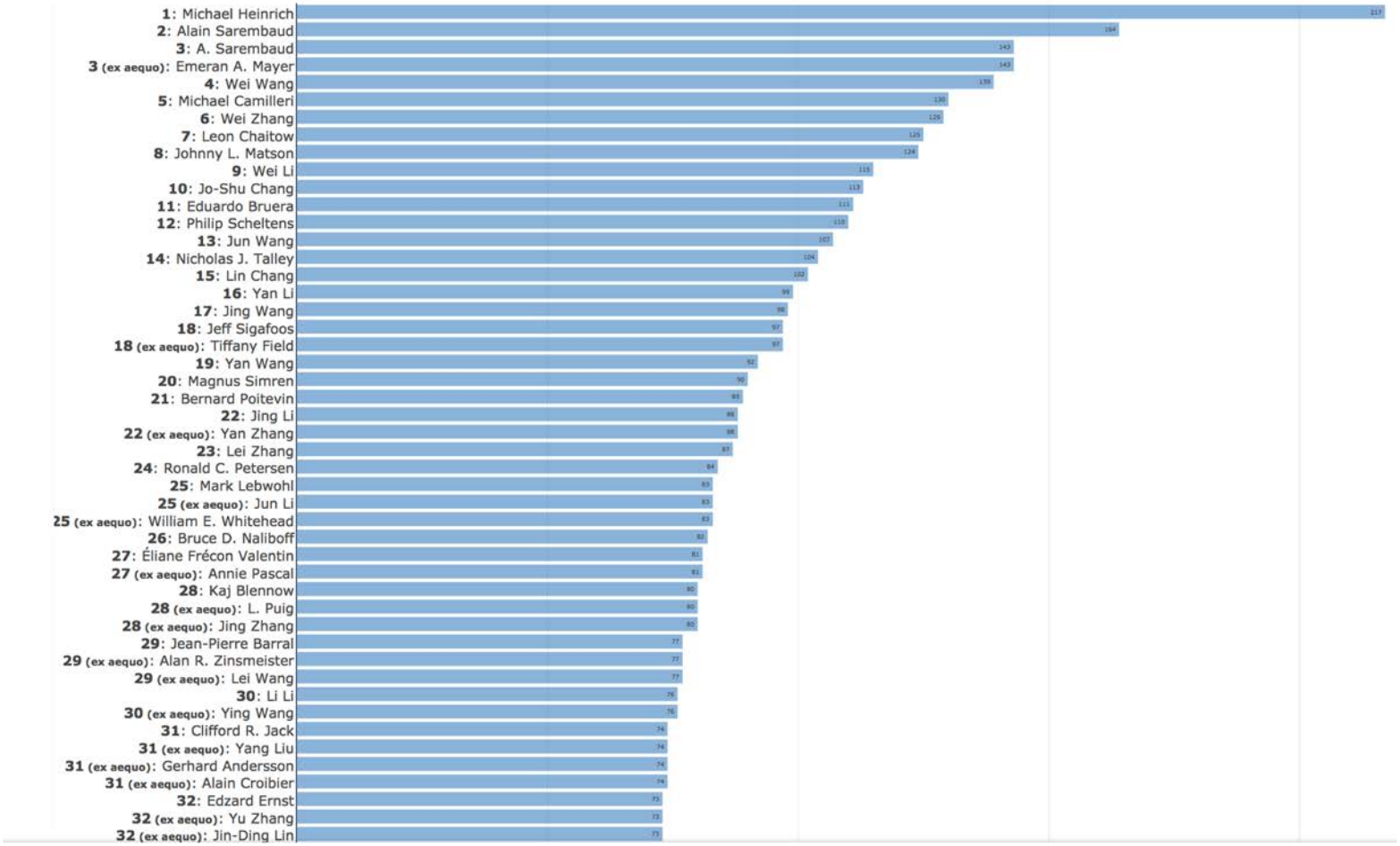
Top 50 Authors



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Autres statistiques

Mots clés

Utilisation

MOTRIAL

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Conditions d'utilisation de Motrial

- accès gratuit et illimité à tout chercheur pour une meilleure connaissance des études
- approche collaborative
- système hébergé à l'Université Paul Valery Montpellier 3
- les articles sources sont à télécharger directement chez les éditeurs

Sponsors

- France
- Région Occitanie
- Montpellier Méditerranée Métropole
- CARSAT
- SIRIC Montpellier Cancer
- Institut National du Cancer (INCa)

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Motrial en résumé

Le métamoteur de recherche des études évaluant l'efficacité des #INM

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Motrial identifie pour chaque étude :

- publication principale (auteurs, titre, résumé, DOI)
- numéro de déclaration au comité d'éthique,
- numéro d'enregistrement du protocole aux autorités compétentes,
- sources de financement,
- nom du promoteur,
- pays de réalisation.

Motrial facilite :

- les revues de littérature,
- les revues systématiques,
- les méta-analyses,
- la justification de nouvelles études.

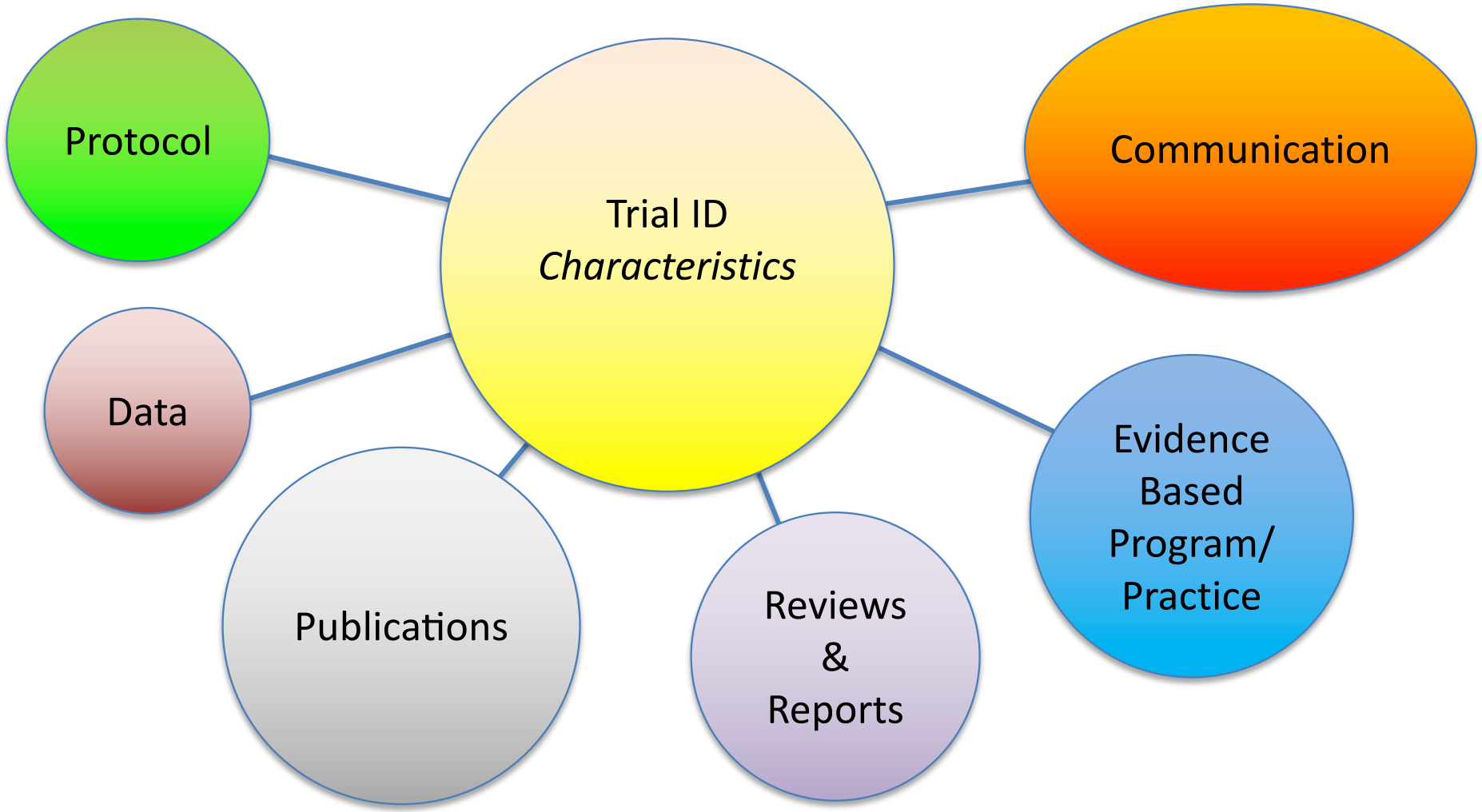
Motrial est :

- gratuit, collaboratif, académique, évolutif

Suggestions :

gregory.ninot@umontpellier.fr

Vers un code et un ID unique d'une étude évaluant une #INM



Blog en Santé

Blog sur les INM

blogensante.fr

BLOG EN SANTÉ©

PLATEFORME CEPS

plateforme-ceps.fr

Plateforme universitaire Collaborative d'Evaluation des programmes de Prévention et des Soins de support

Montpellier, France

Remerciements à nos autres soutiens

SIRIC MONTPELLIER CANCER
Site de Recherche Intégrée sur le Cancer

INSTITUT NATIONAL DU CANCER

Carsat Retraite & Santé au travail
Languedoc-Roussillon

Motrial in Few Words

A metasearch engine dedicated to behavioral intervention trials publications

Motrial identifies for each behavioral trials:

- main trial publication (authors, title, abstract, complete reference, DOI),
- declaration number,
- ethics commission number,
- registration protocol number,
- sponsors,
- institution,
- country.

Motrial for:

- narrative reviews,
- systematic reviews,
- meta-analyses,
- new trial justification.

New version in progress with DOI addition and new databases

MOTRIAL

www.motrial. fr

Any comment, suggestion:

gregory.ninot@umontpellier.fr

Information à recueillir

Modèle théorique utilisé

Théorie sociale cognitive, modèle transthéorique, théorie de

l'autodétermination, théorie des comportements planifiés

- Population

Age, genre, principale caractéristique (étudiants, diabétiques...)

- Caractéristiquesdel'intervention

Méthode de communication (face à face, téléphone, livrets, internet, SMS...), présence d'AP supervisée (oui vs non),

Durée du programme, Nombre total de séances, AP comme critère de jugement principal

- Nature de la comparaison

Type de groupe contrôle (pas d'intervention, intervention minimale,

placebo attentionnel, comparaison active)

- Outcome

Type d'indicateur d' AP utilisé (e.g., dépense énergétique, durée...), outil utilisé (auto-rapporté vs objectif)

Information à recueillir

Choix de la grille de qualité méthodologique

- Boutron, I., Moher, D., Altman, D. G., Schulz, K. F., Ravaud, P., & CONSORT Group. (2008). Extending the CONSORT statement to randomized trials of nonpharmacologic treatment: explanation and elaboration. Annals of Internal Medicine, 148(4), 295–309. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/18283207
- Des Jarlais, D. C., Lyles, C., & Crepaz, N. (2004). Improving the reporting quality of nonrandomized evaluations of behavioral and public health interventions: the TREND statement. American Journal of Public Health, 94(3), 361–366.
- Jackson, N., Waters, E., & Guidelines for Systematic Reviews in Health Promotion and Public Health Taskforce. (2005). Criteria for the systematic review of health promotion and public health interventions. Health Promotion International, 20(4), 367–374. https://doi.org/10.1093/heapro/dai022
- Lundh, A., & Gøtzsche, P. C. (2008). Recommendations by Cochrane Review Groups for assessment of the risk of bias in studies. BMC Medical Research Methodology, 8(1), 22. https://doi.org/10.1186/1471-2288-8-22

Information à recueillir

Grille CONSORT

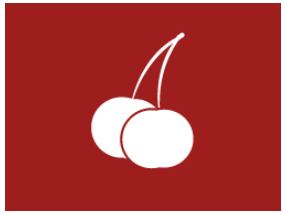
Annals of Internal Medicine RESEARCH AND REPORTING METHODS

CONSORT Statement for Randomized Trials of Nonpharmacologic Treatments: A 2017 Update and a CONSORT Extension for Nonpharmacologic Trial Abstracts

Isabelle Boutron, MD, PhD; Douglas G. Altman, DSc; David Moher, PhD; Kenneth F. Schulz, PhD, MBA; and Philippe Ravaud, MD, PhD, for the CONSORT NPT Group*

Les INM : un secteur intermédiaire en pleine expansion

Biens et services de consommation courante



Normes de fabrication

DGCCRF

INM

Vérifier et surveiller les bénéfices sur la santé et sur les comportements de santé, l'impact sur la qualité de vie, les risques et l'utilité

Santé publique France · anses · ansm · Haut Conseil de la Santé Publique · HAS

Produits et services biomédicaux

Démontrer le service médical rendu (SMR) + autorisation de mise sur le marché (AMM)

ansm · HAS

ICEPS Conference : un congrès scientifique international et un salon sur les INM

Edition n°1
Montpellier, 25 mars 11

Edition n°2
Montpellier, 5 avril 13

Edition n°3
Montpellier, 19-21 mars 15

Edition n°4
Montréal, 19-21 mai 16

Edition n°5
Montpellier, 18-20 mai 17

Edition n°6
Montpellier, 23 mars 18

Edition n°7
Montpellier, 28-30 mars 19

Edition n°8
Toulouse, 20 mars 20

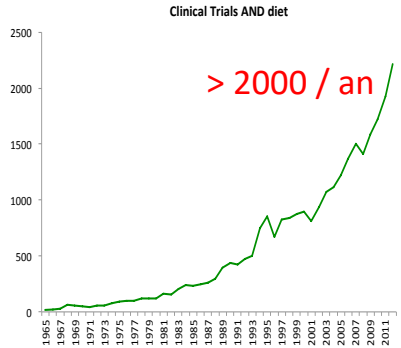
3200 participants

depuis 2011

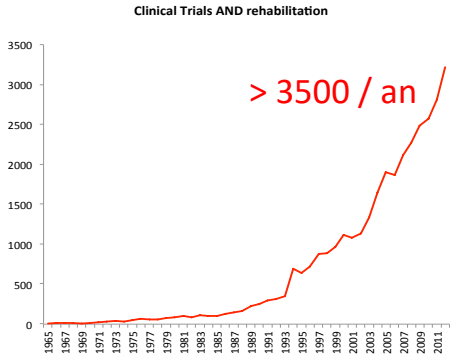
17 nationalités

www.iceps-conference.fr

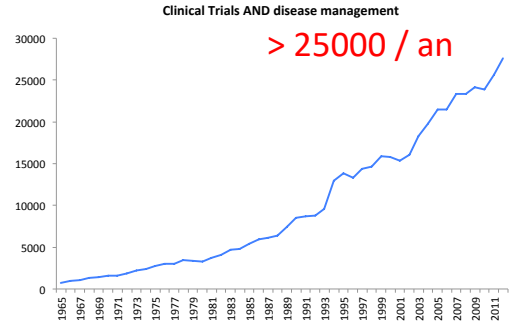
Multiplication des études interventionnelles évaluant les INM depuis 2000



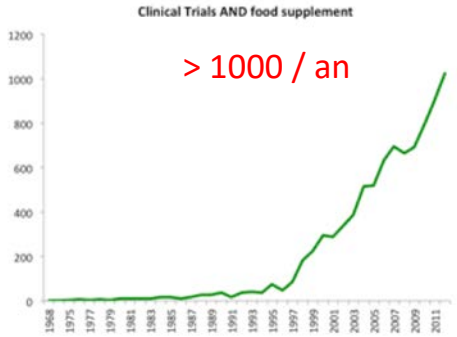
Régimes



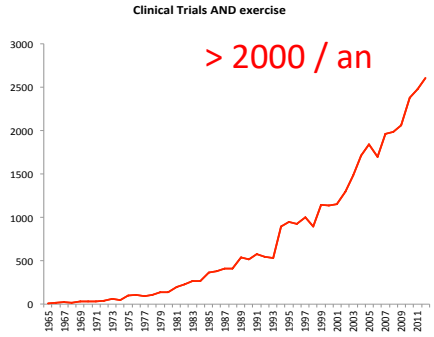
Méthodes manuelles



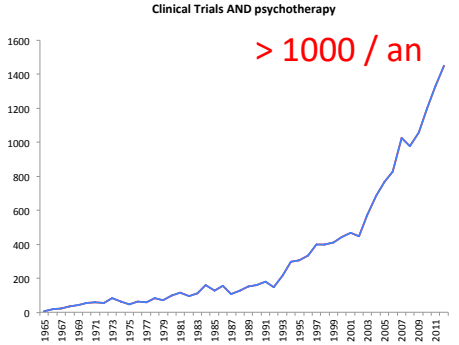
Méthodes d'éducation thérapeutique



Compléments alimentaires



Programmes d'activité physique



Psychothérapies

2 millions de publications d'études cliniques depuis 1827, dont **73.691** en 2014 (données uniquement de Pubmed)

Permettant leur comparaison dans des méta-analyses

Study or subgroup	Exercise N	Exercise Mean(SD)	Cognitive Therapy N	Cognitive Therapy Mean(SD)	Std. Mean Difference IV,Random,95% CI	Weight	Std. Mean Difference IV,Random,95% CI
Fremont 1987	15	6.1 (6.6)	16	8 (7.1)		16.5 %	-0.27 [-0.98, 0.44]
Epstein 1986	7	9 (10.94)	9	17.22 (8.45)		7.7 %	-0.81 [-1.85, 0.23]
Hess-Homeier 1981	5	9.8 (6.93)	6	7.2 (5.03)		5.7 %	0.40 [-0.81, 1.60]
Klein 1985	14	1.03 (0.94)	14	1.23 (0.84)		15.0 %	-0.22 [-0.96, 0.53]
Setaro 1985	25	62 (6.51)	25	60.68 (6.2)		26.8 %	0.20 [-0.35, 0.76]
Fetsch 1979	8	13.63 (7.95)	8	11.63 (5.5)		8.5 %	0.28 [-0.71, 1.26]
Gary 2010	20	8.4 (5.6)	17	8.2 (6.3)		19.8 %	0.03 [-0.61, 0.68]
Total (95% CI)	**94**		**95**			**100.0 %**	**-0.03 [-0.32, 0.26]**

Heterogeneity: $Tau^2 = 0.0$; $Chi^2 = 4.43$, df = 6 (P = 0.62); $I^2 = 0.0\%$

Test for overall effect: Z = 0.22 (P = 0.83)

Test for subgroup differences: Not applicable

Exercice vs. TCC

Symptômes dépressifs

7 RCT

189 participants

-0.03 {-0.32, 0,26}

Cooney *et al.* (2013, *Cochrane*)

Un outil facilitant l'identification des études cliniques évaluant les INM

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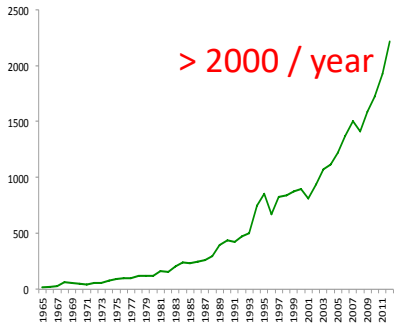
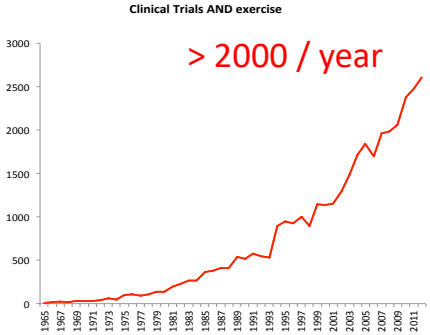
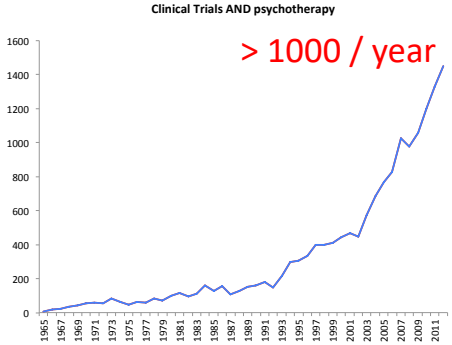
An Exponential Growth of Clinical Trial Publications Since 2000



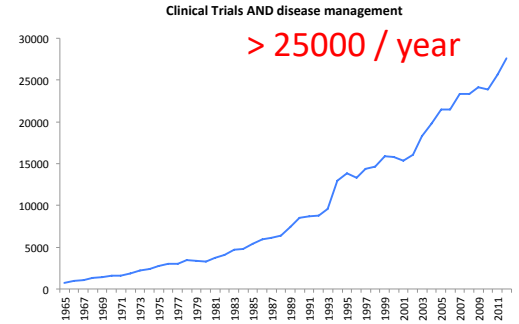
Diets



Physical Activity Programs



Psychotherapies



Disease Management Methods

> 100.000 trial publications per year

Condition of utilization

- Free and unlimited access to researchers
- Collaborative approach
- System managed by the University of Paul Valery Montpellier 3
- Original pdf articles must be downloaded via the Editors

MOTRIAL

690,000 € (= 800,000 US $ = 1M Can$)

with the support of France State, Region Occitanie et Montpellier Méditerranée Metropole

Objectif 1 : diminuer le temps de recherche bibliographique de 6 mois à 6 minutes

Electronic searches

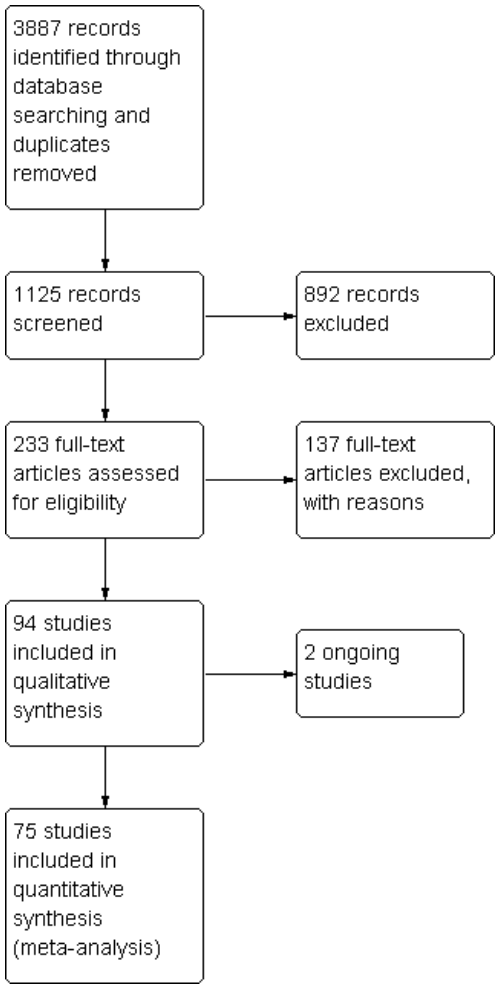
We searched the Cochrane Bone, Joint and Muscle Trauma Group Specialised Register (January 2011), the Cochrane Central Register of Controlled Trials (*The Cochrane Library* 2011, Issue 1), MEDLINE (1966 to 1st Feb 2011), EMBASE (1980 to 1st Feb 2011), PEDro - The Physiotherapy Evidence Database (accessed 27th Jan 2011), OTseeker - The Occupational Therapy Systematic Evaluation of Evidence Database (accessed 18th Jan 2011), CINAHL - Cumulative Index to Nursing and Allied Health Literature (from 1982 to 21st Jan 2011) and AMED - Allied and Complementary Medicine Database (from 1985 to Jan 2011). No language restrictions were applied.

In MEDLINE (Ovid Web), the first two phases of the optimal trial search strategy (Robinson 2002) were combined with one subject specific search and the less precise third phase of the optimal trial search strategy was combined with a more precise subject specific search (Appendix 1). Search strategies are also shown in Appendix 1 for *The Cochrane Library*, CINAHL, EMBASE, AMED, PEDro, and OTseeker.

Searching other resources

Further studies were identified by contact with institutions, experts in the field and reference lists of articles.

Figure 1. Study flow diagram.



3 887 publications identifiées

75 études sélectionnées

Howe *et al.* (2011, *Cochrane*)

Objectif 2 : obtenir les informations pertinentes de chaque étude clinique sur une INM

OPEN ACCESS Freely available online

PLOS | MEDICINE

Essay

How to Make More Published Research True

John P. A. Ioannidis[1,2,3,4]*

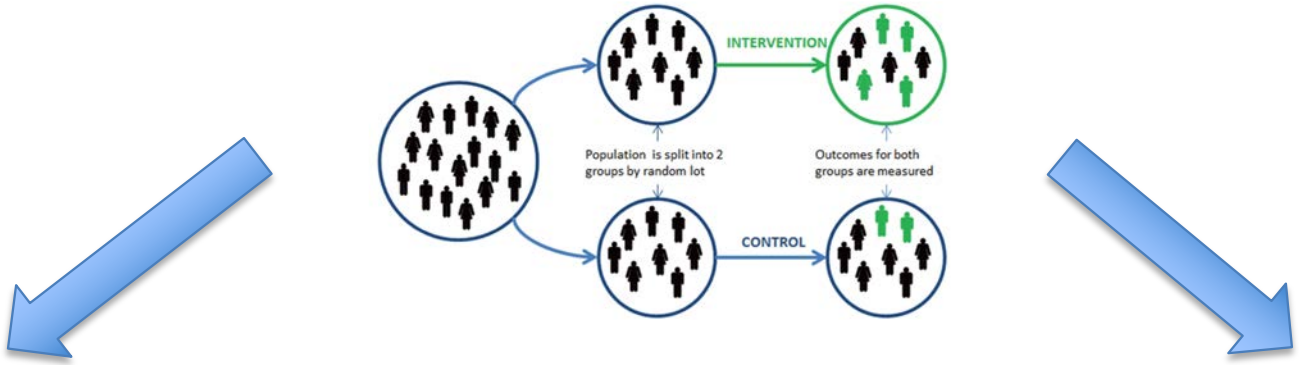
1 Meta-Research Innovation Center at Stanford (METRICS), Stanford University, Stanford, California, United States of America, **2** Department of Medicine, Stanford Prevention Research Center, Stanford, California, United States of America, **3** Department of Health Research and Policy, Stanford University School of Medicine, Stanford, California, United States of America, **4** Department of Statistics, Stanford University School of Humanities and Sciences, Stanford, California, United States of America

> Adoption of more appropriate statistical methods [38], standardized definitions and analyses and more stringent thresholds for claiming discoveries or "successes" [39] may decrease false-positive rates in fields that have to-date been too lenient (like epidemiology [40], psychology [41,42], or economics [43]). It may lead them to higher credibility, more akin to that of fields that have traditionally been more rigorous in this regard, like the physical sciences [44].

Ioannidis (2015, *Plos Medicine*)

World Health Organization · equator network · CONSORT TRANSPARENT REPORTING of TRIALS · SPIRIT STANDARD PROTOCOL ITEMS: RECOMMENDATIONS FOR INTERVENTIONAL TRIALS · TIDieR Template for Intervention Description and Replication · ibtn international behavioural trials network

Objectif 2 : obtenir les informations pertinentes de chaque étude clinique sur une INM



Publication principale de l'essai

Par exemple:
doi: 10.1016/j.rmed.2010.10.002
Ninot G, Moullec G, Picot MC, Jaussent A, Hayot M, Desplan M, Brun JF, Mercier J, Prefaut C. Cost-saving effect of supervised exercise associated to COPD self-management education program. Respir Med. 2011 Mar;105(3):377-85.


Respiratory Medicine (2011) 105, 377–385

available at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevier.com/locate/rmed

Cost-saving effect of supervised exercise associated to COPD self-management education program

G. Ninot [a,*], G. Moullec [a], M.C. Picot [b], A. Jaussent [b], M. Hayot [c], M. Desplan [c], J.F. Brun [c], J. Mercier [c], C. Prefaut [c]

[a] University Montpellier 1, Laboratory Epsylon, EA-4206 Addictive, Performance and Health Behaviors, 4 Boulevard Henri IV, Montpellier F-34000, France
[b] University Montpellier 1, CHU Montpellier, Unité de Recherche Clinique et Epidémiologie, Montpellier F-34295, France
[c] University Montpellier 1, CHU Montpellier, INSERM ERI25 Muscle and Pathologies, Montpellier F-34295, France

Autres publications sur l'essai

Par exemple:
doi: 10.1016/j.rm.2014.10.022
doi: 10.1016/med.2012.10.052

Déclaration du protocole

Par exemple:
NCT01167283
ClinicalTrials.gov Identifier

Comité d'éthique

Par exemple:
n°354903
CPP Sud Méditerranée

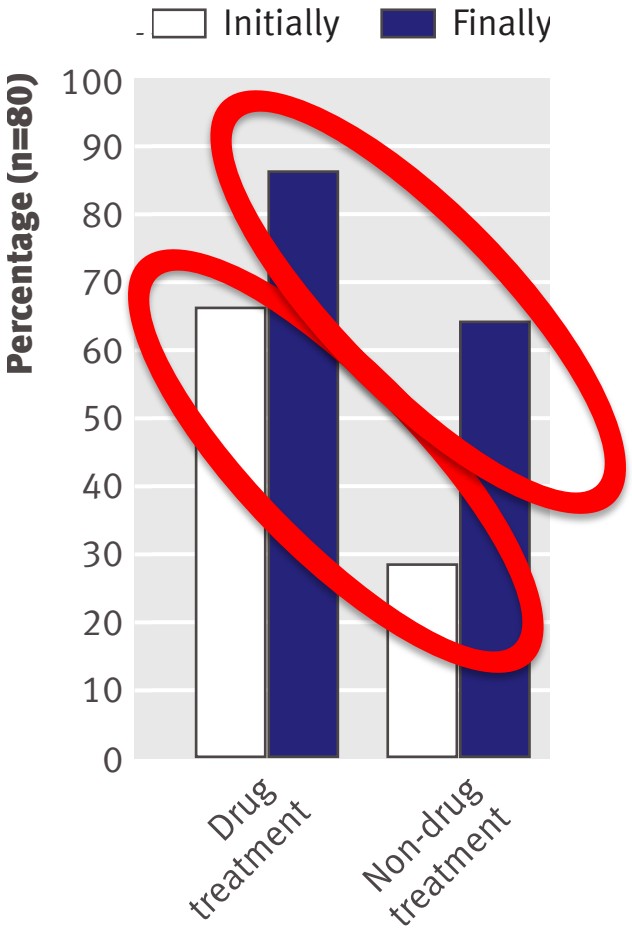
Financeur

Par exemple
Programme Hospitalier de Recherche Clinique (PHRC)
Etat français

Promoteur

Par exemple:
CHU Montpellier
France

Objectif 3 : préciser les contenus des INM évaluées dans les études interventionnelles



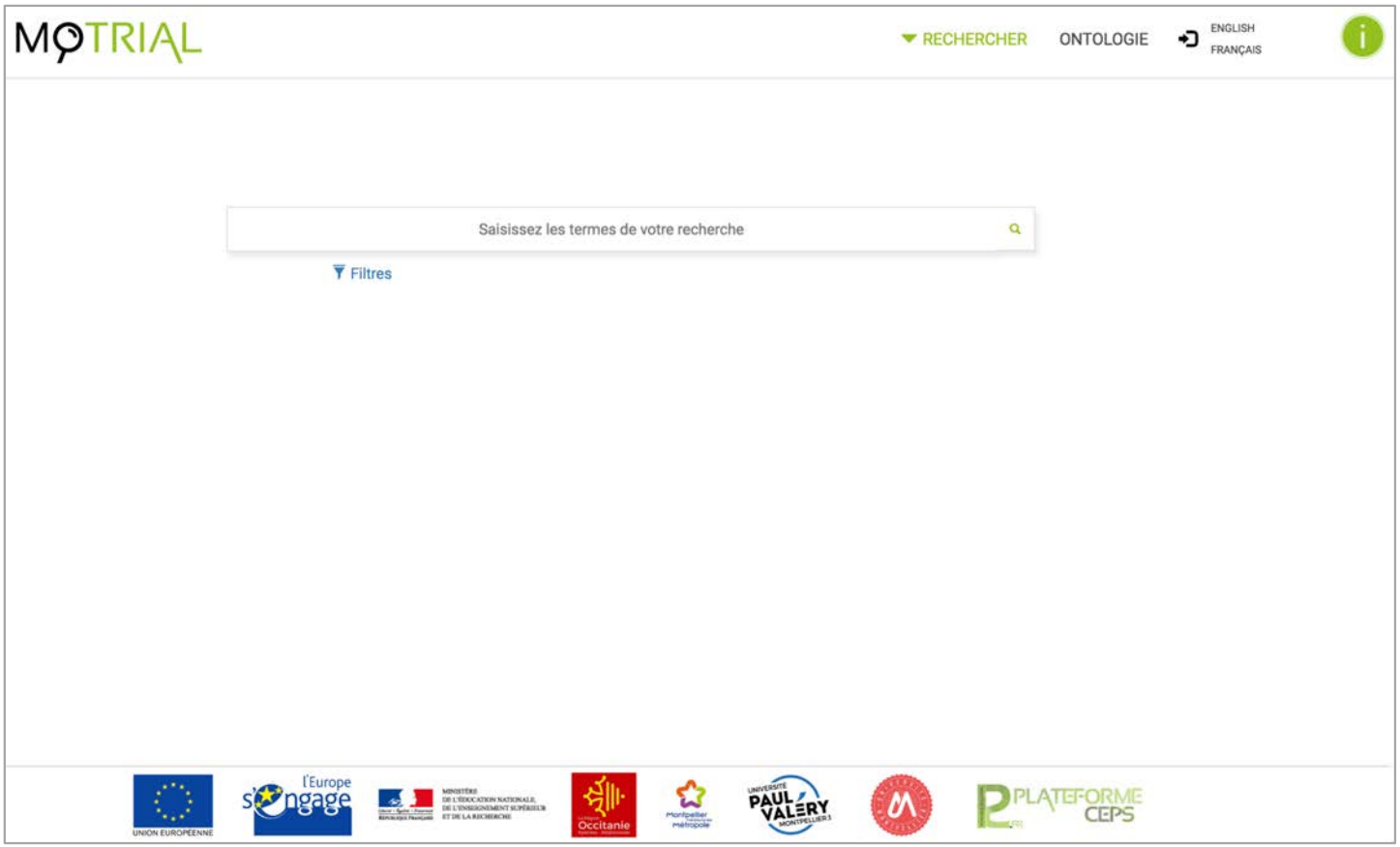
Des INM insuffisamment décrites dans les publications

"Percentage of studies with sufficient description of treatment initially (based only on the published paper) and after supplementary information was obtained".

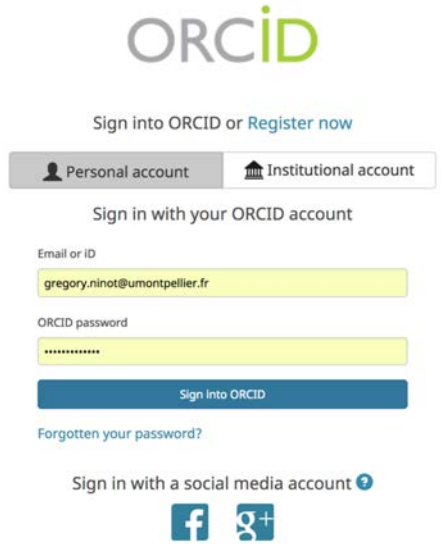
Glasziou *et al.* (2008, *British Medical Journal*)

Accès à MOTRIAL via un compte ORCID (*Connecting Research and Researchers*)

[www.motrial. fr](http://www.motrial.fr)



Inscription sur ORCID



Mots clés

Taper vos mots clés

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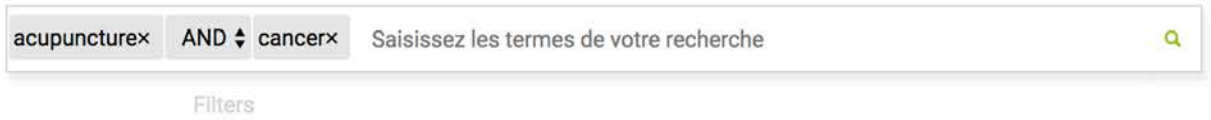
Mots clés ET ou OU



Utiliser le AND ou le OR

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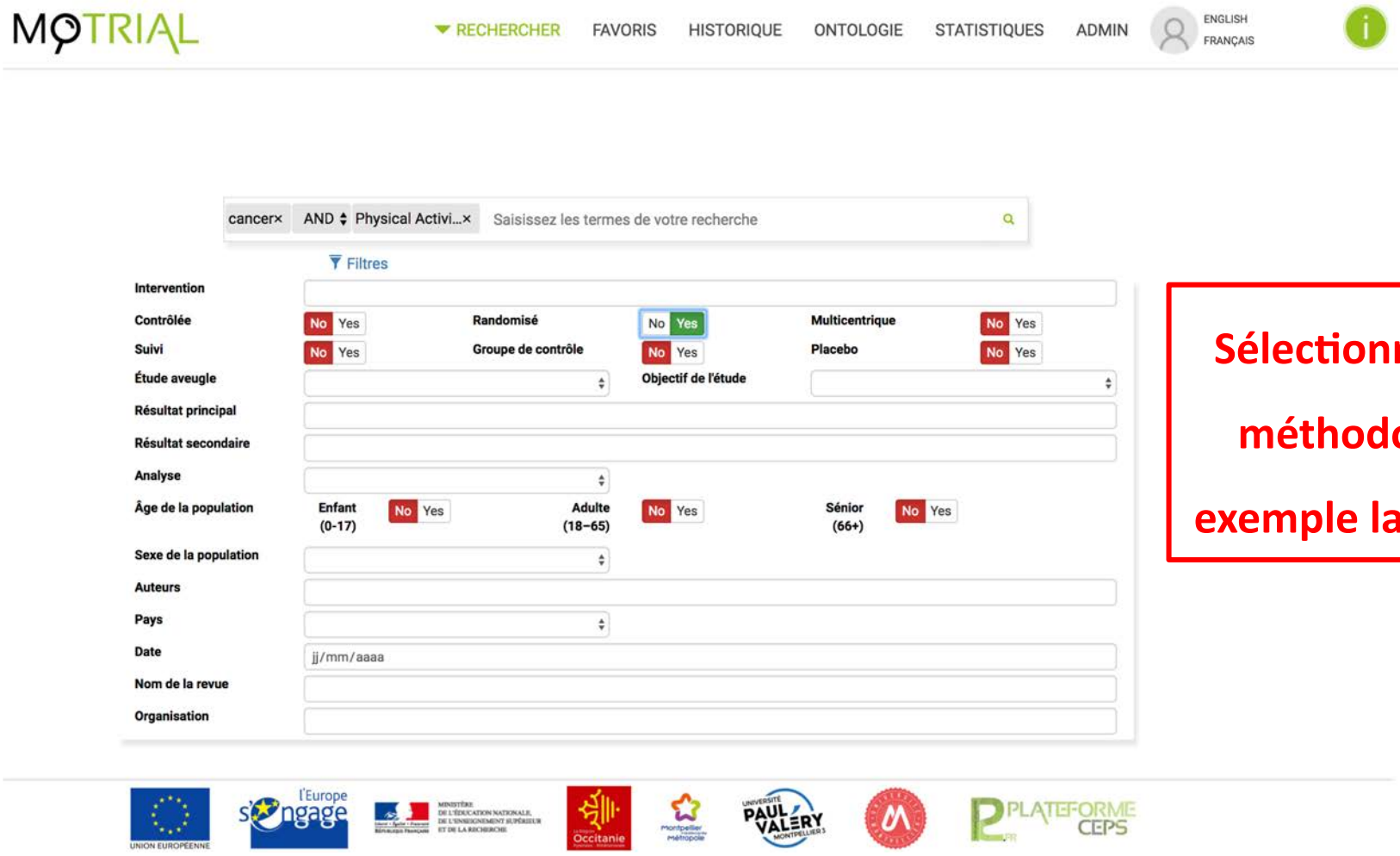
Choix méthodologiques



Sélectionner des options méthodologiques (par exemple la randomisation)

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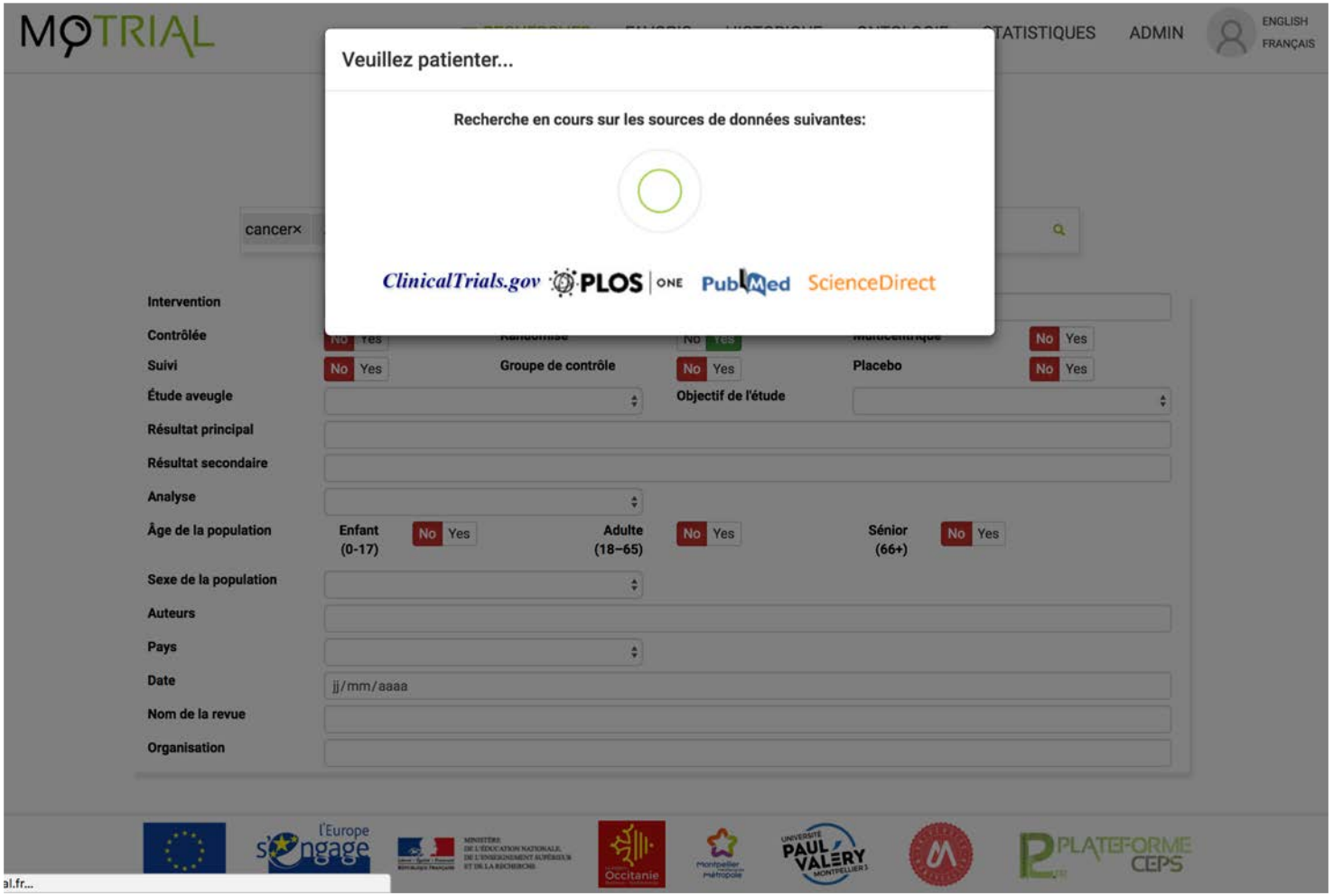
Recherche sur les bases de données partenaires



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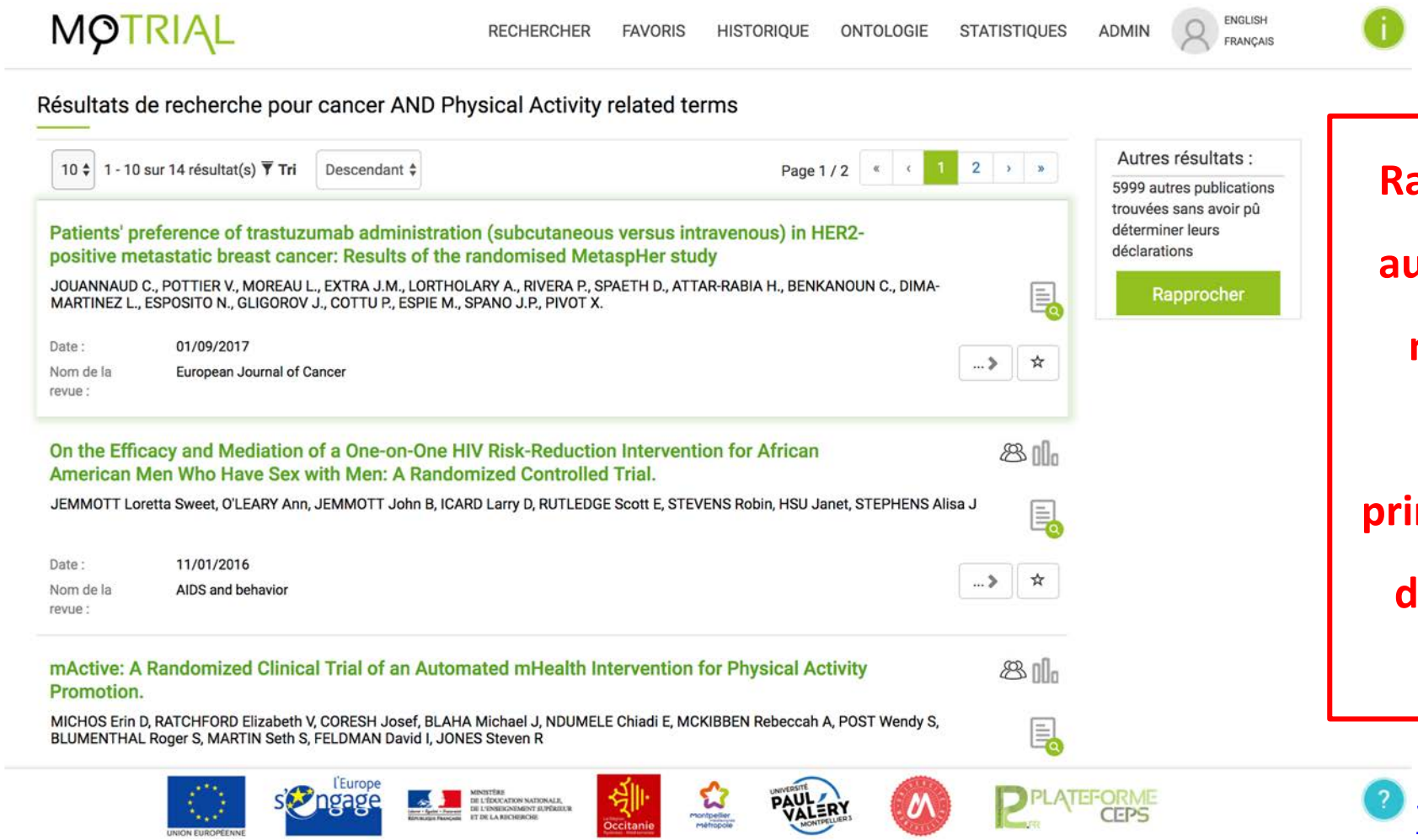
Résultat de la recherche des publications et des déclarations d'études



Rapprochement automatique ou manuel de la publication principale et de la déclaration du protocole

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Exemple de rapprochement entre la publication principale et la déclaration du protocole

MOTRIAL RECHERCHER FAVORIS HISTORIQUE ONTOLOGIE STATISTIQUES ADMIN ENGLISH FRANÇAIS

Actions :

☆ 🖶

← Liste résultats

Publication:

mActive: A Randomized Clinical Trial of an Automated mHealth Intervention for Physical Activity Promotion.

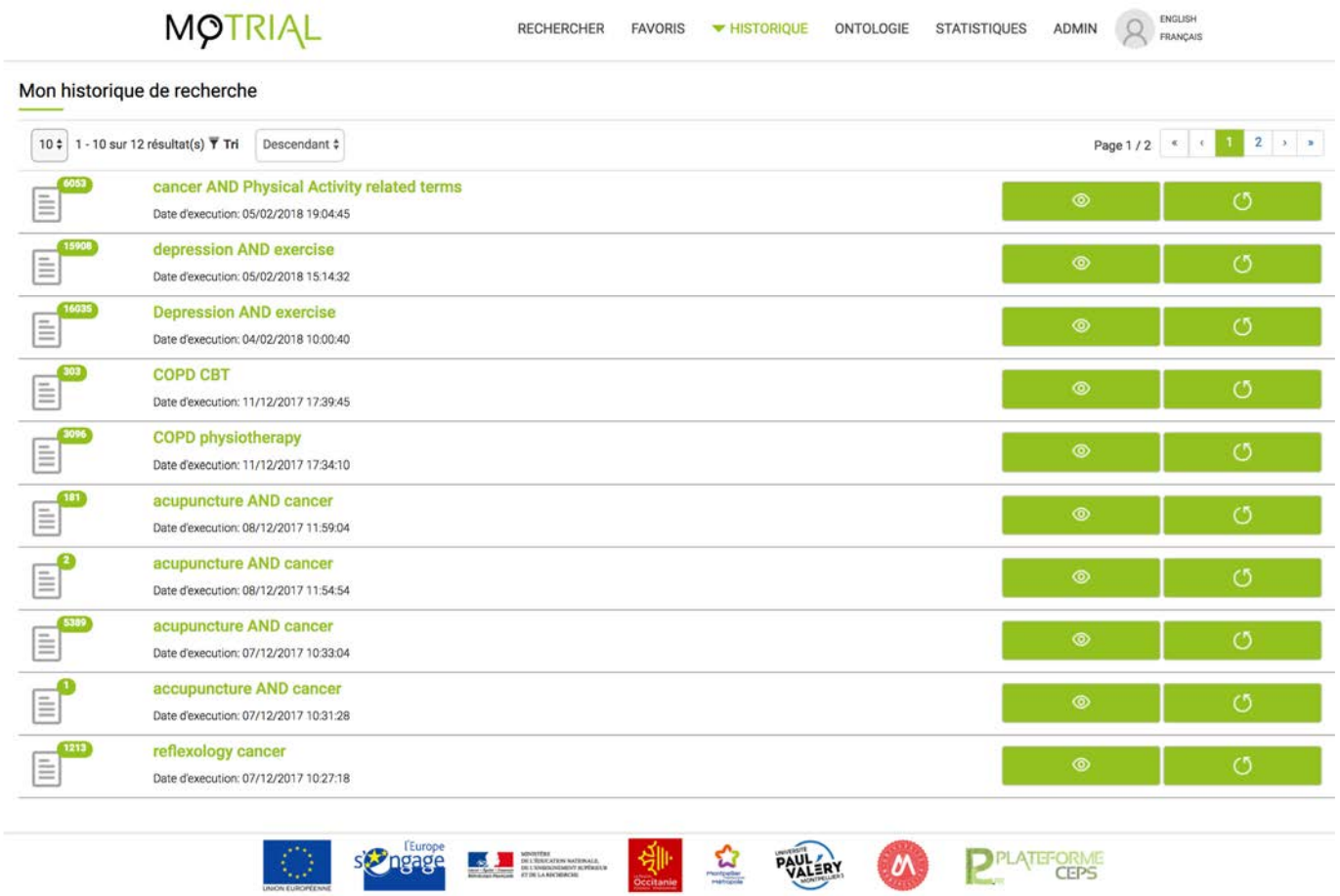
Abstract	We hypothesized that a fully automated mobile health (mHealth) intervention with tracking and texting components would increase physical activity. mActive enrolled smartphone users aged 18 to 69 years at an ambulatory cardiology center in Baltimore, Maryland. We used sequential randomization to evaluate the intervention's 2 core components. After establishing baseline activity during a blinded run-in (week 1), in phase I (weeks 2 to 3), we randomized 2:1 to unblinded versus blinded tracking. Unblinding allowed continuous access to activity data through a smartphone interface. In phase II (weeks 4 to 5), we randomized unblinded participants 1:1 to smart texts versus no texts. Smart texts provided smartphone-delivered coaching 3 times/day aimed at individual encouragement and fostering feedback loops by a fully automated, physician-written, theory-based algorithm using real-time activity data and 16 personal factors with a 10 000 steps/day goal. Forty-eight outpatients (46% women, 21% nonwhite) enrolled with a mean±SD age of 58±8 years, body mass index of 31±6 kg/m(2), and baseline activity of 9670±4350 steps/day. Daily activity data capture was 97.4%. The phase I change in activity was nonsignificantly higher in unblinded participants versus blinded controls by 1024 daily steps (95% confidence interval [CI], -580 to 2628; P=0.21). In phase II, participants receiving texts increased their daily steps over those not receiving texts by 2534 (95% CI, 1318 to 3750; P<0.001) and over blinded controls by 3376 (95% CI, 1951 to 4801; P<0.001). An automated tracking-texting intervention increased physical activity with, but not without, the texting component. These results support new mHealth tracking technologies as facilitators in need of behavior change drivers. URL: http://ClinicalTrials.gov/. Unique identifier: NCT01917812.		
Sponsor(s)	N/A	Pays	N/A
Nom de la revue	Journal of the American Heart Association	ISSN de la revue	2047-9980
Langue	eng	Date	09/11/2015
DOI	Dx.doi.org/10.1161/JAHA.115.002239	ID	26553211
Auteurs	MICHOS Erin D, RATCHFORD Elizabeth V, CORESH Josef, BLAHA Michael J, NDUMELE Chiadi E, MCKIBBEN Rebeccah A, POST Wendy S, BLUMENTHAL Roger S, MARTIN Seth S, FELDMAN David I, JONES Steven R		
Source de données	PubMed		
Catégories	Interventions physiques santé		

Déclaration:

mActive: A Blinded, Randomized mHealth Trial of Digital Activity Tracking and Smart Texting to Promote Physical Activity

Abstract:	Despite their importance, health-related behaviors are hard to change. Among behaviors, physical activity is associated with protection from multiple diseases. People who are physically active have lower risk for heart disease, stroke, type 2 diabetes, depression, and some cancers with associated dose-dependent reductions in cardiovascular and all-cause mortality. However, most US adults do not meet CDC physical activity guidelines. Sedentary work behavior in industrialized nations is likely a contributor to this problem. Current low-technology strategies for encouraging lifestyle change are disappointingly ineffective and are highly resource intensive. Systematic reviews of the literature show mixed evidence for using activity trackers (i.e., pedometers) and a limited body of evidence for text messaging in preventive health care. However, prior studies have not integrated digital activity tracking with mobile phone text messaging feedback. Given 91% of adults in the United States now use a mobile phone, and 56% a smartphone, this represents a potentially widely applicable avenue for therapeutic intervention. There is growing interest in leveraging mobile health (mHealth) technologies to improve health behaviors in the general population. The investigators propose to conduct a blinded, randomized mHealth trial of digital activity tracking and smart texting to promote physical activity.
NTC	NCT01917812

Enregistrement dans un dossier personnel exportable



Enregistrer vos requêtes et exporter

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Production de statistiques

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Motrial en résumé

Le métamoteur de recherche des études évaluant l'efficacité des INM

MOTRIAL

Motrial identifie pour chaque étude :

- la publication principale (auteurs, titre, résumé,

référence bibliographique complète, DOI),

- le numéro de déclaration au comité d'éthique,

- le numéro d'enregistrement du protocole aux autorités compétentes,

- les sources de financement,

- le nom du promoteur,

- le pays de réalisation.

Motrial facilite :

- les revues de littérature,

- les revues systématiques,

- les méta-analyses,

- la justification de nouvelles études.

Rendez-vous sur **www.motrial. fr**

Une méta-analyse : un long (3 ans) travail d'équipe multidisciplinaire

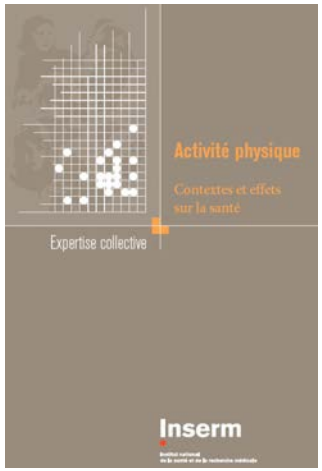
Health Psychology Review, 2015
http://dx.doi.org/10.1080/17437199.2014.981777

Efficacy of theory-based interventions to promote physical activity. A meta-analysis of randomised controlled trials

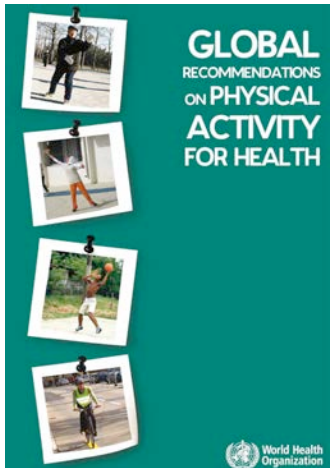
M. Gourlan[a,b,c]*, P. Bernard[a,b], C. Bortolon[a,b], A. J. Romain[a,b,d], O. Lareyre[a,b,c], M. Carayol[a,b,e], G. Ninot[a,b] and J. Boiché[a,b]

Activités physiques et santé

"Pour"



Expertise Collective
(2008)



OMS
(2010)

Académie de Médecine
(2012)

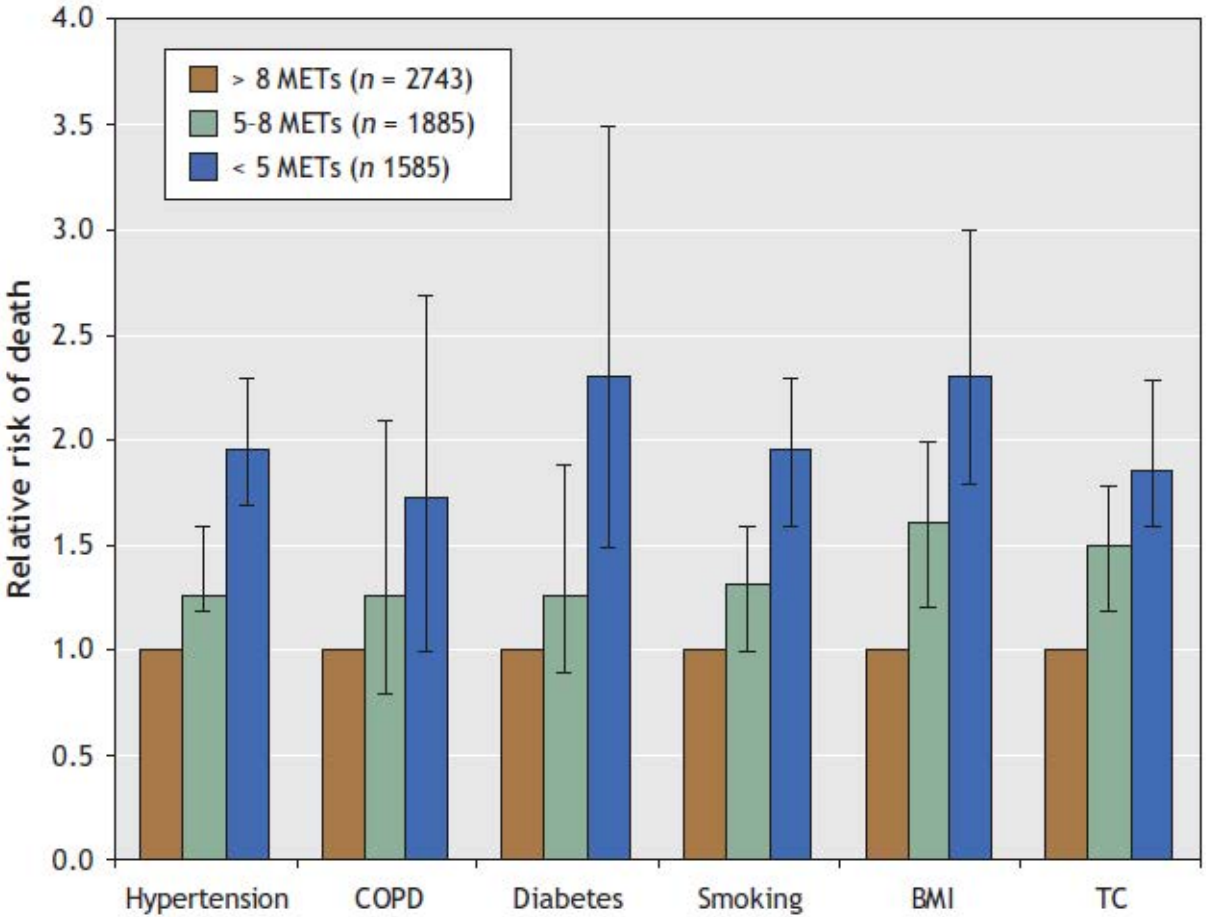
anses
agence nationale de sécurité sanitaire
alimentation, environnement, travail

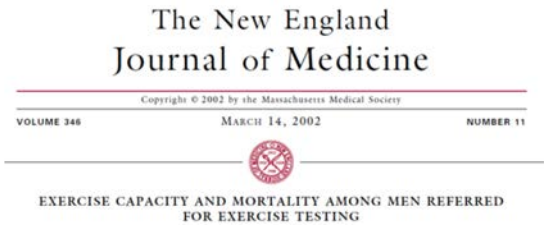
Expertise Collective
(2012)

"Contre"

"Whenever I feel the urge to exercise, I sit down and wait until the urge passes"

Activités physique et santé





Myers (2002, NEJM)

Solutions de promotion de la santé

Programme National Nutrition Santé (PNNS) (2001-2005; 2006-2010; 2011-2015)

Plan Obésité (2010-2013)

Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE

Ministère de la Santé et des Solidarités
Ministère délégué à la Sécurité Sociale, aux Personnes âgées, aux Personnes handicapées et à la Famille

Ministère de la Jeunesse, des Sports et de la Vie associative

PLAN NATIONAL
"BIEN VIEILLIR"
2007 - 2009

Plan Bien Vieillir (2007-2009)

2,5 h d'intensité modérée par semaine pour l'adulte sain

Activité physique cumulable par des séquences d'au moins 10 minutes d'activité sportive, de déplacement, d'activité professionnelle ou de la vie quotidienne

Objectifs opérationnels de la méta-analyse

- identifier le(s) modèle(s) socio-cognitif(s) le(s) plus efficace(s) pour augmenter le niveau d'activité physique à court (i.e., post-intervention) et moyen terme (i.e., quelques mois après l'intervention)

- comparer les interventions s'appuyant sur un ou plusieurs modèles

- explorer le rôle de deux modérateurs
  qualité méthodologique selon critères CONSORT pour les thérapies non médicamenteuses
  Boutron et al. (2008, AIM)
  qualité d'implémentation théorique (*Theory Coding Sheme*)
  Michie et Prestwich (2010, HP)

Critères d'inclusion

- action de prévention primaire visant à augmenter le niveau d'activité physique
- intervention basée sur un modèle théorique (explicitement mentionné, justifiant l'intervention)
- intervention ciblée sur des adultes
- essai randomisé contrôlé
- mesure du niveau d'AP des participants (dépense énergétique, nombre de pas et/ou questionnaire)

Modèle d'équation de recherche sur Pubmed et PsychInfo jusqu'au 15 mai 2013 et MESH

« Randomized controlled trial »

AND

"Exercise" OR "Exercise Therapy" OR "Exercise Movement Techniques" OR "Physical activity" OR "Resistance Training" OR "Muscle Stretching Exercises" OR "Breathing Exercises" OR "Sports" OR "Motor Activity" OR "Relaxation" OR "Physical Fitness"

AND

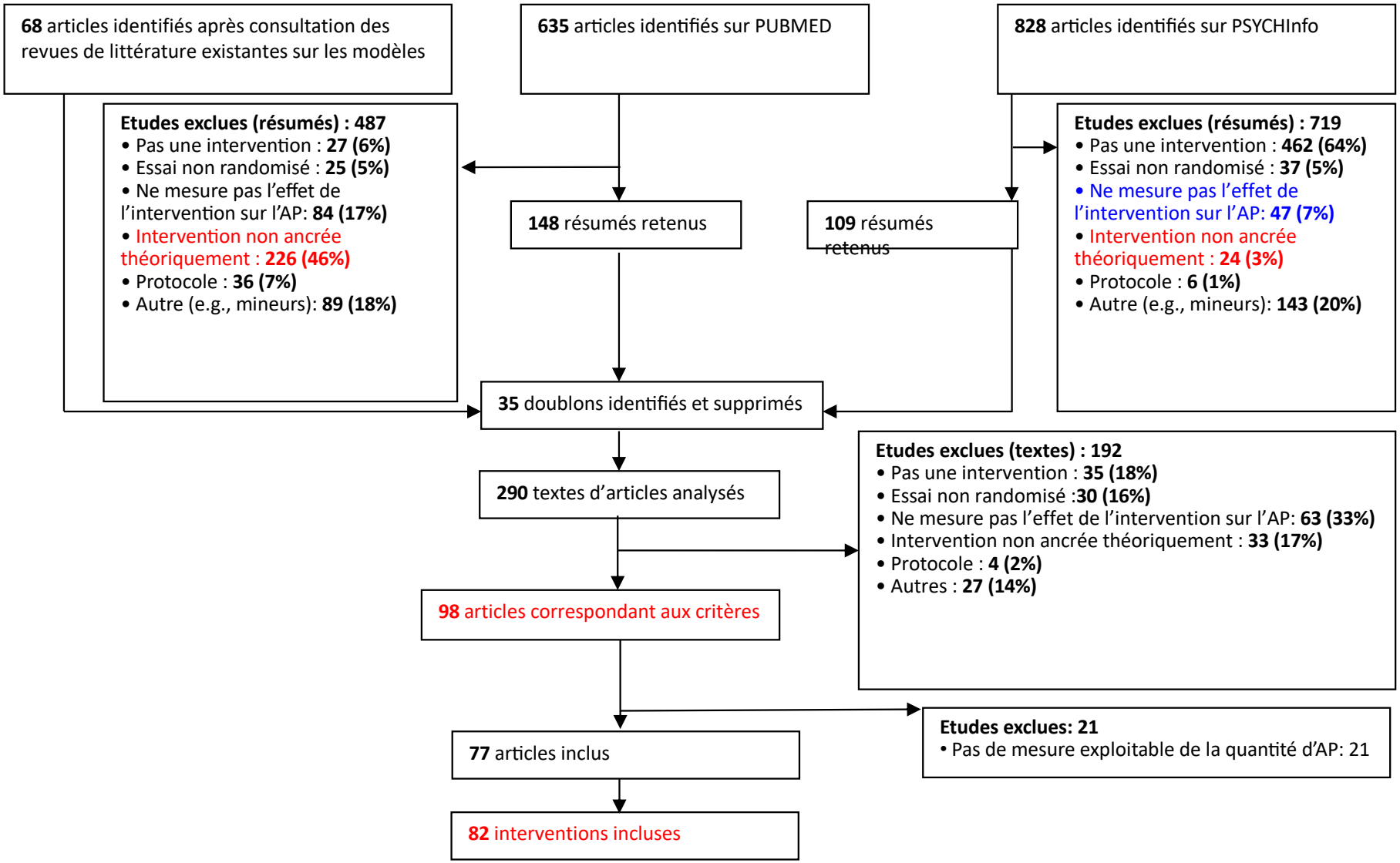
« Intervention » OR « Program » OR « Treatment » OR « Promotion » OR « Management »

AND

« Self determination theory » OR « Autonomous motivation » OR « Controlled motivation » OR « Self determined motivation » OR « Non self determined motivation » OR « Intrinsic motivation » OR « Extrinsic motivation » OR « Basic psychological needs » OR « Autonomy support » OR « Psychological needs support »

Preferred Reporting Items for Systematic Reviews and Meta-Analyses statement - PICOS (Liberati et al., 2009, Plos Med)

Flow chart de la revue systématique



Participants = 19 357 (dont 10 574 groupes intervention et 8 783 groupes contrôle)

Age moyen = 48,4 (ET = 13,9)

Mixte = 62 (75%), 18 (23%) exclusivement féminin et 2 (2%) exclusivement masculin

Sédentaires = 18

Travailleurs = 7

Etudiants = 5

Personnes âgées = 5

Femmes enceintes (ou période postnatal) = 3

Diabétiques (type 1 ou 2) = 10

Obèses ou en surpoids = 7

Patients atteints de cancer = 5

Patients atteints de maladies chroniques « diverses » (e.g., hypertension, cardiopathies) = 11

Populations « spécifiques » (e.g., adultes dont au moins un parent a un diabète, femmes en surpoids d'origine latine à faible revenu et rencontrant des problèmes d'acculturation) = 13

Interventions incluses = 82

- Transtheoretical model (TTM) = 31
- Social cognitive theory (SCT) = 16
- Planned Behavior theory (PBT) = 8
- Self-determination theory (SDT) = 5
- Protection motivation theory (PMT) = 1

- 1 théorie = 61
- 2 théories = 14 (dont 2 sans TTM)
- 3 à 5 théories = 7 (dont 0 sans TTM)

Présence de séances d'activité physiques supervisées

- 14 (16%)

Durée de l'intervention

- Critère non applicable (n = 17) / critère applicable (n = 67) : 24,0 semaines

Nombre total de séances

- Critère non applicable (n = 28) / critère applicable (n = 56) : 13,6 séances

Fréquence des séances

- Critère non applicable (n= 28) / critère applicable (n =56) : 1,1 séance par semaine

1 mode d'intervention (n = 44) (52%)

- Face à Face (n = 18)
- Brochures (n = 12)
- Site internet (n = 9)
- Messages « Informatique/internet » (n = 4)
- Podcast (n = 1)

2 modes d'intervention (n= 28)

- Face à face + Téléphone (n = 14)
- Face à face + Brochures (n= 5)
- Téléphone + Site internet (n = 3)
- Téléphone + Brochure (n = 2), Face à face + Site internet (n = 2)
- Site internet + Brochure (n= 1), Messages « informatique/internet » + Fiches AP (n = 1)

3 modes d'intervention (n = 10)

- Face à face + Téléphone + Site internet (n = 4)
- Face à face + Brochures + Site internet (n = 2)
- Face à face + téléphone + Brochure (n = 1), Face à face + Téléphone + SMS (n = 1), Site internet + Téléphone + Brochure (n = 1), Site internet + Vidéos + Brochures (n = 1)

4 modes d'intervention (n = 1)

- Face à face + Téléphone + Messages « Informatique/internet » + Brochures

5 modes d'intervention (n = 1)

- Face à face + Téléphone + Brochures + Vidéos + Cassettes audio

Activité physique = critère de jugement principal

- oui = 74 (89%)
- non = 10 (11%)

Nature de la comparaison entre groupe intervention et groupe contrôle

- aucune intervention = 18 (22%)
- intervention minimale = 36 (44%)
- intervention alternative = 13 (15%)
- intervention temps de contact = 17 (19%)

Mesure de l'activité physique

- auto-rapportée = 70 (83%)
- auto-rapportée + objective = 11 (13%)
- objective = 3 (4%)

Indicateur de l'activité physique

- durée = 46 (55%) / dépense énergétique = 22 (26%) / score (index) = 14 (17%) / counts = 2 (2%)

Suivi

- oui = 20 (24%)
- non = 64 (76%)

Nature de la comparaison entre groupe intervention et groupe contrôle

- suivi 1 = +3 mois après intervention
- suivi 2 = +4 mois après intervention (n = 4)
- suivi 3 = +5 ans après intervention (n = 1)

Critères CONSORT (Boutron et al., 2008)	Oui	Non	Non applic
Participants (Eligibility criteria for participants and the settings and locations where the data were collected)	**81 (96%)**	3 (4%)	
Interventions (Precise details of both the experimental treatment and comparator)	**70 (83%)**	14 (17%)	
Interventions standardized (interventions were standardized)	**64 (76%)**	20 (24%)	
Objectives (Specific objectives and hypotheses (critere jugement principal))	**74 (88%)**	10 (12%)	
Sample size (How sample size was determined When applicable, details of whether and how the clustering by care providers or centers was addressed)	41 (49%)	**43 (51%)**	
Randomization (Method used to generate the random allocation sequence, including details of any restriction (e.g., blocking, stratification) When applicable, how care providers were allocated to each trial group)	**50 (60%)**	34 (40%)	
Blinding (Whether or not those administering co-interventions were blinded to group assignment)	24 (29%)	**57 (67%)**	3 (4%)
Participant flow chart (for each group, report the numbers of participants randomly assigned, receiving intended treatment, completing the study protocol, and analyzed for the primary outcome)	**57 (68%)**	27 (32%)	
Care providers (care providers or centers performing the intervention in each group and the number of patients treated by each care provider)	**35 (42%)**	27 (32%)	22 (26%)
Baseline data (When applicable, a description of care providers (case volume, qualification, expertise, etc.) and centers (volume) in each group)	**59 (70%)**	25 (30%)	
Numbers analyzed (Number of participants (denominator) in each group included in each analysis and whether analysis was by “intention-to-treat”; state the results in absolute numbers when feasible (e.g., 10/20, not 50%)).	31 (37%)	**53 (63%)**	

Nombre moyen de critères remplis par les interventions: 5,77 (ET = 2,71)

Critères (theory coding scheme) Michie et Prestwich (2010)	Oui	Non
Construct mentioned (Evidence that the psychological construct relates to (correlates/predicts/causes) behaviour should be presented within the introduction or method (rather than the Discussion))	**73 (87%)**	11 (13%)
Theory used to select recipients for the intervention (Participants were screened/selected based on achieving a particular score/level on a theory-relevant construct/predictor)	19 (23%)	**65 (77%)**
Theory used to develop intervention techniques (The intervention is explicitly based on a theory or predictor or combination of theories or predictors)	**78 (93%)**	6 (7%)
Theory used to tailor intervention techniques to recipients (The intervention differs for different sub-groups that vary on a psychological construct (e.g., stage of change) or predictor at baseline)	32 (38%)	**52 (62%)**
All intervention techniques are explicitly linked to at least one theory-relevant construct (Each intervention technique is explicitly linked to at least one theory-relevant construct/predictor)	29 (35%)	**55 (65%)**
At least one, but not all, of the intervention techniques are explicitly linked to at least one theory-relevant construct (At least one, but not all, of the intervention techniques are explicitly linked to at least one theory-relevant construct)	34 (40%)	**50 (60%)**
Group of techniques are linked to a group of constructs/ predictors (A cluster of techniques is linked to a cluster of constructs)	34 (40%)	**50 (60%)**
All theory-relevant constructs are explicitly linked to at least one intervention technique (Every theoretical construct within a stated theory, or every stated predictor, is linked to at least one intervention technique)	21 (25%)	**63 (75%)**
At least one, but not all, of the theory relevant constructs are explicitly linked to at least one intervention technique (At least one, but not all, of the theoretical constructs within a stated theory or at least one, but not all, of the stated predictors are linked to at least one intervention technique)	**47 (56%)**	37 (44%)
Theory-relevant constructs are measured ((a) At least one construct of theory mentioned in relation to the intervention is measured POST-INTERVENTION, b) At least one construct of theory mentioned in relation to the intervention is measured PRE AND POST-INTERVENTION)	**60 (71%)**	24 (29%)

Nombre moyen de critères remplis par les interventions: 4,29 (ET = 2,33)

Comparaison inter-théories mesures (avant – après)

- Effet significatif (faible) : Cohen's *d* (82 interventions) = 0.31 (95% CI [0.24, 0.37])
- Hétérogénéité significative : Q = 348.52, p < .001, I^2 = 76.85%

- Pas de différences significatives entre les théories : Qb = 5,26 (p > .05)

Théories	n	d [95% CI]	I^2	Qw	Qb
					5.26
Self determination theory	5	0.61 [0.32, 0.89]	51.28	8.21	
Social cognitive theory	16	0.42 [0.28, 0.56]	42.89	26.26*	
Transtheoretical model	31	0.31 [0.20, 0.42]	80.13	151.01***	
Theory of planned behavior	8	0.26 (0.03, 0.48]	83.22	41.72***	

- Effet significatif monothéorie > multi-théories : Qb = 4,03 (p < .05)

Théorie	Nombre d'interventions	*d*	IC 95%
1 théorie	60	0.35	0.26-0.43
Combinée	21	0.21	0.11-0.32

Sur le plan théorique

- Self determination theory, social cognitive theory, transtheoretical model, theory of planned behavior efficace pour augmenter le niveau d'AP (= Prestwich et al., 2014, HP)

=> **overlaps théoriques des modèles socio-cognitifs (Gourlan et al., 2015)**

- Monothéorie > Multi = Prestwich et al. (2014, HP) et ≠ Glanz et Bishop (2010, ARPH)

=> **techniques de changement de comportement (Michie et al., 2013, ABM)**

Mais

- 50% des études basées sur le modèle trans-théorique de Prochaska et al. (2009, HP) => raisons ?

- 46% des études recensées par Pubmed sans interventions ancrées théoriquement => théorie utile ?

- 47% des études recensées par Psychinfo sans mesure de l'effet => processus ou intervention ?

Bibliographie

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Lipsey, M. W., & Wilson, D. B. (2001). Practical meta-analysis. Thousand Oaks, CA: Sage Publications.

Solution d'une intervention en prévention primaire pour augmenter la pratique d'AP

Intervention visant un changement durable de comportements
Intervention basée sur un modèle théorique
(e.g., Glanz & Bishop, 2010, ARPH; Nigg & Paxton, 2008, book; Biddle et al., 2014, PM)

Principaux modèles théoriques (Glanz & Bishop, 2010; Nigg & Paxton, 2008)

Health Belief Model (HBM: Rosenstock, 1974, HEM)
Social Cognitive Theory (SCT: Bandura, 1997, book)
Transtheoretical Model (TTM: Prochaska et, 2009, book)
Theory of Planned Behaviour (TPB: Ajzen, 1991, OBHDP)
Self-Determination Theory (SDT: Deci et Ryan, 2000, PI)
Protection Motivation Theory (PMT: Rogers, 1983, book)
Health Action Process Approach (HAPA: Schwarzer, 1992, book)

Certains modèles plus efficaces que d'autres pour augmenter la dose d'activité physique?