



Sport & psychische Gesundheit

Dr. med. Christian Imboden EMBA

Continuum: Psychiatrie & Psychotherapie im Fokus
Zürich, 22. Juni 2023



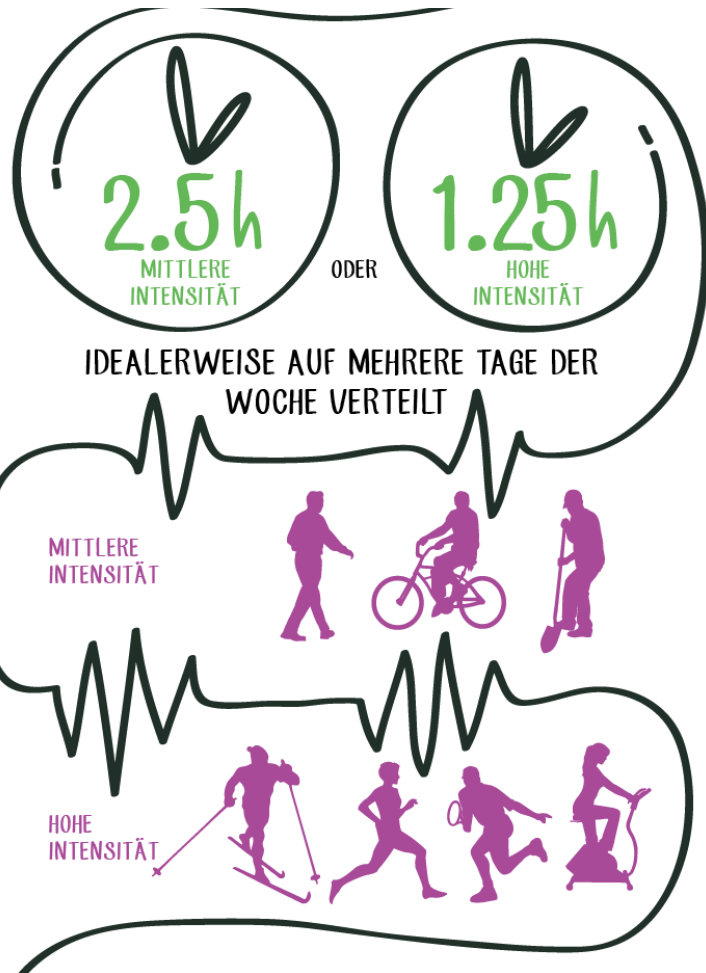
PRIVATKLINIK WYSS

SEIT 1845

Disclosure

- **Honorare** (Referate, Advisory Boards)
 - Pharma: Schwabe, Lundbeck, OM Pharma, Servier
 - Swiss Sport Integrity
 - Berner Fachhochschule
 - Schweizerische Gesellschaft für Psychiatrie & Psychotherapie (SGPP)
- **Reisespesen**
 - Schwabe, OM Pharma
- **Weitere relevante Interessebindungen**
 - Gründungsmitglied & Präsident Schweiz. Gesellschaft für Sportpsychiatrie und -psychotherapie (SGSPP)
- **Beteiligungen**
 - YLAH – Blended Psychotherapy
 - Advisory Board und Investor

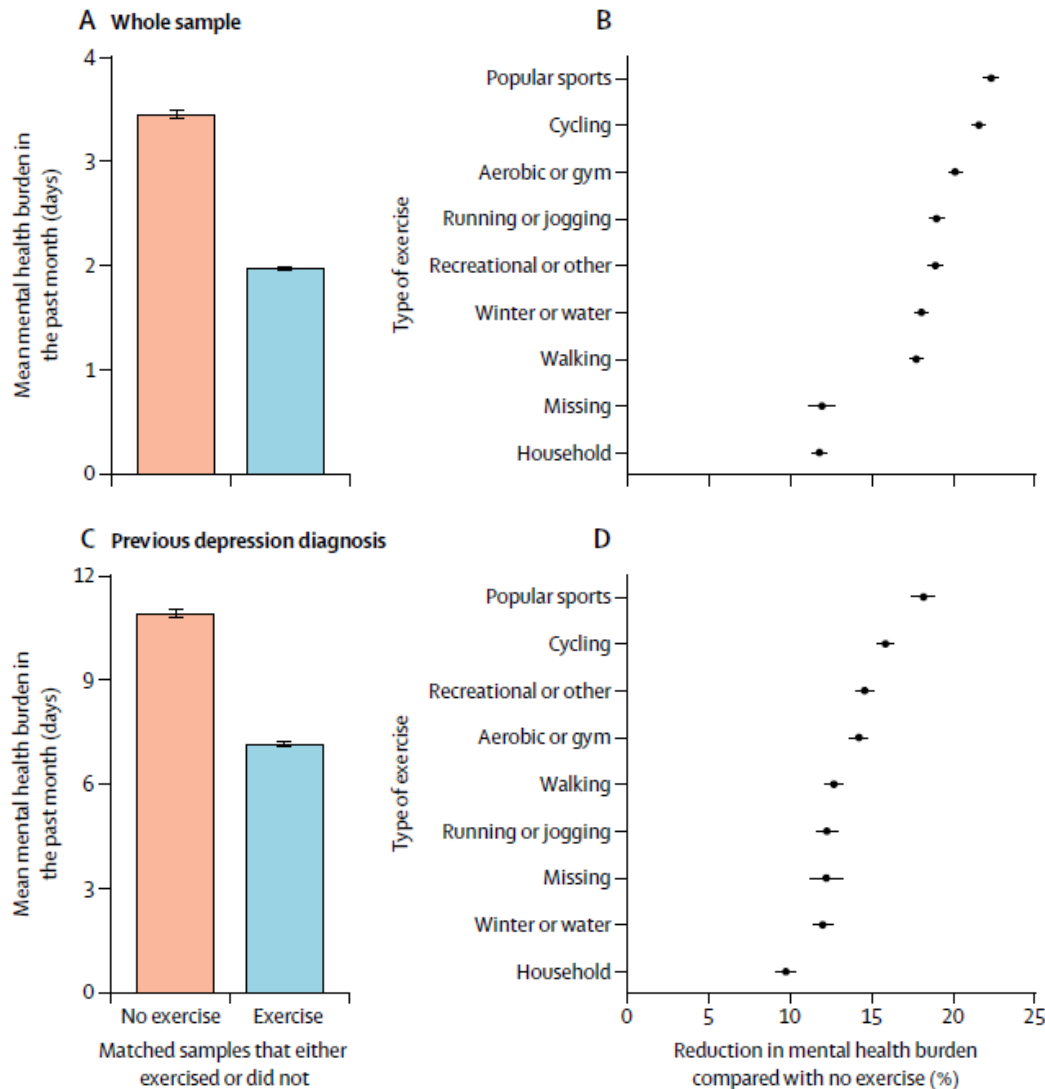
Empfehlungen: Gesundheitswirksame Bewegung



Dosis-Wirkungskurve



Psychische Gesundheit & Sport



- Querschnittstudie USA
- $n = > 1.2$ Mio

Selbstauskunft:

- Sportliche Aktivität
- psychische Belastung (mental health burden)

Information sheet

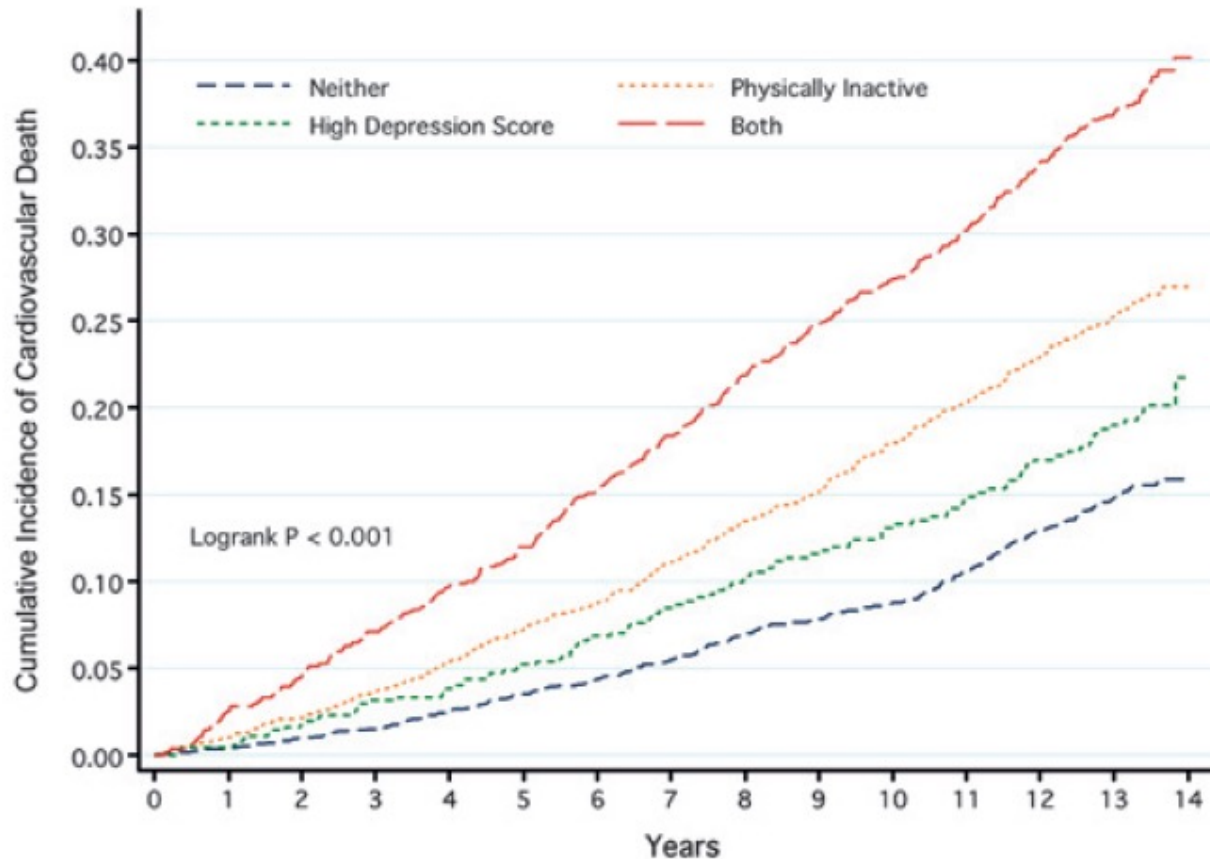
Premature death among people with severe mental disorders¹

Key facts

- People with severe mental disorders on average tend to die earlier than the general population. This is referred to as premature mortality. There is a 10-25 year life expectancy reduction in patients with severe mental disorders.
- The vast majority of these deaths are due to chronic physical medical conditions such as cardiovascular, respiratory and infectious diseases, diabetes and hypertension. Suicide is
- **The majority of deaths of patients with severe mental illness that are due to physical medical conditions are preventable with more attentive checks for physical illness, side effects of medicines and suicidal tendencies-.**
- There is a 1.8 times higher risk of dying associated with depression. People with severe mental illness do not receive the same quality of physical health care as the general population.
- The majority of deaths of patients with severe mental illness that are due to physical medical conditions are preventable with more attentive checks for physical illness, side effects of medicines and suicidal tendencies-.

Depressive symptoms, physical inactivity and risk of cardiovascular mortality in older adults: the Cardiovascular Health Study

Sithu Win,¹ Kapil Parakh,¹ Chete M Eze-Nliam,² John S Gottdiener,³ Willem J Kop,³ Roy C Ziegelstein¹



«...a longitudinal study with 5'888 individuals from US communities
[...] **physical activity was associated with a 26% reduction in cardiovascular mortality.** This rate was similar in people with and without established coronary heart disease”

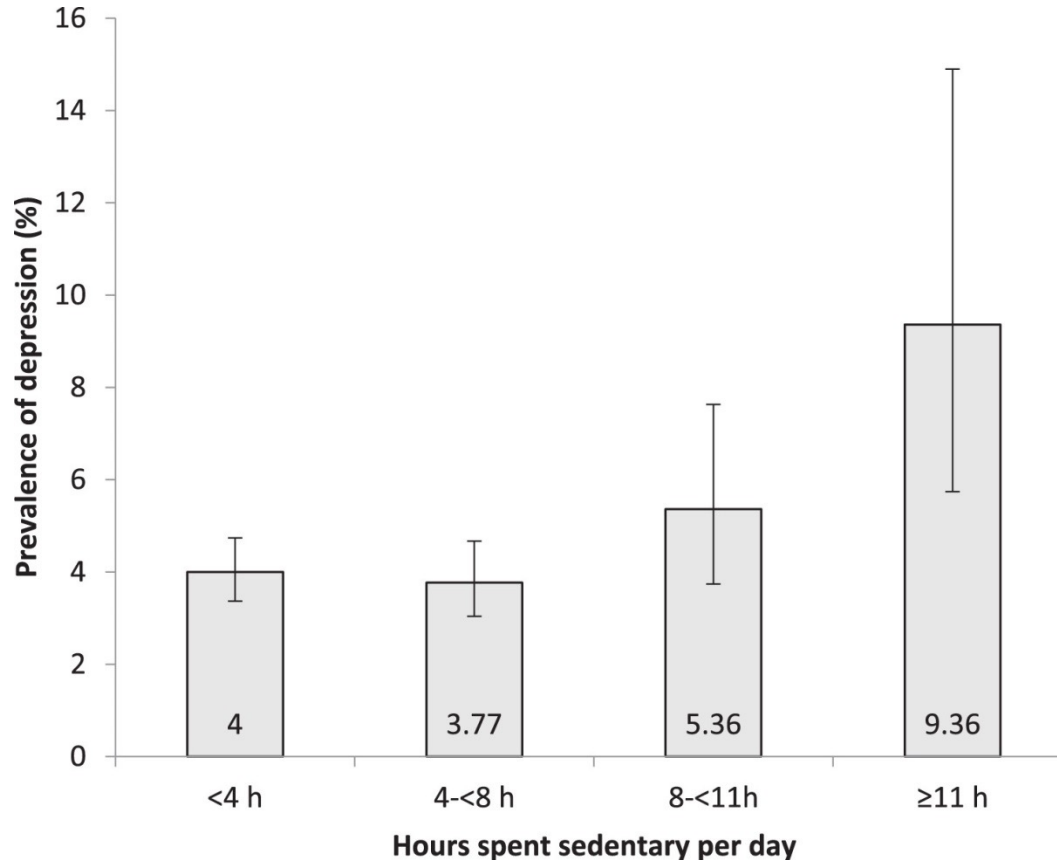
Inhalte

- Effekte von Sport bei Depression
- Effekte bei anderen psychischen Erkrankungen
 - Angststörungen
 - Abhängigkeitserkrankungen
 - Schizophrenie
- Neurobiologische Wirkung von Sport
- Umsetzung in der klinischen Praxis

Sport & Depression



Depression & Körperliche Inaktivität



- Querschnittsstudie
- $N=42'469$
- Multinationale Kohorte

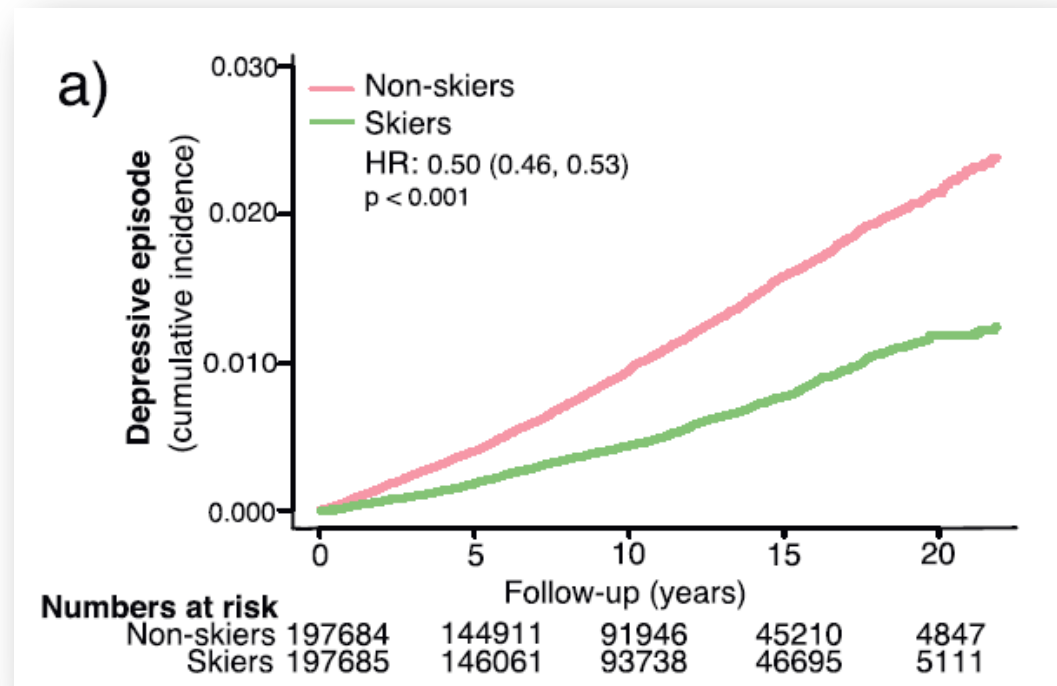
Stubbs et al: Relationship between sedentary behavior and depression: A mediation analysis of influential factors across the lifespan among 42,469 people in low- and middle-income countries, JAD 2018

Bewegung (Langlauf) und Depressionsrisiko

- Beobachtungsstudie über 21 Jahre
- N=395'369
 - 30-60km Langlaufrennen
 - Matched controls
- Swedish National Patient Registry



Vasaloppet: Grösstes Skirennen der Welt

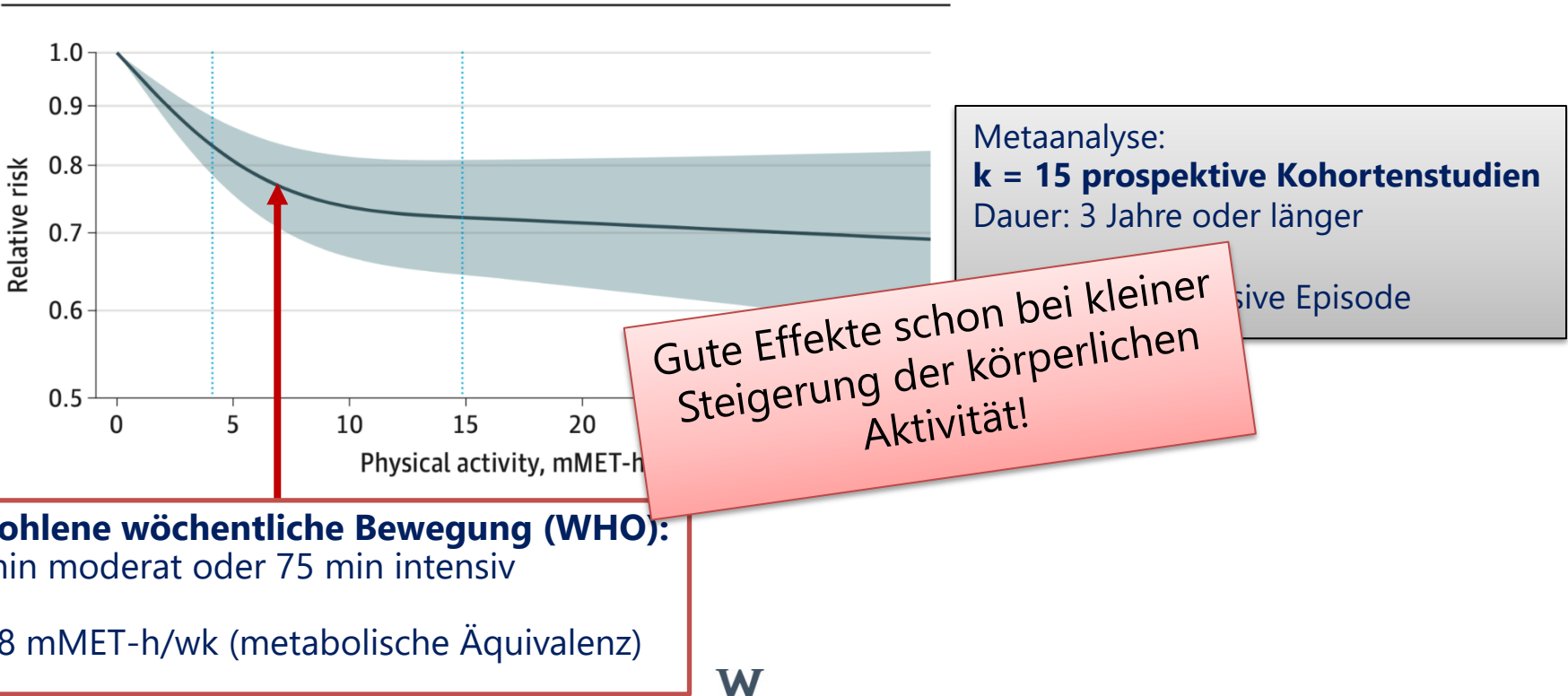


Association Between Physical Activity and Risk of Depression

A Systematic Review and Meta-analysis

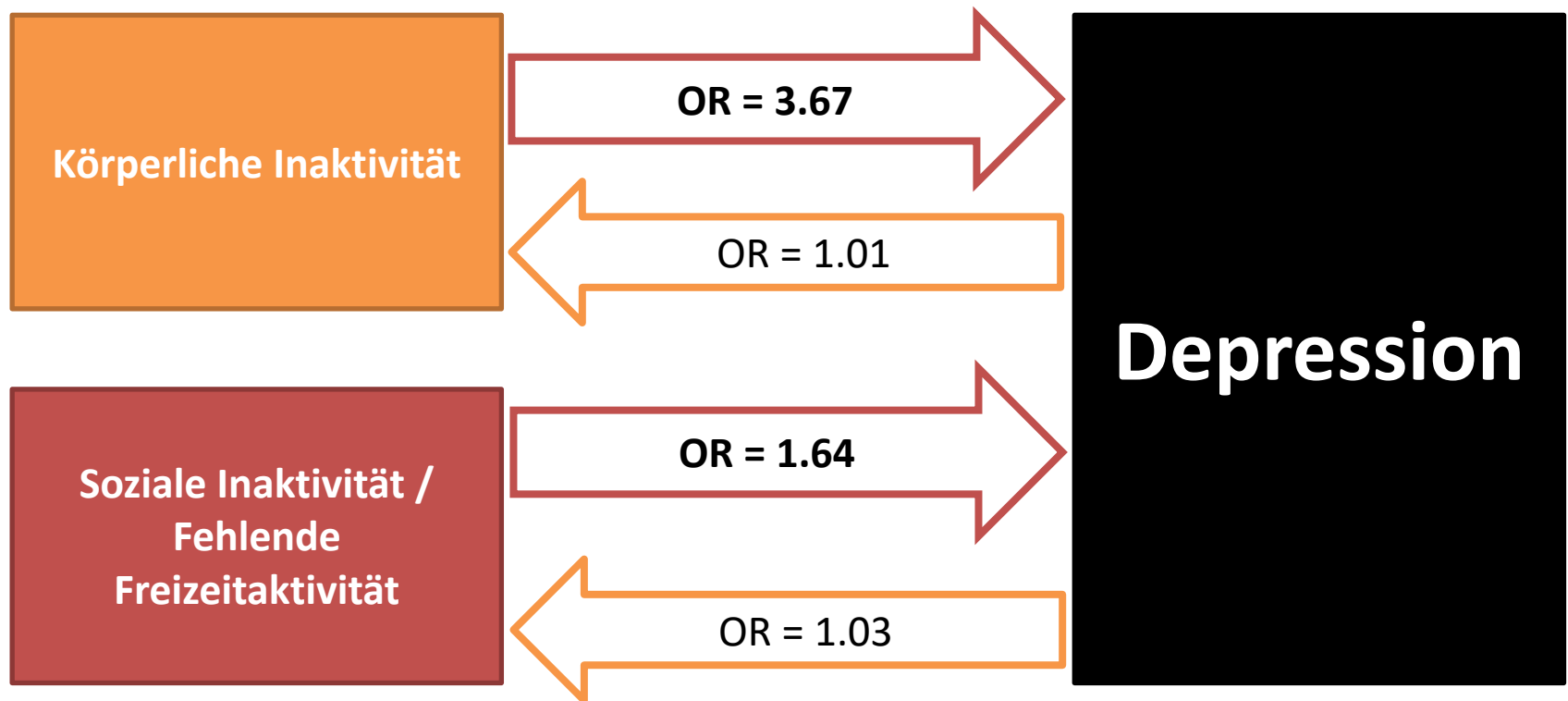
Matthew Pearce, PhD; Leandro Garcia, PhD; Ali Abbas, PhD; Tessa Strain, PhD; Felipe Barreto Schuch, PhD; Rajna Golubic, PhD; Paul Kelly, PhD; Saad Khan, MB,BChir; Mrudula Utukuri, MB,BChir; Yvonne Laird, PhD; Alexander Mok, PhD; Andrea Smith, PhD; Marko Tainio, PhD; Søren Brage, PhD; James Woodcock, PhD

Figure 1. Association Between Physical Activity and Incidence of Depression



Dissecting the causal association between social or physical inactivity and depression: a bidirectional two-sample Mendelian Randomization study

Guorui Zhao^{1,2,3,7}, Zhe Lu^{1,2,3,7}, Yaoyao Sun^{1,2,3}, Zhewei Kang^{1,2,3}, Xiaoyang Feng^{1,2,3}, Yundan Liao^{1,2,3}, Junyuan Sun^{1,2,3}, Yuyan Zhang^{1,2,3}, Yu Huang⁴ and Weihua Yue^{1,2,3,5,6}



Zhao et al., Translational Psychiatry 2023

Depression & Sport

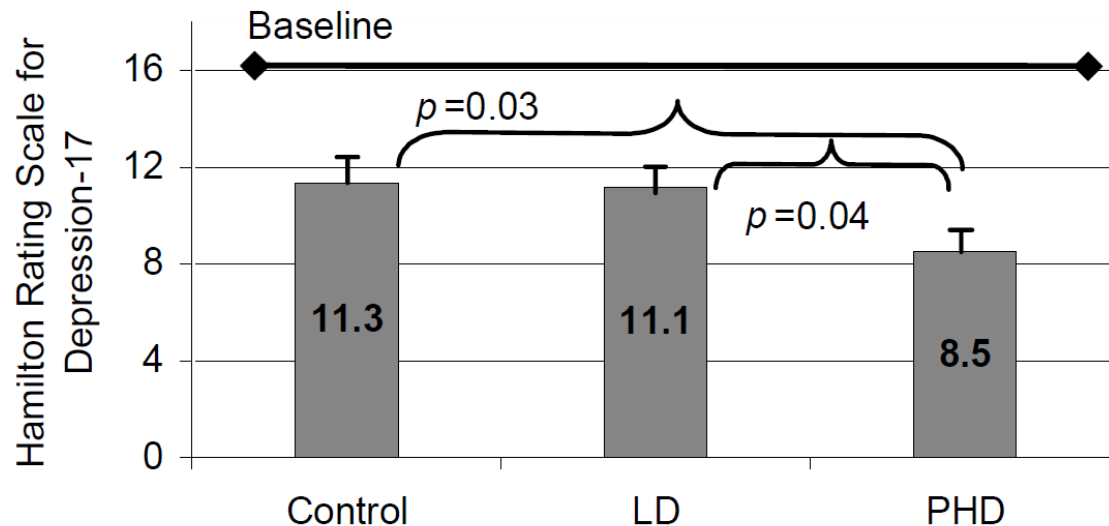


Figure 4. Twelve-week responses by total energy expenditure. Results for combined low dose (LD) and public health dose (PHD) indicated a significant difference between the control group and PHD ($p=0.03$), and between low-dose (LD) and PHD groups ($p=0.04$). There was no significant difference between the control and LD groups.

Aerobes Training

12 Wochen

3x/Woche

LD (low dose):

7kcal/kg/week

PHD (public health dose): 1

7.5 kcal/kg/week

N=80

Physical Activity for the Treatment and Prevention of Depression: A Rapid Review of Meta-Analyses

*Körperliche Aktivität für die Behandlung und
Prävention der Depression: Übersichtsarbeit von Meta-Analysen*

Meta-Analysen über den Effekt **regelmässiger körperlicher Aktivität über mehrere Wochen:**

- (i) **Diagnose einer Depression** oder Sy über cut-off (validierte Skalen)
- (ii) **Depressive Sy in Risikopopulationen** (einschliesslich körperlicher KH)

Präventive Effekte körperlicher Aktivität

→ **55 Meta-Analysen**

→ **Vorwiegend signifikante Effekte auf Depressive Sy / Inzidenz**

Exercise for depression (past 5 years)

no active controls

AUTHORS, YEAR	STUDY POPULATION	TYPES OF EXERCISE	CONTROLS	NUMBER OF STUDIES (K)	NUMBER OF PARTICIPANTS (N)	EFFECTS (95% CI)
Schuch et al., (2016)	Clinical MDD (k = 9) MDD and dysthymia (k = 2) Mixed or non-clinical (k = 14)	Any physical activity that is planned, structured, repetitive and purposive to improve or maintain physical fitness or health	No intervention, usual care, waitlist. Active controls (i.e., stretching) excluded	25	1.487	SMD = -0.98 (-1.28, -0.68)
	MDD and dysthymia (k = 2)					Larger effects in MDD and exercise at moderate or vigorous intensities.
	Mixed or non-clinical (k = 14)					Larger effects in MDD and exercise at moderate or vigorous intensities.
Kvam et al. (2016)	Diagnosis of unipolar depression, small proportion with minor depression/dysthymia	Aerobic, resistance, combined	Placebo treatment, usual care, no treatment, waitlist, pharmacotherapy, psychotherapy, alternative interventions. Active controls excluded	23	977	g = -0.68 (-0.92, -0.44) vs. psychotherapy: g = -0.22 (-0.65, 0.21) vs. antidepressant: g = -0.08 (-0.33, 0.18) High-quality* & vs. control: g = -0.26 (-0.61, 0.08)
Nebiker et al. (2018)	Diagnosis of depression or depression scale above threshold	Aerobic/endurance,	Placebo treatment, usual care, no treatment, pharmacotherapy, cognitive therapy. Active controls excluded	27	1.452	Endurance: SMD = -0.79 (90% CI: -1.10, -0.48); p < 0.00001 Neuromuscular: SMD = -1.14 (90% CI: -1.50, -0.78); p < 0.00001 Low risk of bias**: Moderate effects size (endurance), large effects (neuromuscular).
		resistance/neuromuscular				
Morres et al. (2019)	Clinical population, diagnosis of MDD	Aerobic	Any treatment (e.g., psychotherapy, medication) or condition (waitlist, no treatment). Active controls excluded	11	455	g = -0.79 (-1.01, -0.57) Low risk of bias**: g = -0.70 (-0.94, -0.45)
Carneiro et al. (2020)	Clinical diagnosis of depression or scores above threshold	Resistance with only minimal or no warm-up	No additional physical activity	4	253	Several combinations (2 primary outcomes in 2 studies (HDRS/BDI and HDRS/GDS; 2 studies used HDRS & CES-D): HDRS only: g = -0.281 (-1.05, 0.49) BDI/GDS: g = -0.602 (-1.39, 0.18) High heterogeneity reported.

Exercise & depressive Sy in physical diseases (1)

Chronic conditions

AUTHORS, YEAR	STUDY POPULATION	TYPES OF EXERCISE	CONTROLS	NUMBER OF STUDIES (K)	NUMBER OF PARTICIPANTS (N)	EFFECTS (95% CI)
Herring et al. (2012)	Sedentary non-depressed adults with chronic illness	Any kind of exercise-training. No combination with other intervention (i.e., educational)	Non-active comparator	90	10.534	Delta = -0.30 (-0.36, -0.25)
Beland et al. (2020)	Adults with a major non-communicable chronic disease and depressive symptoms at baseline	Aerobic exercise	Non-active TAU	24	4.111	SMD = -0.50 (-0.76, -0.25) Cardiac patients only: SMD = -0.67 (-0.99, -0.35)
Eng & Reime (2014)	Adults with a diagnosis of stroke	Any physical activity that is planned, structured, repetitive and purposive to improve or maintain physical fitness or health	Non-active or active comparator (low intensity)	13	1.022	SMD = -0.13 (-0.26, -0.01)
Zheng et al. (2019)	Adults with acute myocardial infarction	Exercise based cardiac rehabilitation	TAU or no control (non-RCTs; k = 2)	6	703	SMD = -0.61 (-1.12, -0.09)
Samartzis et al. (2013)	Adults with chronic heart failure	Experimental exercise group not specified.	TAU	13	3.425	g = -0.32 (-0.52, -0.13) Trend for higher effects of SSRI than exercise.
Tu et al. (2014)	Adults with heart failure	Aerobic, resistance and combinations including mind-body exercise.	TAU	16	3.226	SMD = -0.38 (-0.55, -0.21) Blinded trials only: SMD = -0.14 (-0.22, -0.17)
Narita et al. (2019)	Adults or adolescents with diabetes	Aerobic or resistance for ≥4 weeks	TAU including low-intensity exercise or education	13	962	SMD = -0.59 (-0.93, -0.24) Mean difference in BDI = -2.90 (-4.53, -1.28)

Cardiovascular disease



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Exercise & depressive Sy in physical diseases (2)

AUTHORS, YEAR	STUDY POPULATION	TYPES OF EXERCISE	CONTROLS	NUMBER OF STUDIES (K)	NUMBER OF PARTICIPANTS (N)	EFFECTS (95% CI)
Ensari et al. (2014)	Patients with multiple sclerosis	Exercise training	No-treatment controls	13	477	$g = -0.36 (-0.54, -0.18)$
Adamson et al. (2015)	Patients with neurologic disorders*	Aerobic, resistance, balance, mind-body and combinations	No intervention or low intensity exercise	23	1.324	$g = -0.28 (-0.41, -0.15)$ Larger effect if public-health physical activity recommendations were met: $g = -0.38$
Song et al. (2018)	Hemodialysis-patients	Aerobic, resistance and combinations, pilates, stretching	TAU	8	368	$SMD = -0.95 (-1.18, -0.73)$
Ferreira et al. (2020)	Patients with chronic kidney-disease	Aerobic, resistance, combination, breathing exercise	Active and passive control groups	6	282	vs. active control: $SMD = -0.66 (-1.00, -0.33)$ vs. passive control: Mean difference (BDI) = $-6.95 (-8.76, -5.14)$
Kelley et al. (2015)	Adults with arthritis	Aerobic, resistance or combination (≥ 4 weeks)	Non-active control	29	2.449	$g = -0.42 (-0.58, -0.26)$ Number needed to treat = 7 (6, 11)
Craft et al. (2012)	Cancer survivors	Aerobic, resistance, combinations (≥ 4 weeks)	TAU	15	1.371	$d = -0.22 (-0.43, -0.01)$
Brown et al. (2012)	Cancer survivors	Aerobic, resistance, yoga	Non-active controls	37	2.929	$d = -0.13 (-0.26, -0.01)$
Heissel et al. (2019)	Adults living with HIV	Aerobic, aerobic and resistance, yoga	Non-active controls	9	395	$SMD = -0.84 (-1.57, -0.11)$

Neurological dis.

Arthritis

Cancer

Kidney dis.

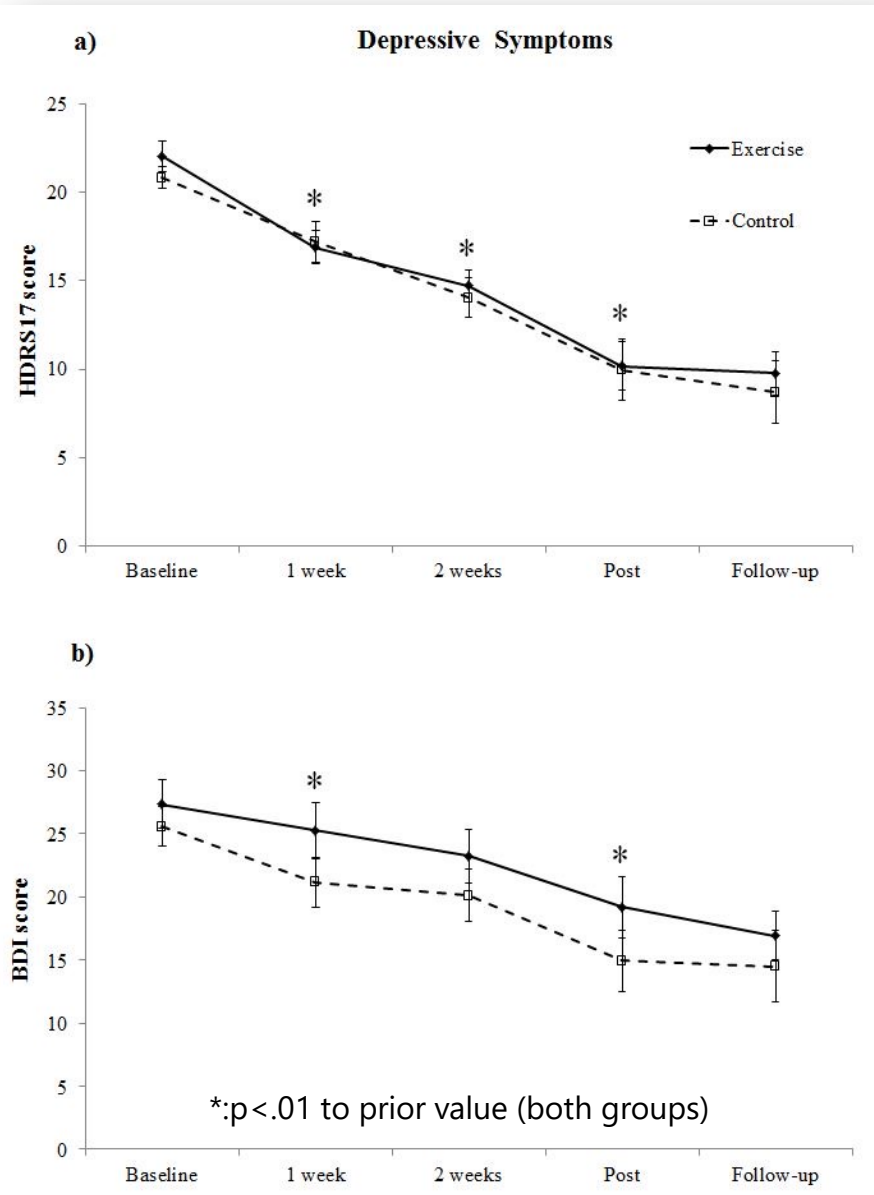
HIV

NIK WYSS

Nationale Versorgungsleitlinien unipolare Depression 2022

Empfehlung/Statement	Empfehlungs- grad
9-7 Patient*innen mit einer depressiven Störung und ohne Kontraindikation für körperliche Belastungen <u>sollen zu sportlichen Aktivitäten motiviert werden</u> , idealerweise innerhalb einer Gruppe.	↑↑
9-8 Patient*innen mit einer depressiven Störung und ohne Kontraindikation für körperliche Belastungen sollen zur <u>Teilnahme an einem strukturierten und supervidierten körperlichen Training</u> motiviert und bei der Umsetzung unterstützt werden.	↑↑

Sport & Depression: Inpatients n = 42



Interventions (3x/week, 6 weeks)

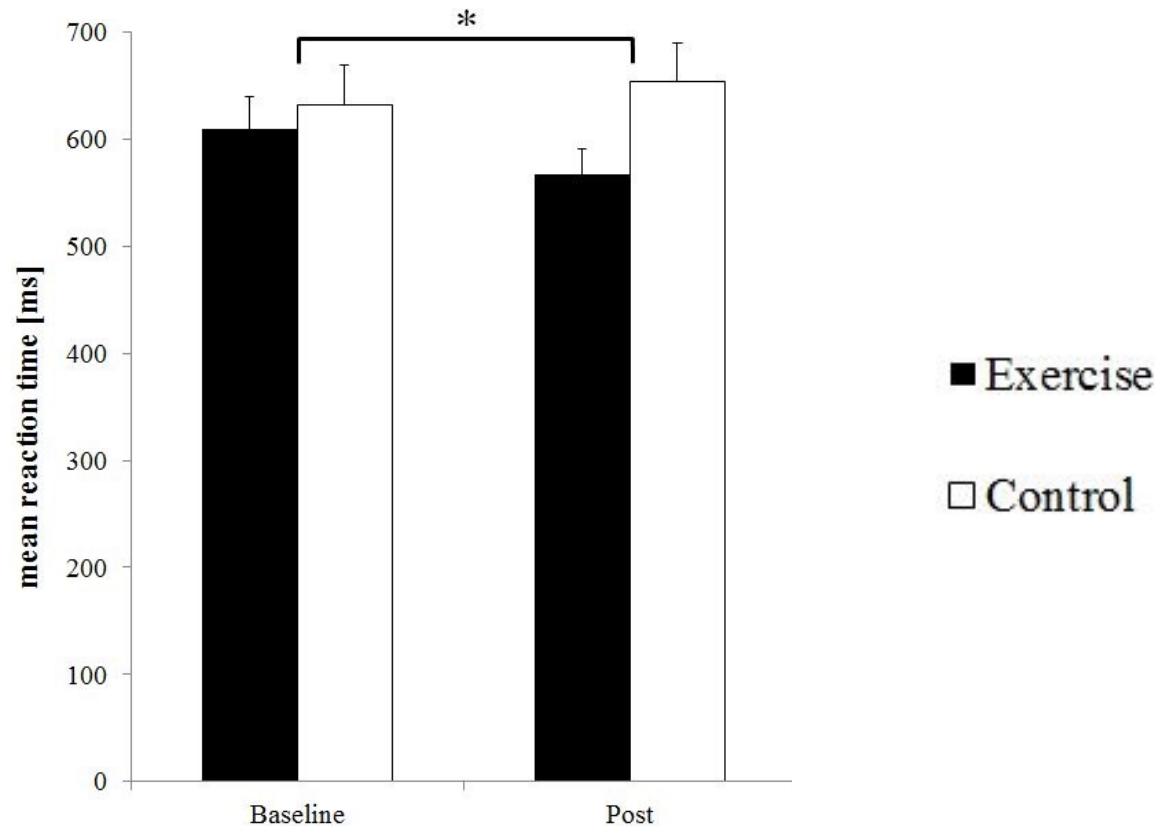
- **Exercise:** indoor cycling 40-50min (17.5kcal/kg)
- **Active control:** stretching

- Ceiling Effect? → Sehr wirksame multimodale Therapie auf Spezialstation
- Wirksame Kontrollintervention? (Aktive Kontrollgruppe)
- Antidepressive Wirkung von Sport überschätzt?
- Zu kleines Sample?

Verbesserung Arbeitsgedächtnis in Sportgruppe

n = 42, ITT

TAP: Arbeitsgedächtnis



*= time x group: $p=0.04$, $\eta^2=0.01$ (medium effect)



Systematic Review

Effects of Physical Exercise on Executive Function in Adults with Depression: A Systematic Review and Meta-Analysis

Falonn Contreras-Osorio ¹, Rodrigo Ramirez-Campillo ², Enrique Cerda-Vega ³, Rodrigo Campos-Jara ⁴, Cristian Martínez-Salazar ⁵, Rafael E. Reigal ⁶, Antonio Hernández-Mendo ⁶, Lara Carneiro ^{7,8} and Christian Campos-Jara ^{1,*}

Effektstärke:

(d, g, SMD)

≥0.2: klein

≥0.5: mittel

≥0.8: gross

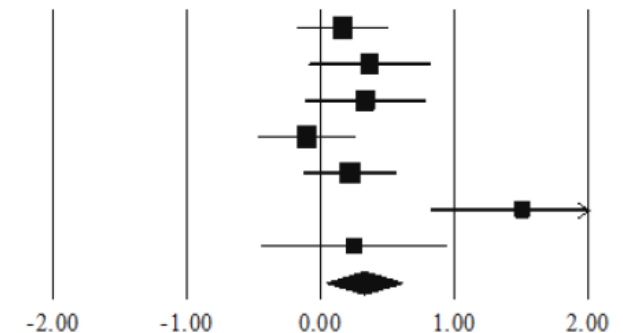
Effects on working memory

Study name

Statistics for each study

Hedges's g and 95% CI

	Hedges's g	Standard error	Variance	Lower limit	Upper limit	Z-Value	p-Value
Hoffman et al., 2008	0.167	0.173	0.030	-0.171	0.505	0.967	0.334
Krogh et al., 2009 (strenght vs. relaxation)	0.369	0.233	0.054	-0.088	0.826	1.584	0.113
Krogh et al., 2009 (aerobic vs. relaxation)	0.336	0.233	0.054	-0.120	0.792	1.443	0.149
Krogh et al., 2012	-0.102	0.185	0.034	-0.465	0.262	-0.550	0.583
Zhang and Chen, 2019	0.217	0.178	0.032	-0.133	0.566	1.216	0.224
Brüchle et al., 2021	1.506	0.351	0.123	0.819	2.193	4.296	0.000
Buschert et al., 2019	0.251	0.357	0.127	-0.449	0.950	0.702	0.482
	0.325	0.146	0.021	0.039	0.610	2.230	0.026



ES = 0.33

Favor control Favor experimental

Sport & Angst/Zwang



Körperliche Aktivität reduziert GAD-Risiko



Querschnittserhebung

Longitudinal (2 Jahre FU)

	Prevalent GAD Wave 1					Incident GAD Wave 2				
	Cases/ persons at risk	Crude OR (95% CI)	Model 1 OR (95% CI)	Model 2 OR (95% CI)	Model 3 OR (95% CI)	Cases/ persons at risk	Crude OR (95% CI)	Model 1 OR (95% CI)	Model 2 OR (95% CI)	Model 3 OR (95% CI)
PA										
Not meeting guidelines	406/2016	REF	REF	REF	REF	21/1610	REF	REF	REF	REF
Meeting guidelines	308/1934	0.75 (0.64 to 0.88)***	0.79 (0.66 to 0.93)**	0.83 (0.70 to 0.98)*	0.93 (0.77 to 1.12)	8/1626	0.37 (0.17 to 0.85)*	0.43 (0.19 to 0.98)*	0.43 (0.19 to 0.99)*	0.46 (0.20 to 1.08)
MET. min										
Low (0–599)	406/2016	REF	REF	REF	REF	21/1610	REF	REF	REF	REF
Moderate (600–1199)	46/271	0.81 (0.58 to 1.13)	0.80 (0.57 to 1.13)	0.87 (0.62 to 1.23)	0.91 (0.63 to 1.31)	2/225	0.68 (0.16 to 2.91)	0.70 (0.16 to 3.01)	0.74 (0.17 to 3.22)	0.76 (0.17 to 3.32)
High (≥1200)	262/1663	0.74 (0.63 to 0.88)***	0.78 (0.66 to 0.94)**	0.82 (0.69 to 0.98)*	0.93 (0.77 to 1.13)	6/1401	0.33 (0.13 to 0.81)*	0.38 (0.15 to 0.95) ^s	0.38 (0.15 to 0.95) ^s	0.41 (0.16 to 1.05)

Model 1 adjusted for, age and sex.

Model 2 adjusted for Model 1 and waist circumference, social class, and smoking.

Model 3 adjusted for Model 2 and depressive symptoms.

REF, reference category.

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

N = 3'950, >=50 Jahre alt
Erhebung körperliche Aktivität bei Baseline (IPAQ sf)
2 Jahre Follow up: Composite Int Diagnostig Interview (CIDI) → GAD ja/nein

Sport als Behandlungsoption bei Angststörungen? - Metaanalyse

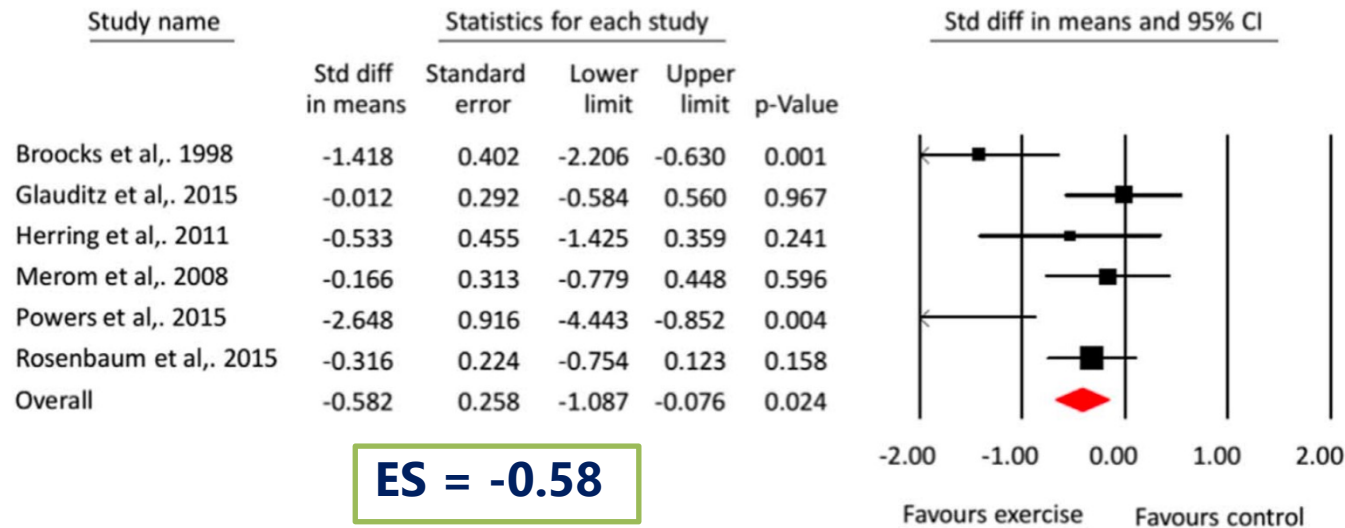
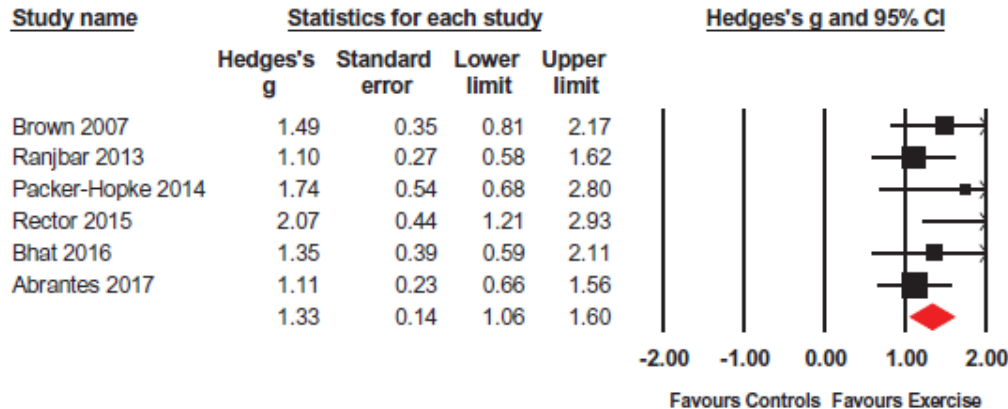


Fig. 2. effect of exercise on anxiety symptoms.

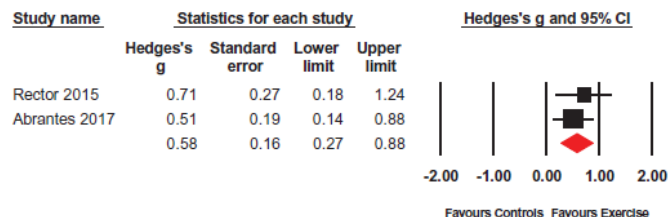
- Unklare Controls
- Weniger Placebo-Response als bei Depression
- Nur kleine Studien
- Methodische Mängel

Sport bei Zwangsstörungen: Positive Resultate



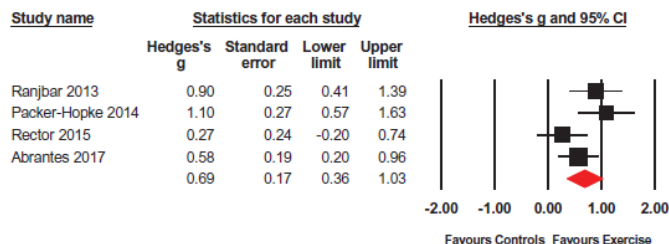
Zwangssymptome (YBOCS)

Hedge's $g = 1.33$



Depressive Symptom

$g = 0.58$



Angstsymptome

$g = 0.69$

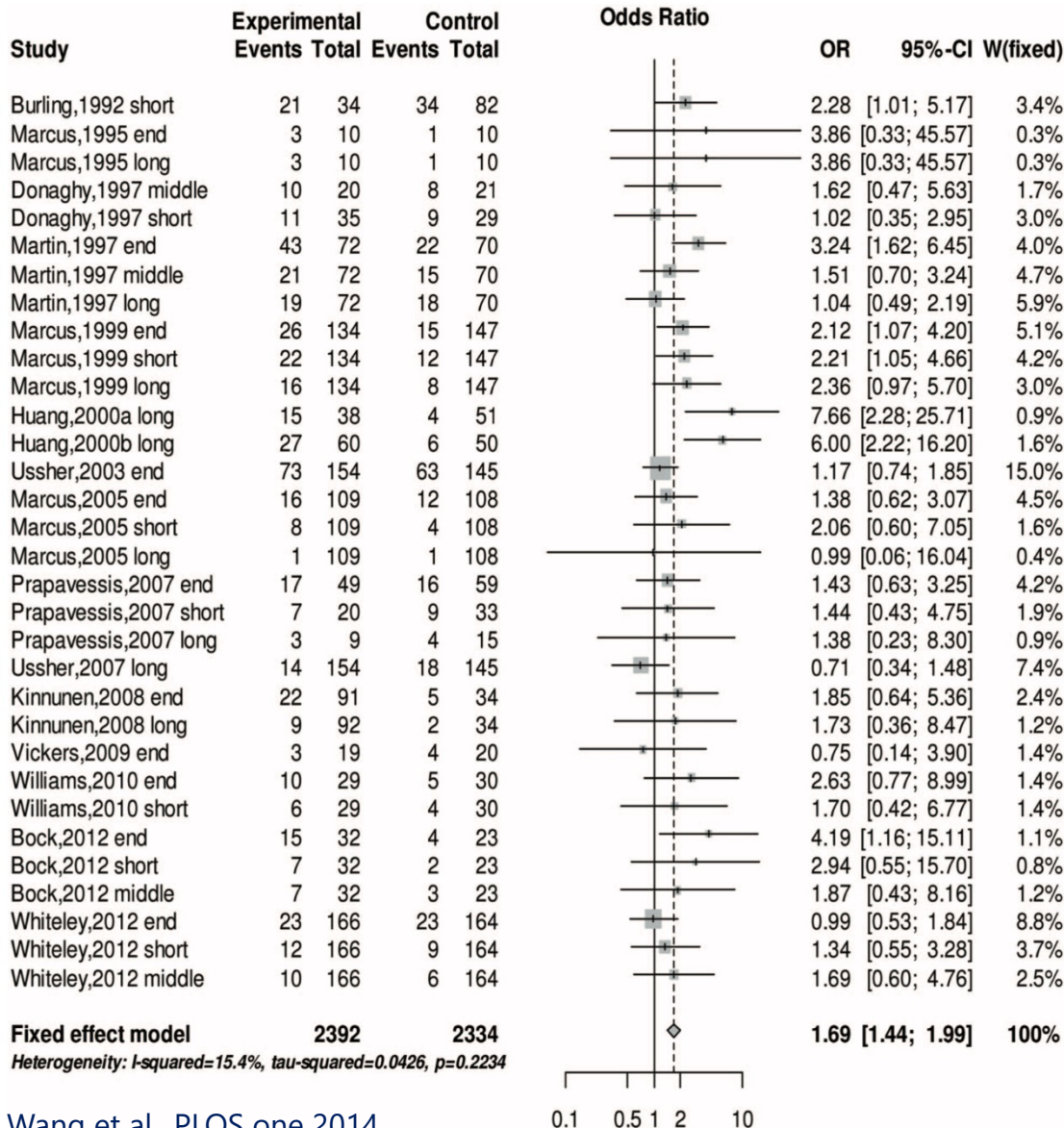
Heterogene Interventionen, Kleine Samples, methodische Mängel, Hohes Bias-Risiko



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Sport & Abhängigkeitserkrankungen: Meta-Analyse



Abstinenzrate: OR: 1.69
(95%CI: 1.44;1.99)

Depressive Sy: SMD = -0.47
Angstsy: SMD = -0.31

- Grosse Heterogenität der untersuchten Interventionen
 - Dauer: 2 Wochen bis 6 Monate
 - Aerobes Training, Yoga, Tai Chi, Qi Gong etc...
- Heterogenität bez. Substanzen
 - Alkohol, illegale Drogen, Nikotin
- Stärkere Effekte bei illegalen Drogen

Sport & Schizophrenie (Immer Addon)



Sport und Schizophrenie

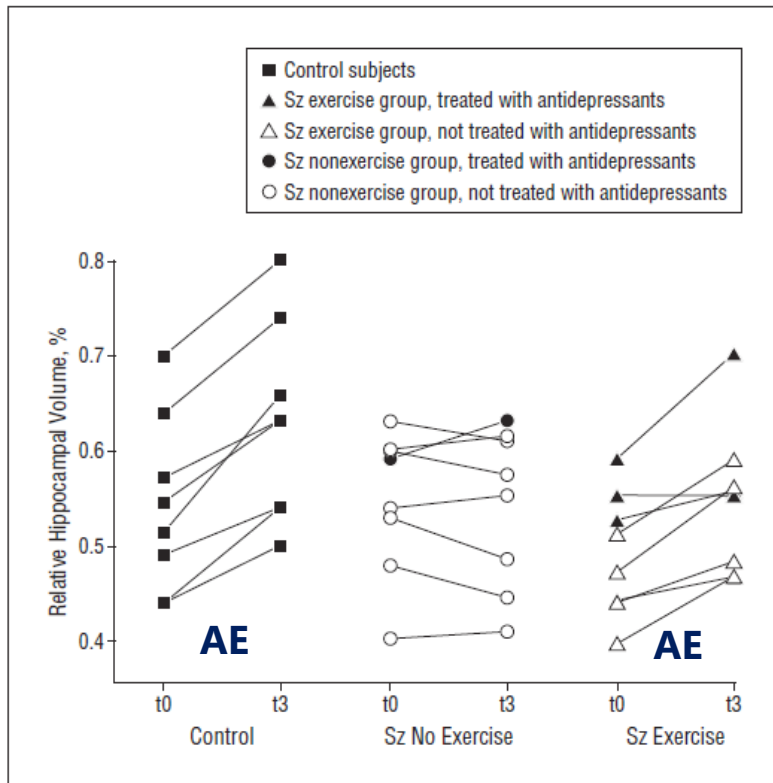
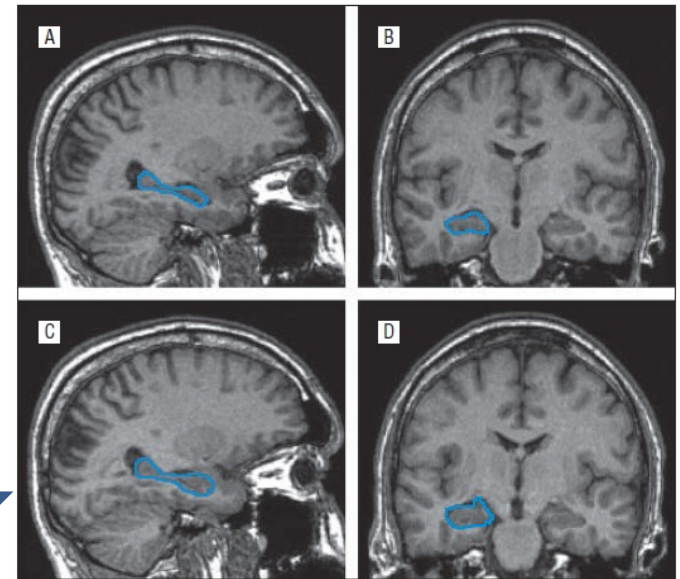


Figure 2. The changes in hippocampal volume in control subjects, schizophrenic (Sz) patients participating in aerobic exercise, and Sz patients with no aerobic exercise intervention. The data points present the relative hippocampal volume of each subject as a percentage of the total brain volume at baseline (t0) and 3 months later at end point (t3).

Pajonk et al., Arch Gen Psych 2010

F2-Pat. – Exercise effect



- $n=16$ Pat. mit Sz, $n=8$ HC
- **3 Monate Ausdauertraining vs. Tischfussball**
- Sz-Pat: Hippocampusvolumen $\uparrow$
korr. mit Kurzzeitgedächtnis $\uparrow$
($r=0.51$, $p<0.05$)

Sport und Kognition bei Schizophrenie

Effektstärke:

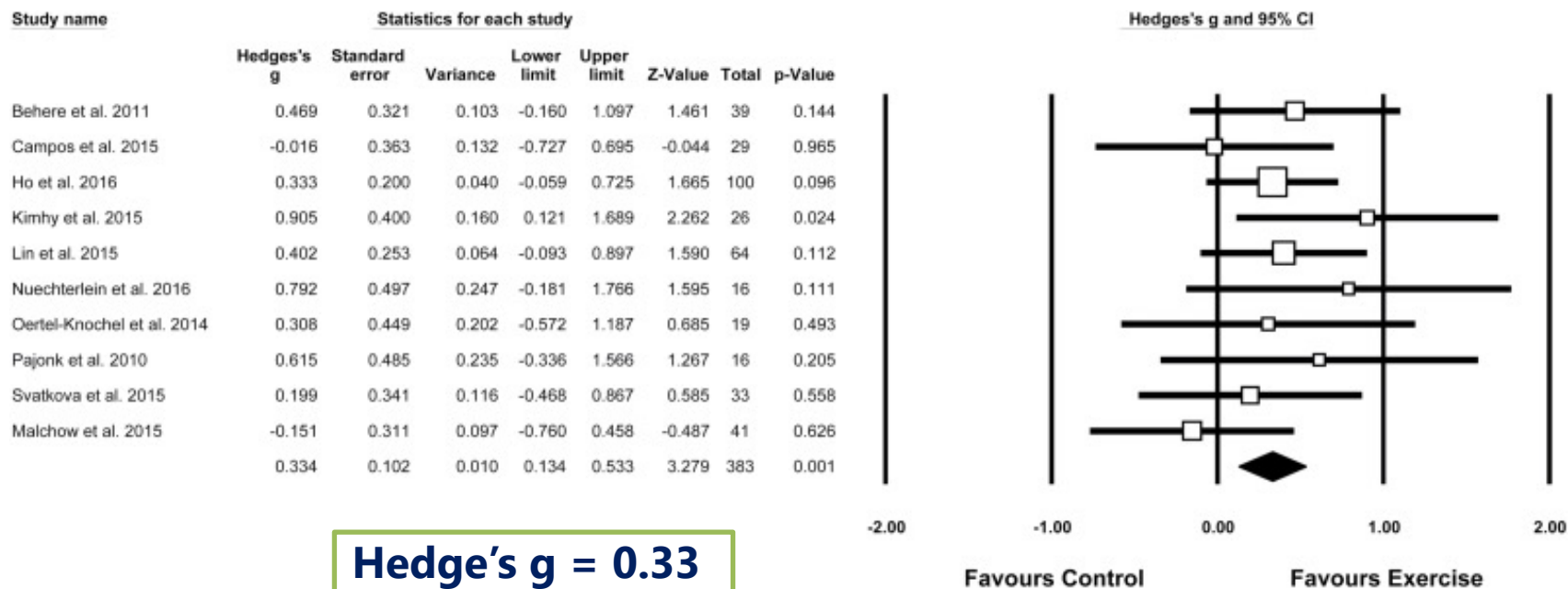
(d, g, SMD)

≥0.2: klein

≥0.5: mittel

≥0.8: gross

Exercise effects on global cognition in comparison to control conditions.



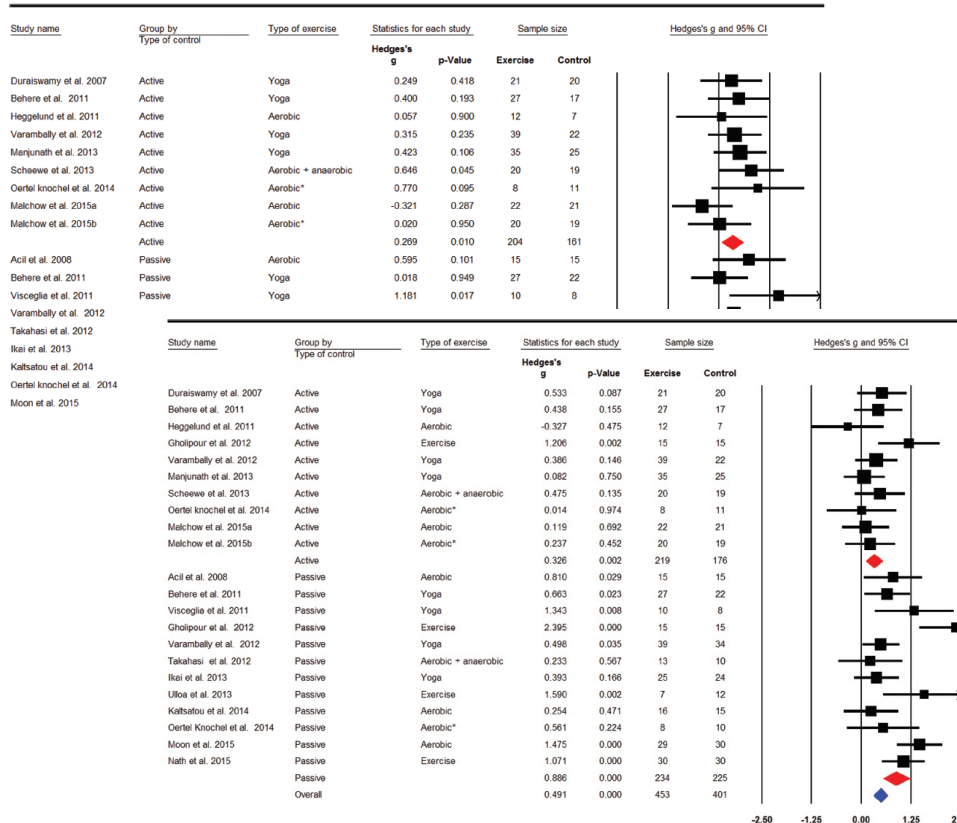
Firth et al., Schizophr Bull 2017



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Sport & Schizophrenie: **Positiv- /Negativsymptome**



Positivsymptome

Hedge's g:

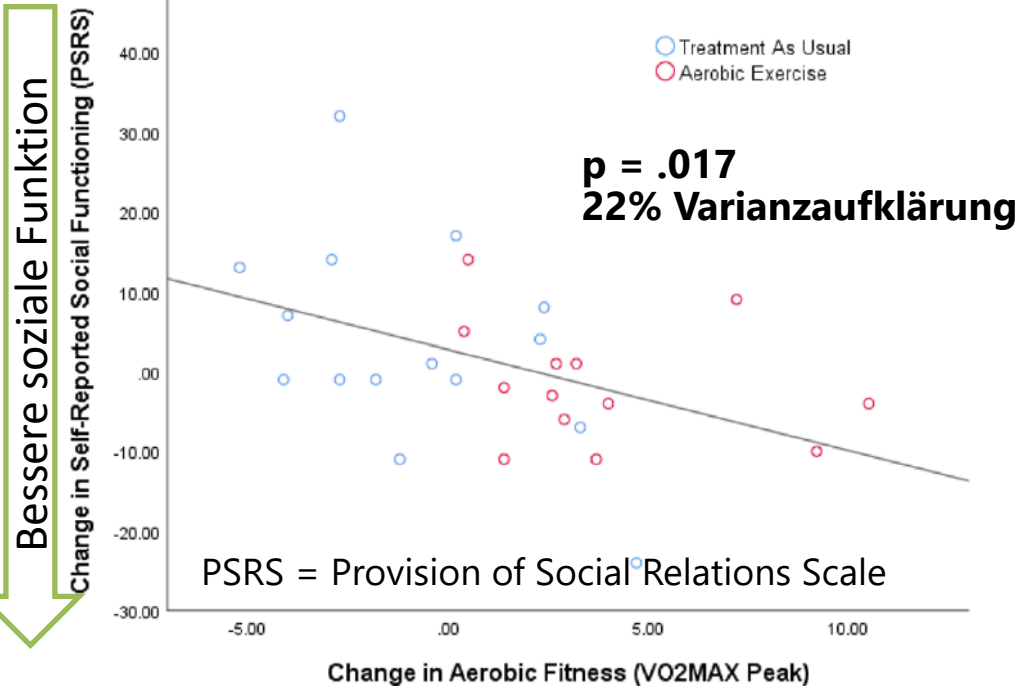
Aktive Kontr.: 0.27
Passive Kontr.: 0.50
Alle: 0.32

Negativsymptome

Hedge's g:

Aktive Kontr.: 0.33
Passive Kontr.: 0.89
Alle: 0.49

Sport verbessert soziale Funktionalität bei Schizophrenie → Verbesserung Fitness relevant



N = 33, Pat. mit Schizophrenie
12 Wochen

- **TAU**
- **Aerobic Exercise**
- Sign. Verbesserung Soziale Funktionen in Sportgruppe

VO₂max↓

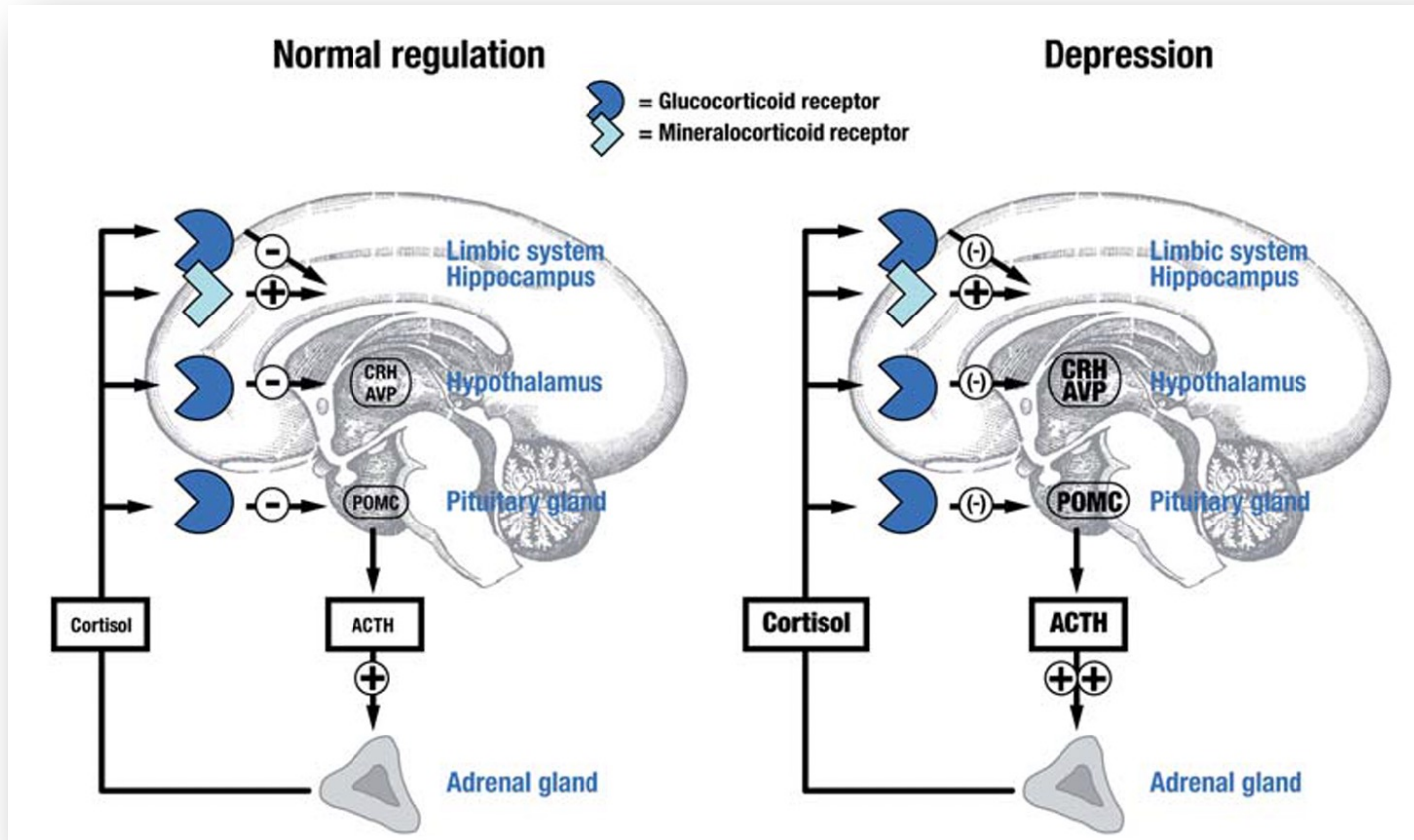
VO₂max↑



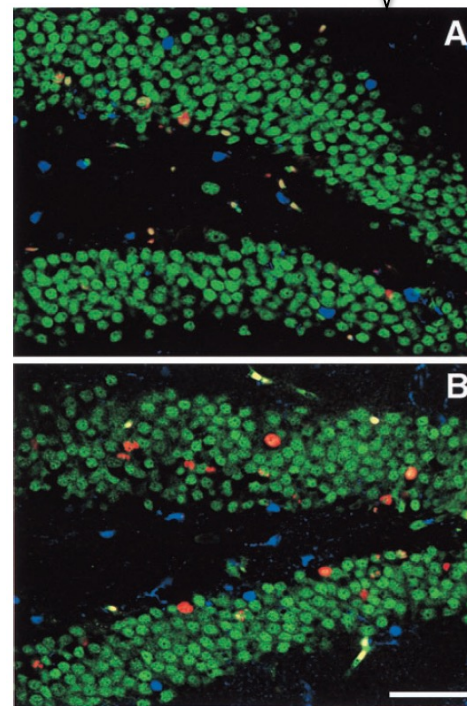
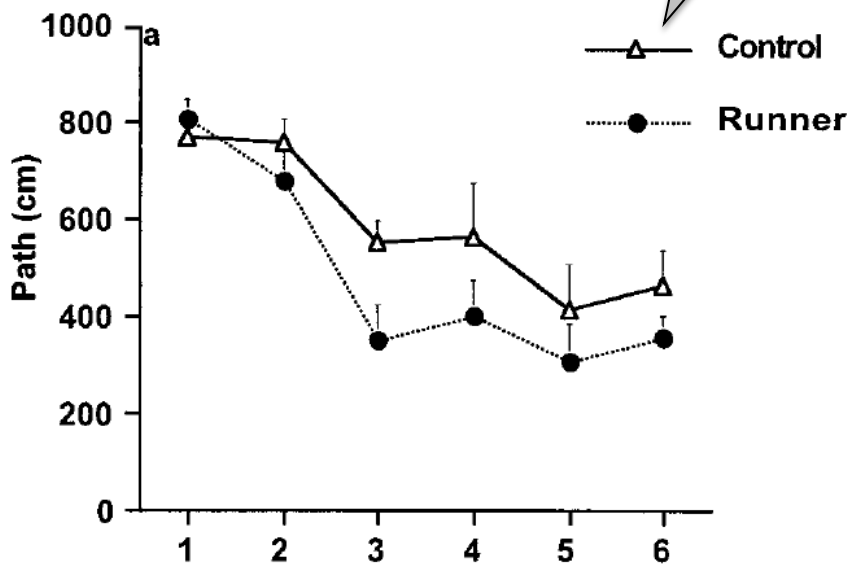
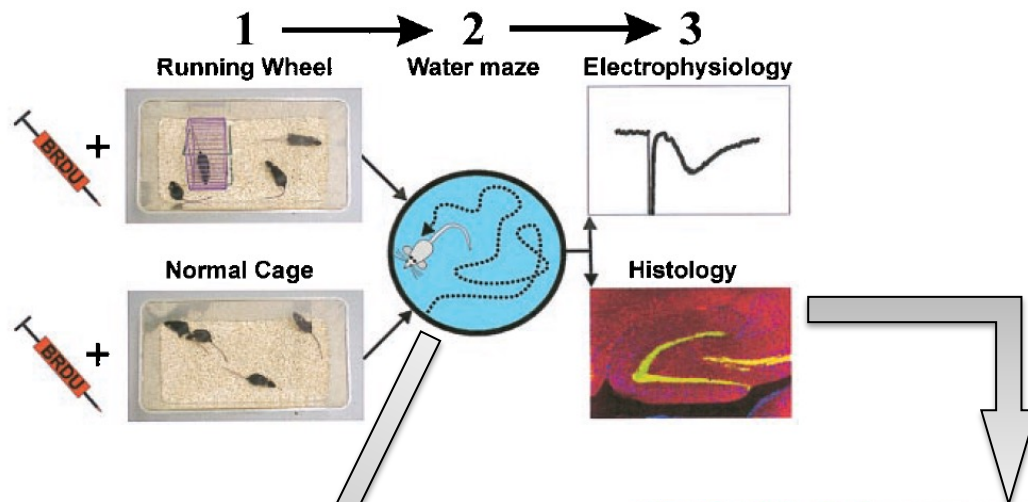
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Neurobiologische Aspekte



Bosch et al., World J. Biol. Psychiatry
Modified after Ising& Holsboer 2006

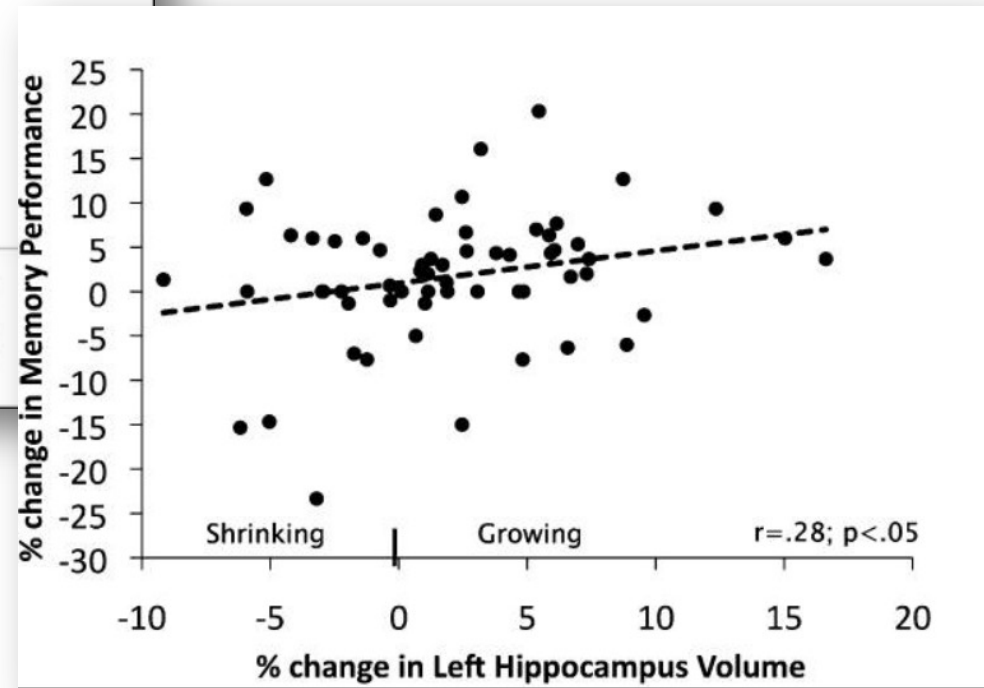
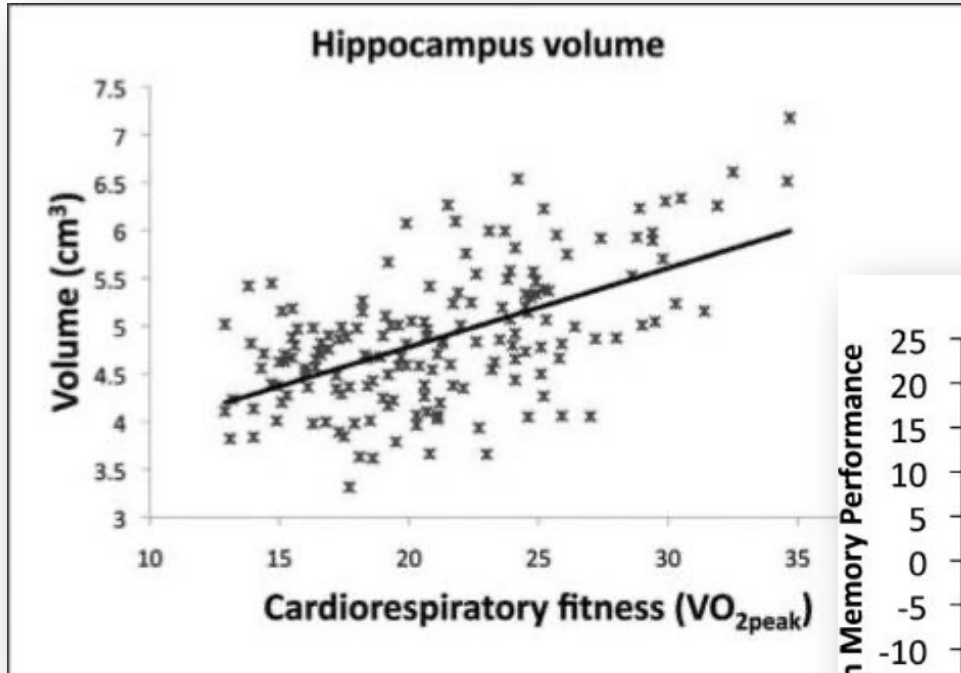


Controls

Runners

Red = dividing cells

Hippocampus-Volumen (links) und Fitness



Erickson et al. 2009
Erickson et al. 2011

Fitness & Stress

Tiefe Fitness → Stressempfinden
ANOVA: fitness X stress: $p = <.05$

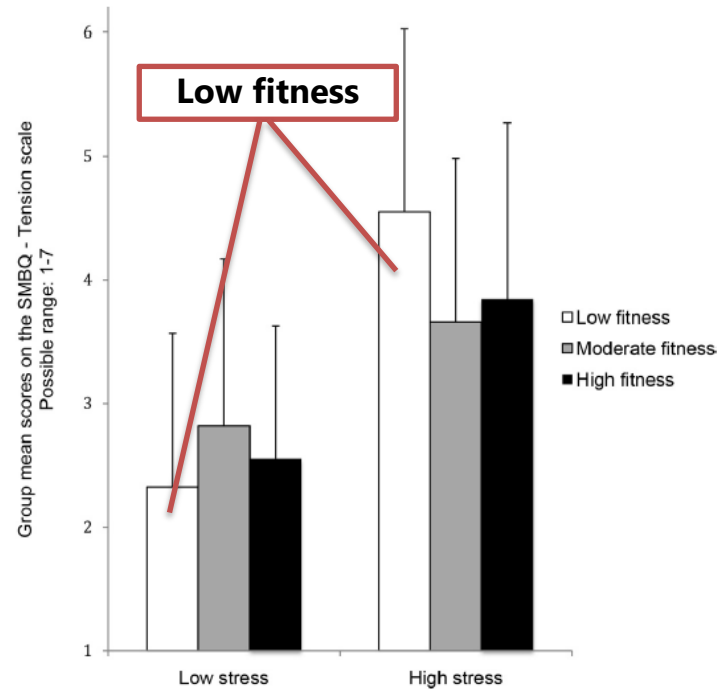
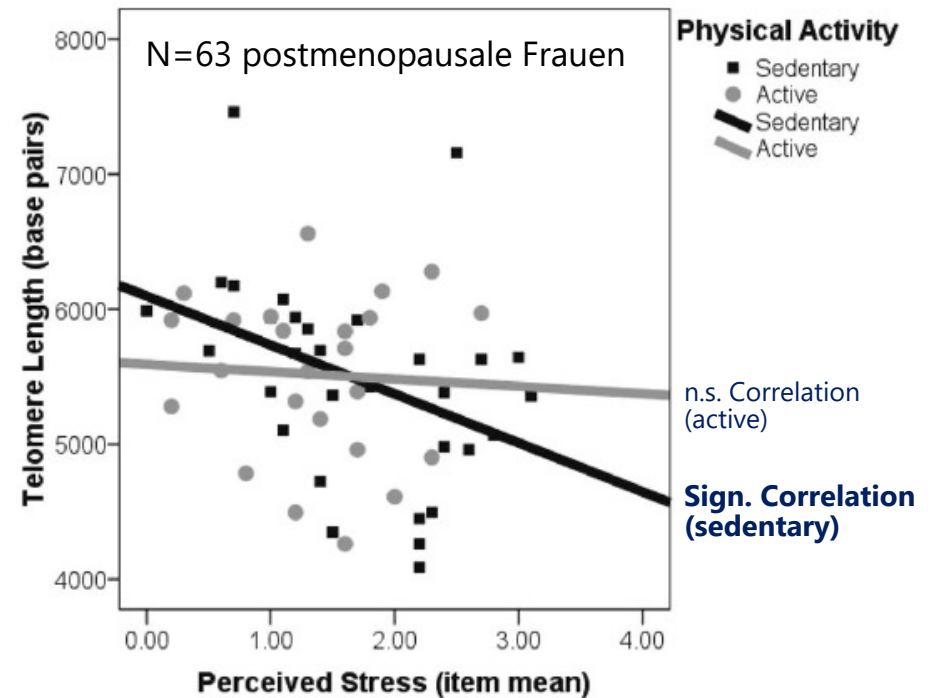


Fig. 2. Differences between participants with low, moderate and high fitness on the SMBQ - Tension scale, if experiencing low versus high stress.

SMBQ = Shirom-Melamed Burnout Questionnaire
N = 197, 49% women

M. Gerber et al., Patient Education and Counseling 2013

Inaktive → Stress mit kürzeren Telomeren assoziiert



Puterman et al., PLoS ONE 2010

Methodische Herausforderungen in Sportstudien

- **Adäquates Placebo / Kontrollintervention** - leichte körperliche Aktivität, Medikation, Psychotherapie, Beschäftigung, TAU...
- **Effekte niedrigintensiver körperlicher Aktivität:** Neue Meta-Analysen fokussieren auf inaktiven Kontrollen.
- **Unspezifische Effekte von Verhaltensänderungen**
- **Primär inaktive versus Menschen mit habitueller körperlicher Aktivität:** Meist wird nur körperliche Aktivität in den letzten Wochen für Einschluss beurteilt.
- **Schwierigkeiten der Verblindung von Studien-Teilnehmenden.**

Lifestyle Interventionen bei unipolarer Depression

THE WORLD JOURNAL OF BIOLOGICAL PSYCHIATRY
<https://doi.org/10.1080/15622975.2022.2112074>



 Taylor & Francis
Taylor & Francis Group

ORIGINAL INVESTIGATION

 OPEN ACCESS 

Clinical guidelines for the use of lifestyle-based mental health care in major depressive disorder: World Federation of Societies for Biological Psychiatry (WFSBP) and Australasian Society of Lifestyle Medicine (ASLM) taskforce

Wolfgang Marx^a , Sam H. Manger^{b,c} , Mark Blencowe^c, Greg Murray^d , Fiona Yan-Yee Ho^e , Sharon Lawn^{f,g} , James A. Blumenthal^{h*}, Felipe Schuchⁱ , Brendon Stubbs^j , Anu Ruusunen^{a,k,l} , Hanna Demelash Desyibelew^m, Timothy G. Dinanⁿ , Felice Jacka^a , Arun Ravindran^o, Michael Berk^a  and Adrienne O'Neil^{a*}

Marx et al., 2022

ASSESS

Step 1: Assess lifestyle factors (Implementation consideration 3)

[...]

ASSIST

Physical
activity
(Section 4.1)

Smoking
cessation
(Section 4.2,
Implementation
consideration 9)

Work-directed
interventions
(Section 4.3)

Mindfulness-
based therapies
(Section 4.4)

Stress
management
and relaxation
(Section 4.4)

Dietary
interventions
(Section 4.5)

Sleep
interventions
(Section 4.6)

Social
connectedness
(Section 4.7)

Green space
interaction
(Section 4.8)

Alcohol and
substance
management*
(Implementation
consideration 9)

If available and required

Incorporate family, carers,
peer and cultural supports
(Implementation consideration 7)

Use digital delivery platforms
(Implementation consideration 8)

Consider allied health professional
involvement
(Implementation consideration 9)

Apply psychological interventions (if required)
Pharmacotherapy/additional therapies (if required)
(Consider psychologist/psychiatrist)

Praxis:

Erhebung Aktivitätslevel Bewegungs-Coaching

- **Standardisierte Erhebung** körperlicher Aktivität
 - Fragebogen:
 - SIMPAQ, IPAQ (Kurzform),
 - **Physical Activity Vital Sign**: wöchentliche Minuten moderat oder intensiv
- **Motivationales Vorgehen** bezüglich körperlicher Aktivität
 - Kleine Steigerung bei inaktiven hat den höchsten Grenznutzen
 - Was, wann, mit wem, wozu?
- **Individuelle Bewegungsziele** definieren
- Trainings **terminieren**
- **Zielerreichung überprüfen**



The image shows a screenshot of the Salutacoach.com website. The header features the Salutacoach logo on the left and navigation buttons for 'GESUNDHEITS-CHECK' and 'LOGIN' on the right. The main banner is split: the left side shows a person stretching on a running track with the text 'Gesund leben', and the right side has a teal background with the text 'Ein Leben ohne Rückenschmerzen?' and a 'PROGRAMME' button. Below this is a section titled 'Was beinhaltet ein Coaching?' with three white boxes: 'Persönlicher Coach' (with an icon of two people), '1:1 Coaching per Telefon oder Video' (with a headset icon), and 'Standortbestimmung' (with a location pin icon).

Salutacoach

GESUNDHEITS-CHECK LOGIN

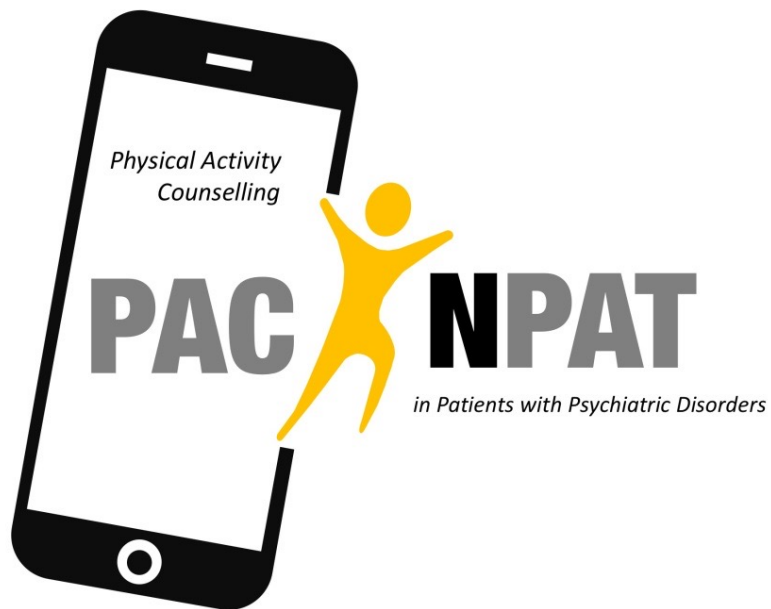
Gesund leben

Ein Leben ohne Rückenschmerzen?

PROGRAMME

Was beinhaltet ein Coaching?

- 
Persönlicher Coach
- 
1:1 Coaching per Telefon oder Video
- 
Standortbestimmung



UPK **Universitäre
Psychiatrische Kliniken**
Basel

W
PRIVATKLINIK WYSS
SEIT 1845



SONNENHALDE
KLINIK FÜR PSYCHIATRIE
UND PSYCHOTHERAPIE



UNIVERSITÄT BASEL
Departement für Sport, Bewegung und Gesundheit

PI: Prof. Markus Gerber, DSBG Universität Basel

Psychiatrische
Dienste

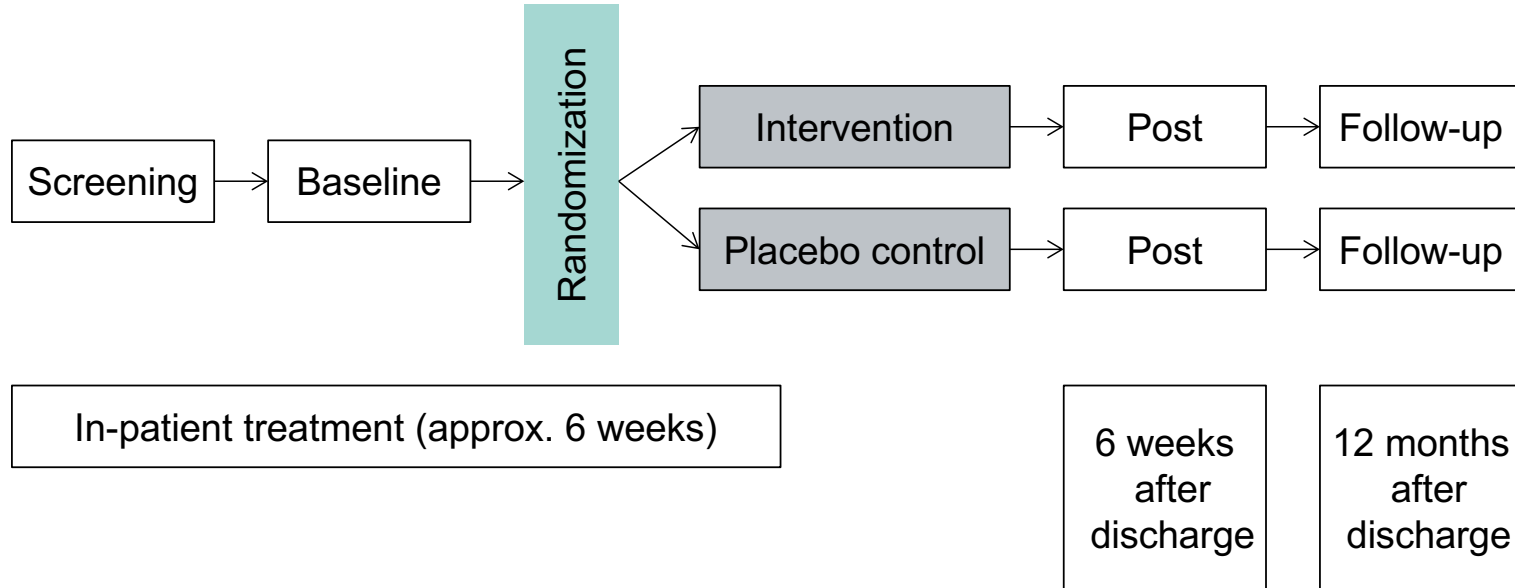
**solothurner
spitäler** **soH**



**SCHWEIZERISCHER NATIONALFONDS
ZUR FÖRDERUNG DER WISSENSCHAFTLICHEN FORSCHUNG**

PACINPAT

2 Termine mit Coach während Hospitalisation
Wöchentliche Telefontermine für ein Jahr
Motivationale und Volitionale Techniken

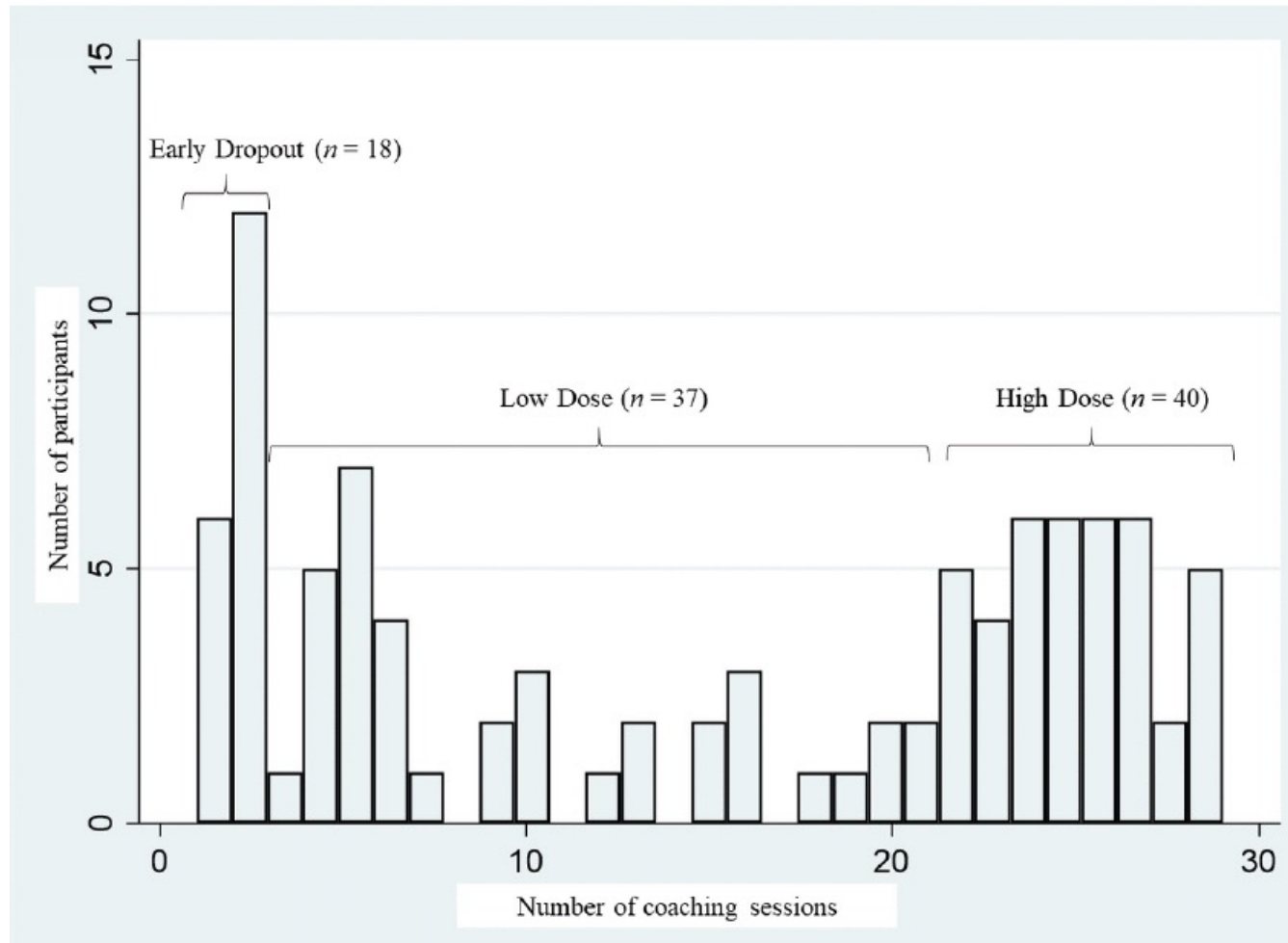


Primary outcome: objectively assessed physical activity (Actigraph, 7 days).

Secondary outcomes: self-reported physical activity, cardiorespiratory fitness, depression severity, self-perceived physical and psychological health, insomnia symptoms, cognitive function, cardiovascular health risk markers, biomarkers of MDD (CAR, sBDNF, TNF α).

PACINPAT: Implementation, n = 220

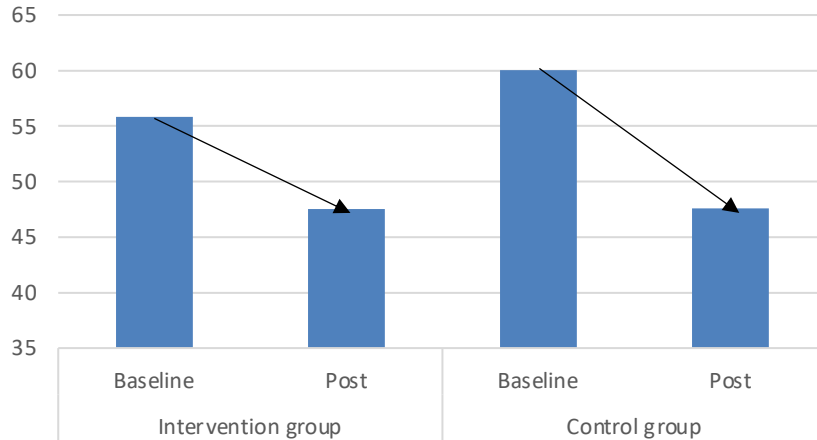
Coaching Sessions



Short-term Resultate: 6 Wochen nach Austritt Hohe Aktivität im stationären Setting!

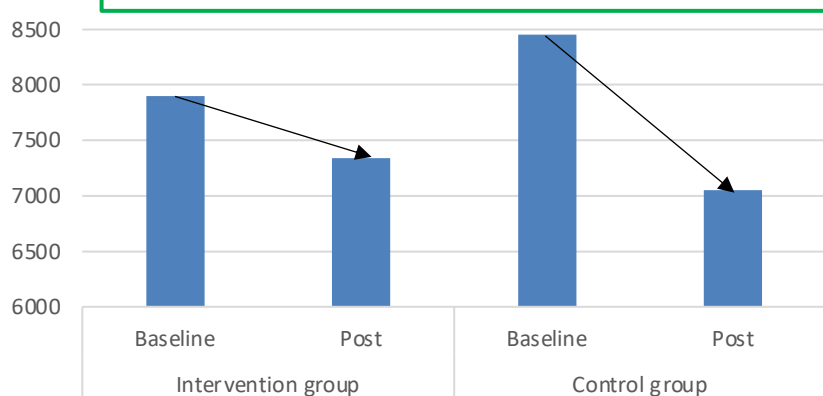


Accelerometer-based MVPA (min/day)

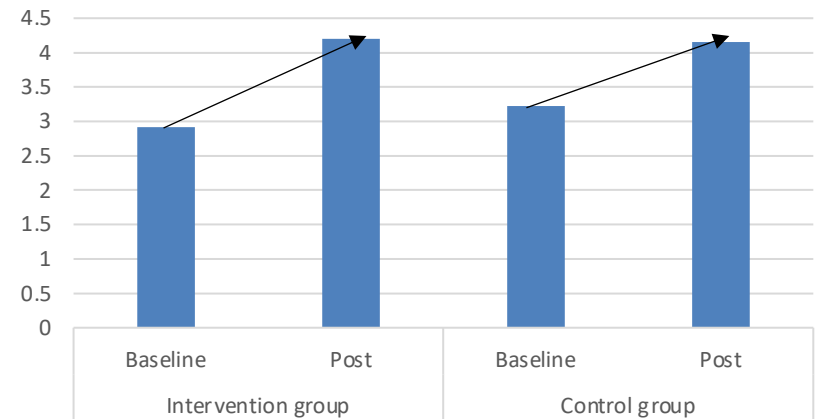


Steps per day

Sign. Weniger Rückgang in Interventionsgruppe



Self-reported exercise (hours/week)



Take home

- Regelmässige körperliche Aktivität reduziert das Depressionsrisiko
- Sportinterventionen haben eine gute Evidenz als Zusatztherapie bei
 - unipolarer Depression
 - depressive Symptome bei (psychischen und) somatischen Erkrankungen
- Positive Hinweise bei anderen Erkrankungen, weniger robuste Evidenz
- Hohes Potenzial zur Verringerung somatischer Morbidität bei psychischen Erkrankungen
- Berücksichtigung körperlicher Aktivität (und weiterer Lebensstilfaktoren) in der klinischen Praxis
- Weiterentwicklung von Coaching-Ansätzen und Studien in der alltäglichen Praxis

Besten Dank für Ihre Aufmerksamkeit

christian.imboden@pkwyss.ch

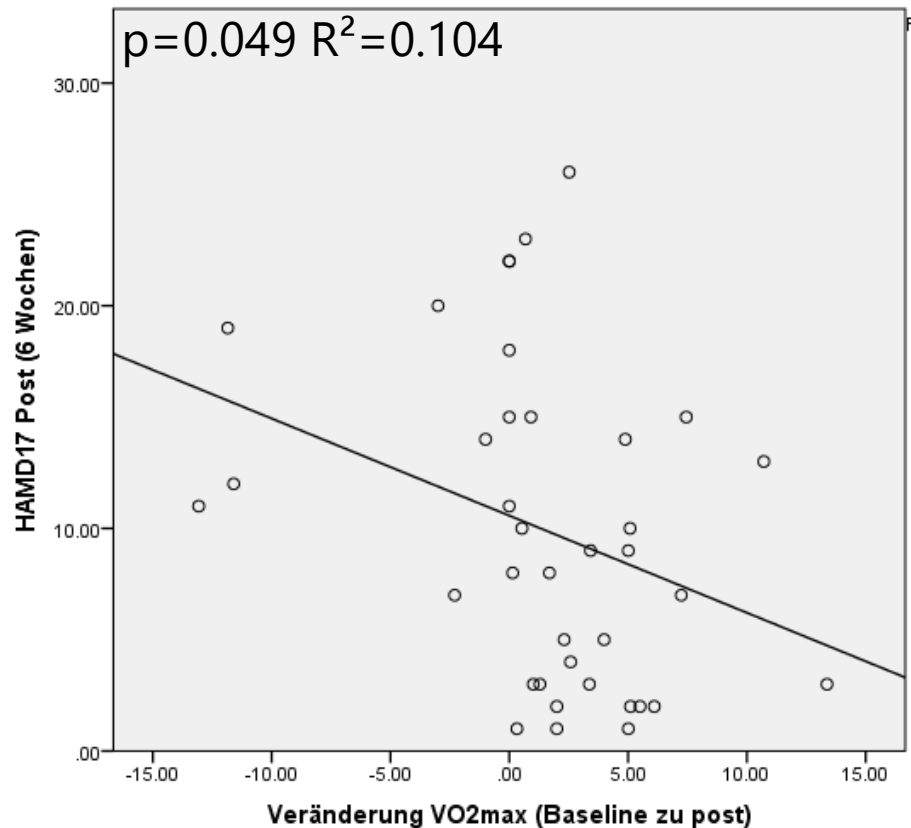


PRIVATKLINIK WYSS

SEIT 1845

Verbesserung Fitness mit weniger depressiven Symptomen assoziiert (ITT $n=42$)

HDRS Post



Weitere sign. Assoziationen
dVO2max:

- Schlafqualität pre
- Schlafqualität post
- Erhöhte REM-Latenz

Trainierte Personen mit geringerer Stressreaktivität

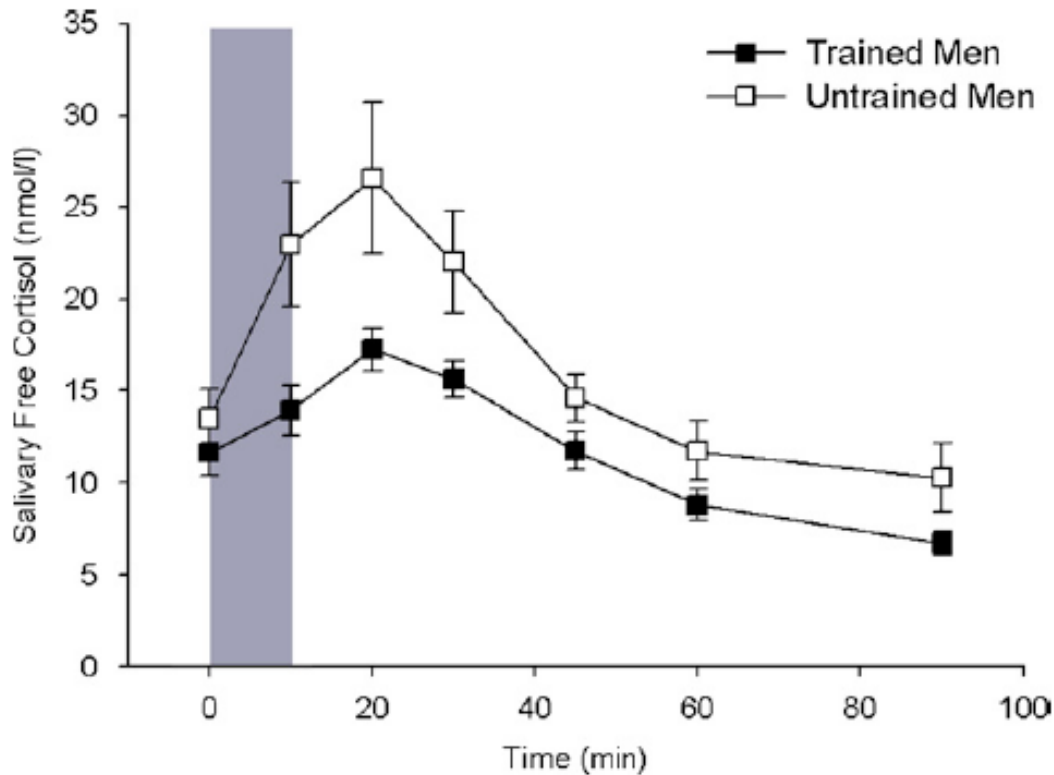


Figure 1 Mean salivary free cortisol levels before, during, and after a standardized psychosocial stressor (Trier Social Stress Test) in trained and untrained men. The shaded area indicates the 10-min period of stress exposure. Error bars are standard errors of the mean (SEM).

Rimmele, U., et al. Psychoneuroendocrinology 2007; 32, 627-635.

Depression & Sport: HPA-Achse

Meta-Analyse

Cortisol bei Depression (k = 5)

- Unterschiedliche Messmethoden
- Unterschiedliche Sport-Modalitäten
- Kleine bis sehr kleine Samples

- Alle Studien: SMD = -0.65 (n.s.)

- **Nur aerobes Training: SMD = -0.76 (sign.)**

Welche Patienten mit Depression profitieren von einer Sportintervention?

Prädiktoren (n = 122)	
Remission	Non-response
Höheres Serum-BDNF (BL ¹) Höheres IL-1B (BL) Positiver Affekt nach 1. Training Höhere depressive Symptomatik	Tieferes Serum-BDNF (BL) Tieferes IL-6 (BL) Weniger pos. Affekt nach 1. Training Hohe Fitness / VO2max (BL)

¹BL = Baseline

Positive Bewertung Sport
Inaktiver Lebensstil / tiefe Fitness
Neuroplastizität?
Inflammation?

Rethorst et al., Depress Anxiety 2017

Physical Activity Vital Sign

Exercise
is Medicine®

AMERICAN COLLEGE
of SPORTS MEDICINE®

1. On average, how many days per week do you engage in moderate to vigorous physical activity (like a brisk walk)? _____ days
 2. On average, how many minutes do you engage in physical activity at this level? _____ minutes
- Total minutes per week of physical activity (multiply #1 by #2) _____ minutes per week

Moderat: man kann sprechen, aber nicht singen
Intensiv (vigorous): Sprechen fällt schwerer

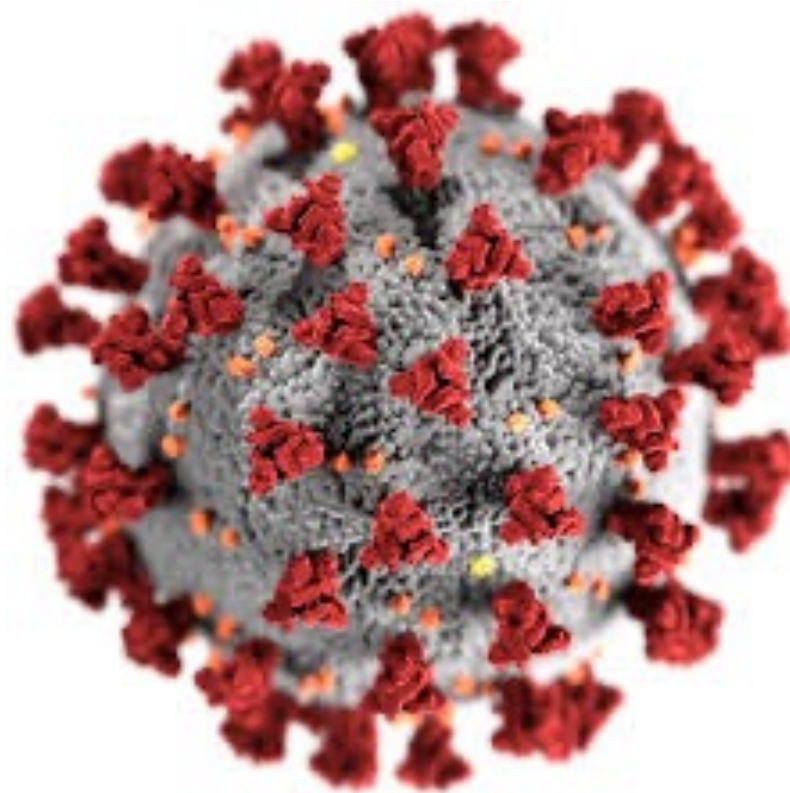
The Physical Activity Vital Sign – Additional Option

- A comprehensive assessment of physical activity should include muscle strengthening exercises as recommended by the Physical Activity Guidelines for Americans: Adults should do muscle strengthening activities that are moderate or high intensity and involve all major muscle groups on 2 or more days a week.
- If you wish to add a question on muscle strengthening activities, we recommend the following:

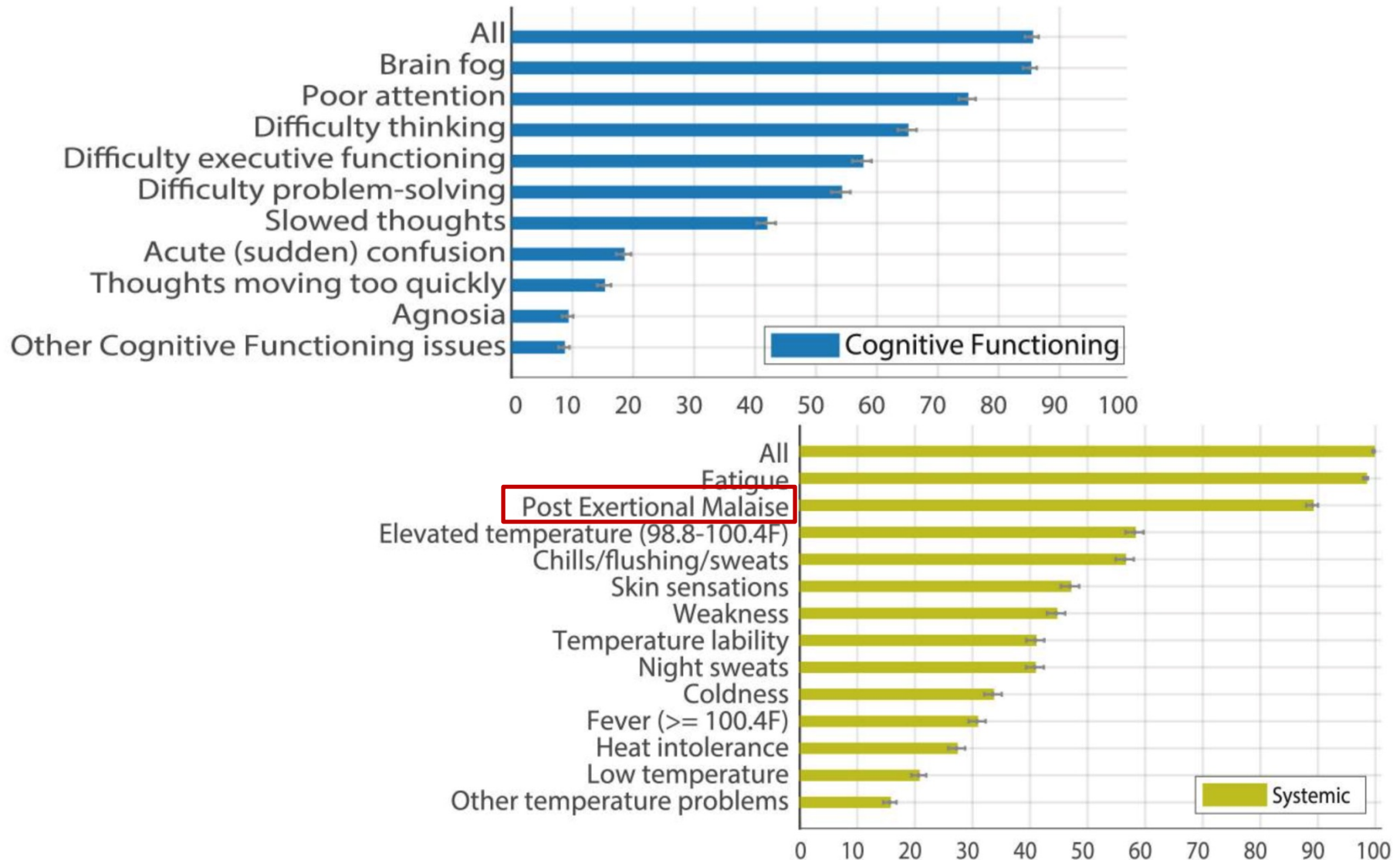


How many days a week do you perform muscle strengthening exercises, such as bodyweight exercises or resistance training? _____ days

Exkurs: Long COVID & Sport



Symptome bei long-COVID



Post Exertional Malaise (PEM)

