Systemaattisesta kirjallisuuskatsauksesta - näkökulma

- ICF Turku study group: Fysiatrit & dosentit Mikhail Saltychev, Katri Laimi, TYKS

Do aerobic exercises really improve aerobic capacity of stroke survivors? A systematic review and meta-analysis

Mikhail SALTYCHEV, Tuulikki SJöGREN, Esa BäRLUND, Katri LAIMI, Jaana PALTAMAA

Eur J Phys Rehabil Med 2015 Jan 9 [Epub ahead of print]

Effectiveness of myofascial release in treatment of chronic musculoskeletal pain: a systematic review

Clinical Rehabilitation
1–11
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DOI: 10.1177/0269215517732820
journals.sagepub.com/home/cre
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Katri Laimi[1], Annika Mäkilä[1], Esa Bärlund[2], Niina Katajapuu[2], Airi Oksanen[1], Valpuri Seikkula[1,3], Jari Karppinen[3] and Mikhail Saltychev[1]

Open Access Research

BMJ Open

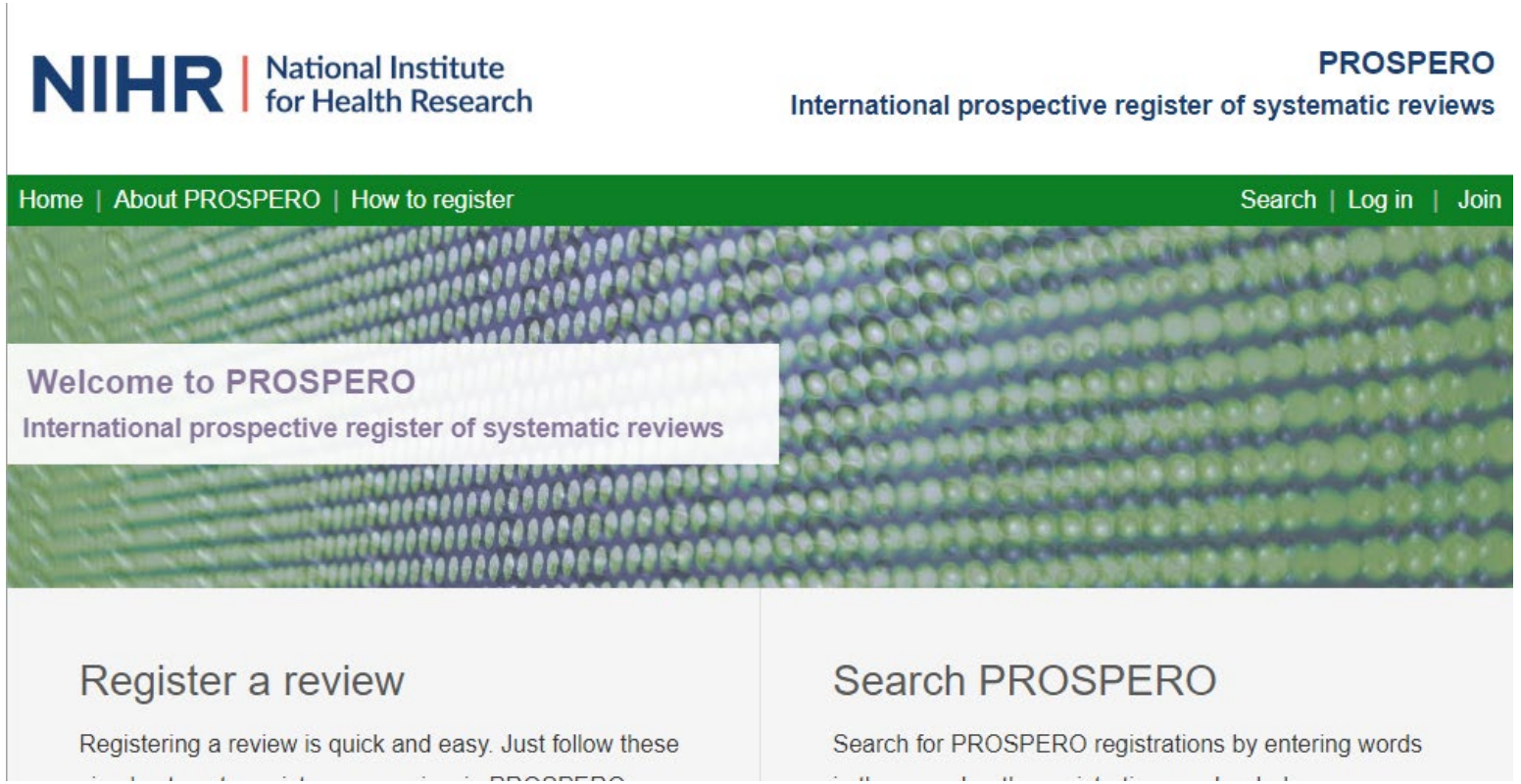
Progressive resistance training in Parkinson's disease: a systematic review and meta-analysis

Mikhail Saltychev,[1] Esa Bärlund,[2] Jaana Paltamaa,[3] Niina Katajapuu,[4] Katri Laimi[1]

Mikhail Saltychev, Niina Katajapuu, Esa Bärlund & Katri Laimi (2019) Psychometric properties of 12-item self-administered World Health Organization disability assessment schedule 2.0 (WHODAS 2.0) among general population and people with non-acute physical causes of disability – systematic review, Disability and Rehabilitation, DOI: 10.1080/09638288.2019.1643416

Follow the flowchart

Registration of upcoming review – e.g PROSPERO



PICOS

Systematic Reviews - Research Guide

https://libguides.murdoch.edu.au/systematic/PICO

Criteria for considering studies for this review were based on the PICO (Population, Intervention, Comparison, and Outcome) framework as follows:

- Patients: Adults with primary/idiopathic Parkinson's disease of any severity, excluding any other concurrent neurological condition.
- Intervention: Progressive resistance training defined as training which (A) consists of a small number of repetitions until fatigue, (B) allows sufficient rest between exercises for recovery and (C) increases the resistance as patient's ability to generate force
- Comparison: Progressive resistance training versus no treatment, placebo or other treatment in randomised controlled or controlled clinical trials.
- Outcome: Any outcome.

To cite: Saltychev M, Bärlund E, Paltamaa J, *et al*. Progressive resistance training in Parkinson's disease: a systematic review and meta-analysis. *BMJ Open* 2016;**6**:e008756. doi:10.1136/bmjopen-2015-008756

nitude of this effect? Criteria for considering studies for this review were based on PICO (Population, Intervention, Comparison, and Outcome) framework as follows:

— population: adult stroke survivors;

— intervention: training defined as aerobic due to submaximal load level during exercises;

— comparison: randomized controlled trials (RCTs) or clinical controlled trials (CCTs) of aerobic training compared to various training types or no training;

— outcome: change in aerobic capacity, measured as VO_2max.

Cite this article as

Saltychev M, Sjögren T, Bärlund E, Laimi K, Paltamaa J. Do aerobic exercises really improve aerobic capacity of stroke survivors? A systematic review and meta-analysis. Eur J Phys Rehabil Med 2016 April;52(2):233-43.

Onko muuta kuin PICO?

SPICE or SPIDER for Qualitative or Quantitative Studies

Two other mnemonics may also be used to create protocols for both qualitative and quantitative studies - **SPIDER** and **SPICE**.

SPIDER can be used for both qualitative and quantitative studies:

S	PI	D	E	R
Sample	**Phenomenon of Interest**	**Design**	**Evaluation**	**Research Type**
Sample size may very in qualitative and quantitative studies	Phenomena of Interest include behaviours, experiences and interventions	Design influences the strength of the study analysis and findings	Evaluation outcomes may include more subjective outcomes - such as views, attitudes, etc.	Research types include qualitative, quantitative or mixed method studies

Within social sciences research, **SPICE** may be more appropriate for formulating research questions:

S	P	I	C	E
Setting	**Perspective**	**Intervention**	**Comparison**	**Evaluation**
Setting is the context for the question - ***where***	Perspective is the users, potential users, or stakeholders of the service - ***for whom***	Intervention is the action taken for the users, potential users, or stakeholders - ***what***	Comparison is the alternative actions or outcomes - ***what else***	Evaluation is the result or measurement that will determine the success of the intervention - ***what result*** or ***how well***

Lähde: Murdoch University. Systematic Reviews – Research Guide. Luettavissa: <https://libguides.murdoch.edu.au/systematic/PICO>.

Methley *et al. BMC Health Services Research* (2014) 14:579
DOI 10.1186/s12913-014-0579-0

RESEARCH ARTICLE Open Access

PICO, PICOS and SPIDER: a comparison study of specificity and sensitivity in three search tools for qualitative systematic reviews

Abigail M Methley[1*], Stephen Campbell[1,4], Carolyn Chew-Graham[2], Rosalind McNally[3] and Sudeh Cheraghi-Sohi[1,4]

Tiedonhaun tärkein tavoite – hyvä kattavuus <- hyvä hakustrategia

Table 3. Search strategy (online content)

Database	Search conditions
CENTRAL	• #1 MeSH descriptor: [Exercise] explode all trees • #2 MeSH descriptor: [Physical Fitness] explode all trees • #3 MeSH descriptor: [Hemiplegia] explode all trees • #4 MeSH descriptor: [Paresis] explode all trees • #5 MeSH descriptor: [Stroke] explode all trees • #6 MeSH descriptor: [Intracranial Hemorrhages] explode all trees • #7 MeSH descriptor: [Intracranial Embolism and Thrombosis] explode all trees • #8 MeSH descriptor: [Brain Infarction] explode all trees • #9 MeSH descriptor: (#1 or #2) and (#3 or #4 or #5 or #6 or #7 or #8) • #10 "aerobic":ti,ab,kw or "exercise" or "treadmill" or "jogging" or "walking" or "running" or "dancing" or "climbing" or "rower" or "stair*" or "bicycl*" or "cycling" or "skiing" or "skating" or "swimming" or "rowing" or "circuit":ti or ("heart rate" and ("maxim*" or "submax*")) (Word variations have been searched) 26059 • "11 "hemip*" or "stroke" or "cerebral hemorrhage":ti (Word variations have been searched) • #12 #10 and #11 • #13 #9 or #12 in Trials
MEDLINE	• #1 ("Exercise"[Mesh] OR "Physical Fitness"[Mesh]) AND ("Hemiplegia"[Mesh] OR "Stroke"[Mesh] OR "Cerebrovascular Disorders"[MeSH] OR "cerebral hemorrhage"[MeSH] OR "Intracranial Embolism and Thrombosis"[Mesh]) • #2 aerobic [TI/AB/OT] OR exercise*[TI] OR treadmill[TI] OR jogging[TI] OR walking[TI] OR climbing[TI] OR rower[TI] OR stair*[TI] OR bicycl*[TI] cycling[TI] OR skiing[TI] OR skating[TI] OR swimming[TI] OR rowing[TI] OR circuit[TI] OR running[TI] OR dancing[TI] OR ("heart rate" [TI] AND (maxim*[TI] OR submaxim*[TI] OR sub-maxim*[TI])) • #3 hemip*[TI] OR stroke[TI] OR "cerebral hemorrhage" [TI] • #4 #1 OR (#2 AND #3) AND (Clinical Trial[ptyp] OR Randomized Controlled Trial[ptyp] AND hasabstract[text] AND "adult"[MeSH Terms]))
EMBASE	• #1: ('aerobic exercise'/exp OR 'fitness'/exp) AND ('hemiplegia'/exp OR 'cerebrovascular accident'/exp) AND ('brain hemorrhage'/de OR 'brain ischemia'/de OR 'cerebrovascular accident'/de OR 'cerebrovascular disease'/de OR 'hemiparesis'/de OR 'hemiplegia'/de OR 'paresis'/de) • #2: aerobic:ti OR aerobic:ab OR exercise:ti OR treadmill:ti OR jogging:ti OR walking:ti OR running:ti OR dancing:ti OR climbing OR rower:ti OR stair*:ti OR bicycl*:ti OR cycling:ti OR skiing:ti OR skating:ti OR swimming:ti OR rowing:ti OR circuit:ti OR ('heart rate' NEXT maximum):ti AND (hemip*:ti OR stroke:ti OR 'cerebral hemorrhage':ti) • #3: #1 OR #2 • #4 : #3 AND ('controlled clinical trial'/de OR 'randomized controlled trial'/de) AND ('brain infarction'/de OR 'brain ischemia'/de OR 'cerebrovascular accident'/de OR'cerebrovascular disease'/de OR 'hemiparesis'/de OR 'hemiplegia'/de) AND 'article'/it
	• S1: ((MM "Aerobic Exercises+") OR (MH "Physical Fitness+")) AND ((MM "Hemiplegia+") OR (MH "Stroke+") OR (MH "Intracranial Hemorrhage+") OR (MH "Intracranial Embolism and Thrombosis+"))

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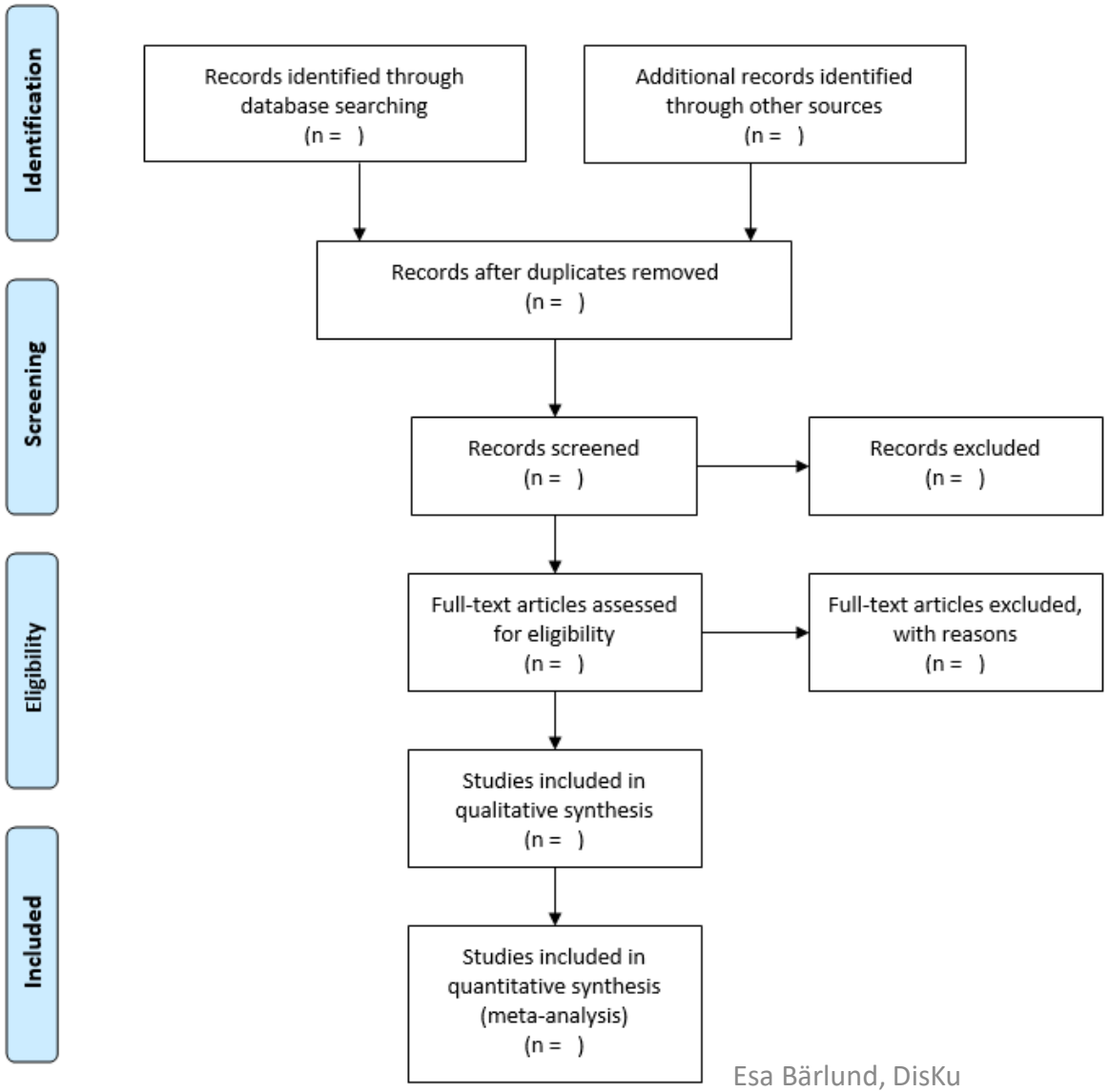
Eur J Phys Rehabil Med 2015 Jan 9 [Epub ahead of print]

Suomeksi löytyy selkeä ja havainnollinen info: Isojärvi, J. 2011. Tutkimuskysymyksestä hakustrategiaksi: PICO-asetelma informaatikon työkaluna.

https://docplayer.fi/16355927-Tutkimuskysymyksesta-hakustrategiaksi-pico-asetelma-informaatikon-tyokaluna.html

PRISMA 2009 Flow Diagram



Follow the PRISMA guideline!

http://www.prisma-statement.org/

Critical appraisal, evaluating bias – harhaako vain?

Table 2 Risk of bias of included studies

Study	Random sequence generation	Allocation concealment	Blinding of participants and personnel	Blinding of outcome assessment	Incomplete outcome data	Selective reporting	Other sources of bias	Total risk of bias
Allen *et al*[11]	Low	Low	High	Low	Low	Low	Low	Low
Bloomer *et al*[12]	Low	Unclear	High	Low	Low	Low	Low	Low
Bridgewater *et al*[13]	High	Unclear	High	High	Low	Low	Low	High
Combs *et al*[14]	Low	Low	High	Low	Low	Low	Low	Low
Corcos *et al*[15]	Low	Low	High	Low	Low	Low	Low	Low
Cruise *et al*[16]	High	Unclear	High	High	Low	Low	Low	High
DiFrancisco-Donoghue *et al*[17]	Low	Unclear	High	High	Low	Low	Low	Low
Hass *et al*[18]	Low	Unclear	High	High	Low	Low	Low	Low
Hirsch *et al*[19]	High	Unclear	High	High	Low	Low	Low	High
Paul *et al*[20]	Low	Unclear	High	Low	Low	Low	Low	Low
Schilling *et al*[21]	Low	Unclear	High	High	Low	Low	Low	Low
Shulman *et al*[22]	Low	Low	Low	Low	Low	Low	Low	Low

Cochrane:

- https://handbook-5-1.cochrane.org/chapter_8/8_assessing_risk_of_bias_in_included_studies.htm
- https://www.ncbi.nlm.nih.gov › books › bin › appf-fm1

Työkaluja löytyy esim. : https://joannabriggs.org/critical_appraisal_tools

Data extraction – building tables

Table 1 Descriptive characteristics of included studies

Study/year/country	Cases/controls, N (% men) Baseline	Follow-up	Age *	Case treatment	Intensity and duration	Control treatment	Response to treatment
Allen 2010 Australia	24 (54)/24 (54)	21/24	66/68	Progressive lower limb strengthening and balance exercises (a monthly exercise class, remaining exercise sessions at home). Standardised falls prevention advice (booklet)	40–60 min 3 times per week for 6 months	Usual care. Standardised falls prevention advice (booklet)	Insignificant difference
Bloomer 2008 USA	8 (50)/8 (50)	6/7	61/57	Three sets of 5–8 repetitions: leg press, leg curl and calf press. Increased weight by 5–10% when 8 repetitions were completed for all 3 sets	Two times per week for 2 months	Usual activity	Positive
Bridgewater 1997 Australia	13 (69)/13 (54)	13/13	67/66	15 min warm-up. Trunk muscles (back extensors and abdominals): 10 repetitions of 7 s isometric contractions with 7 s rest. Progression: as individual ability and improvement allowed	Two times per week for 3 months	Usual activity and 'interest talks' on health issues Once every 3 weeks	Positive
Combs 2013	17 (65)/14 (71)	11/11	67/68	15 min warm-up. Boxing circuit, endurance. Progression: self-progressed by completing	24–36×90 min for 3 months	Strengthening, endurance and balance exercises	Positive

Lopuksi: Ja kun tehdään systemaattista katsausta, toivotaan saatavan vastaus myös sille että kannattaako …

Table 3 Results of meta-analyses

	Cases, mean (SD)			Controls, mean (SD)			Effect size			Egger's regression	
Outcome (units), study	Baseline	Follow-up	N	Baseline	Follow-up	N	Raw mean difference	95% CI	I^2 (%)	Intercept	95% CI
Fast walking speed (ms)							0.06	0.02 to 0.11	61	−3.27	−69.0 to 62.4
Allen *et al*[11]	1.47 (0.38)	1.61 (0.35)	21	1.54 (0.35)	1.48 (0.43)	24	0.2	−0.001 to 0.40			
Paul *et al*[20]	–	0.02 (0.16)*	6	–	0.01 (0.19)*	9	0.01	−0.18 to 0.2			
Shulman *et al*[22]†	0.84 (0.05)	0.84 (0.05)	22	0.85 (0.05)	0.79 (0.05)	22	0.06	0.03 to 0.09			
Comfortable walking speed (ms)							0.03	0.01 to 0.05	15	−1.34	−13.8 to 11.2

Huomioidaan etukäteen tutkimuskysymyksiä määritettäessä

Ja jotta asia ei näyttäisi liian synkältä, systemaattisen kirjallisuuskatsauksen vaiheet voidaan työstää sähköisessä järjestelmässä (Covidence), muutaman katsauksen voi tehdä ilmaiseksi.
Löytyy osoitteessa: <https://www.covidence.org/home>.