

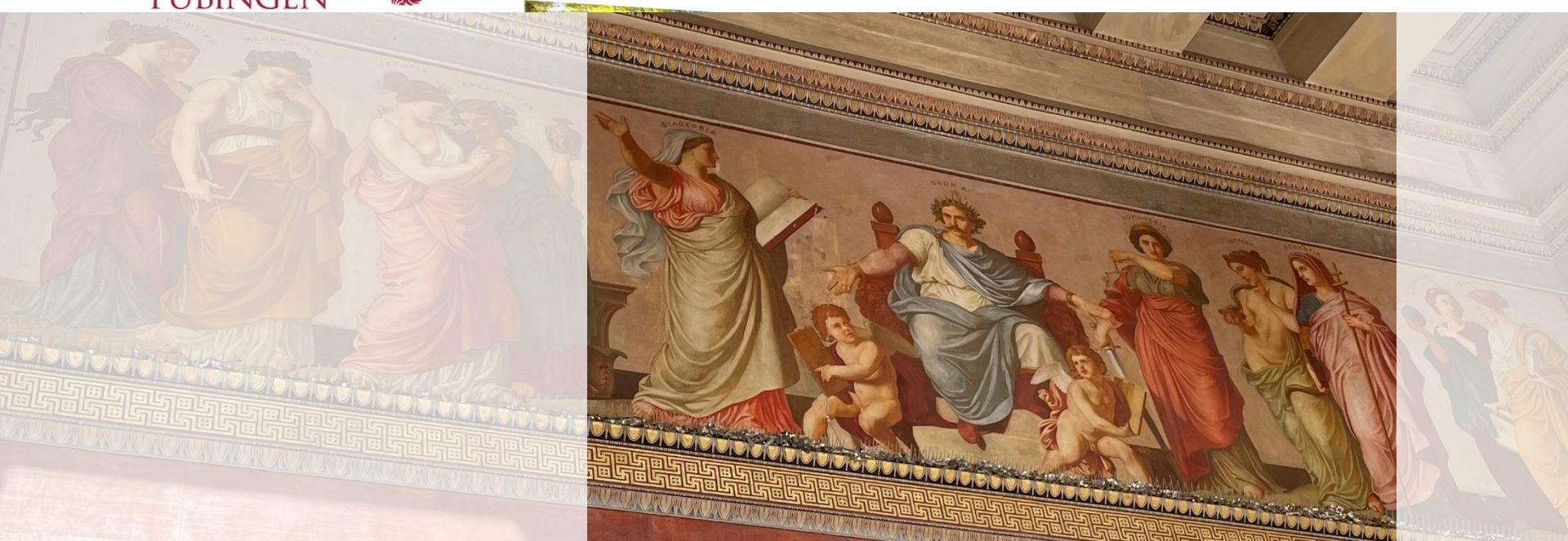


Promoting Physical Activity – Health Educational Perspectives in Preventive and Therapeutic Settings

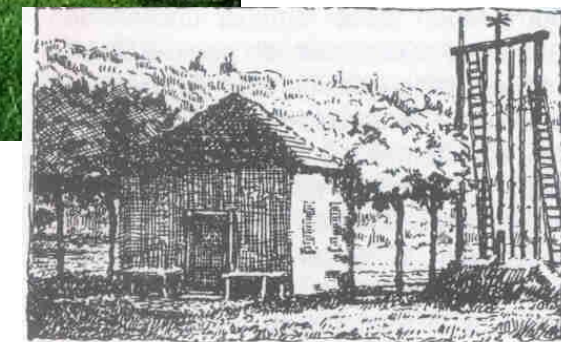
Prof Dr Gorden Sudeck



The University Tübingen was founded in 1477
(4 Faculties: Medicine, Law, Philosophy, Theology)



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(4 Faculties: Medicine, Law, Philosophy, Theology)



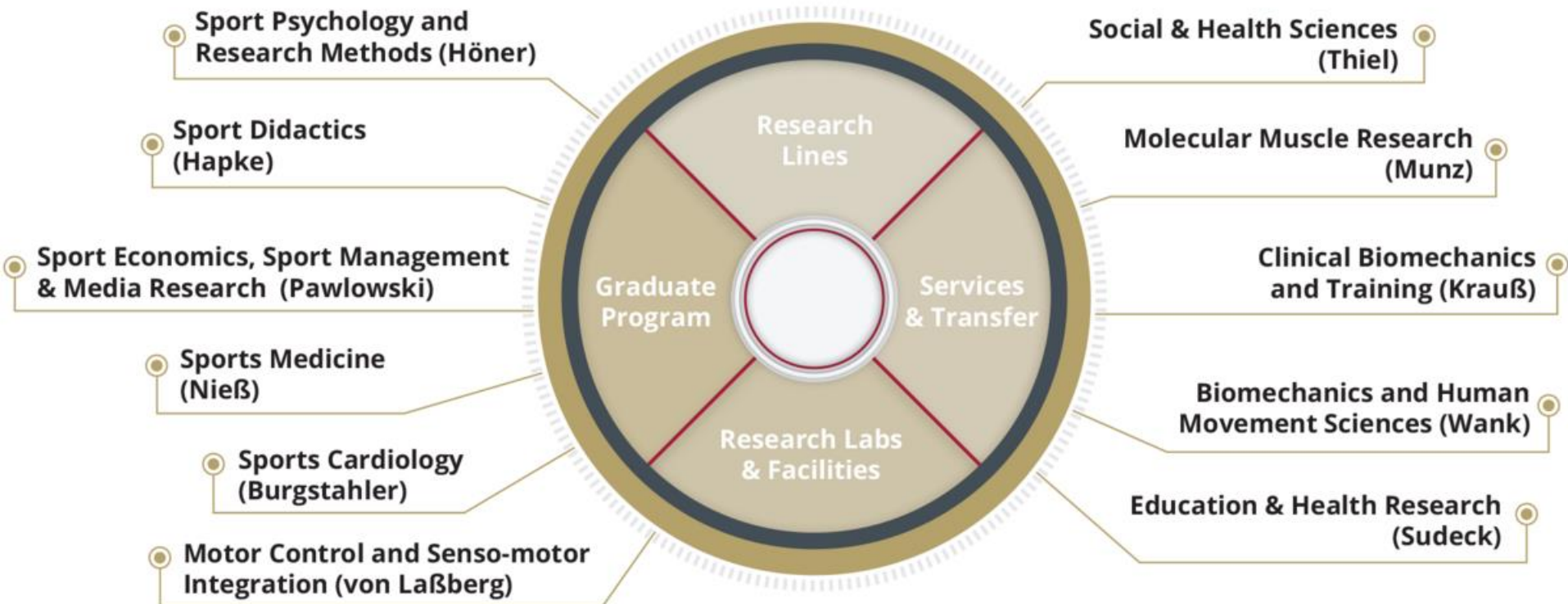
founded in 1968
(as one of the first Sport Science Institutes in Germany)

Before that, 1819/1839 „Gymnastische Anstalt“
1934 Institut für Leibesübungen (mainly PE teacher education)



Interfaculty Research Institute for Physical Activity and Sports

- Combines research groups of the **Institute of Sport Science** and the **Sports Medicine Department** of the University Hospital Tübingen





**Physical activity
promotion & health**



**Sport
&
Education**

**Health
education
&
competence**

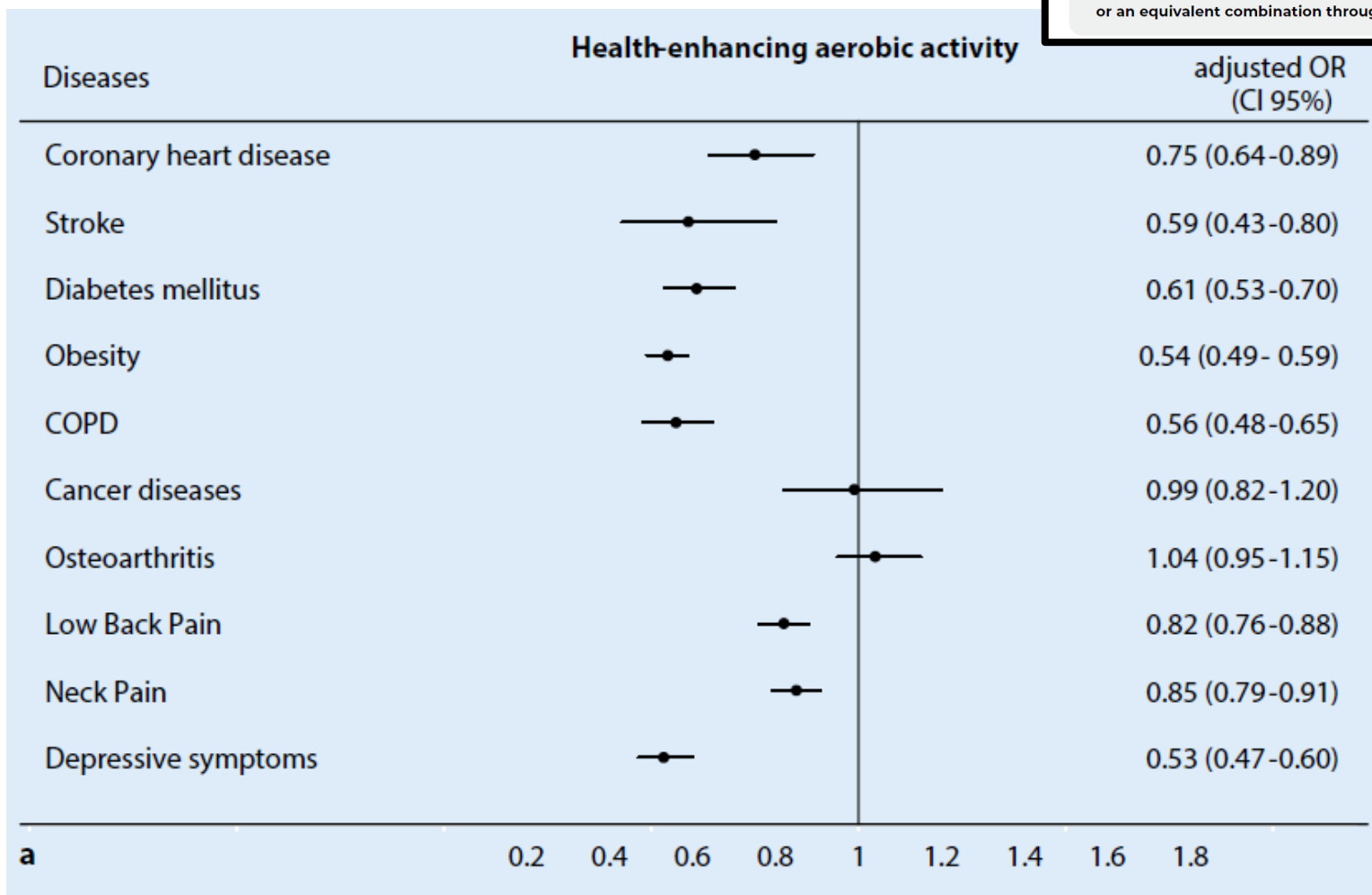
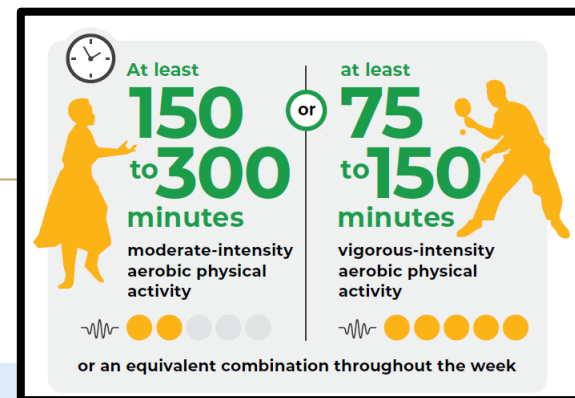


**Physical activity
in therapy &
rehabilitation**





Non-communicable diseases (NCD) and health-enhancing aerobic activity





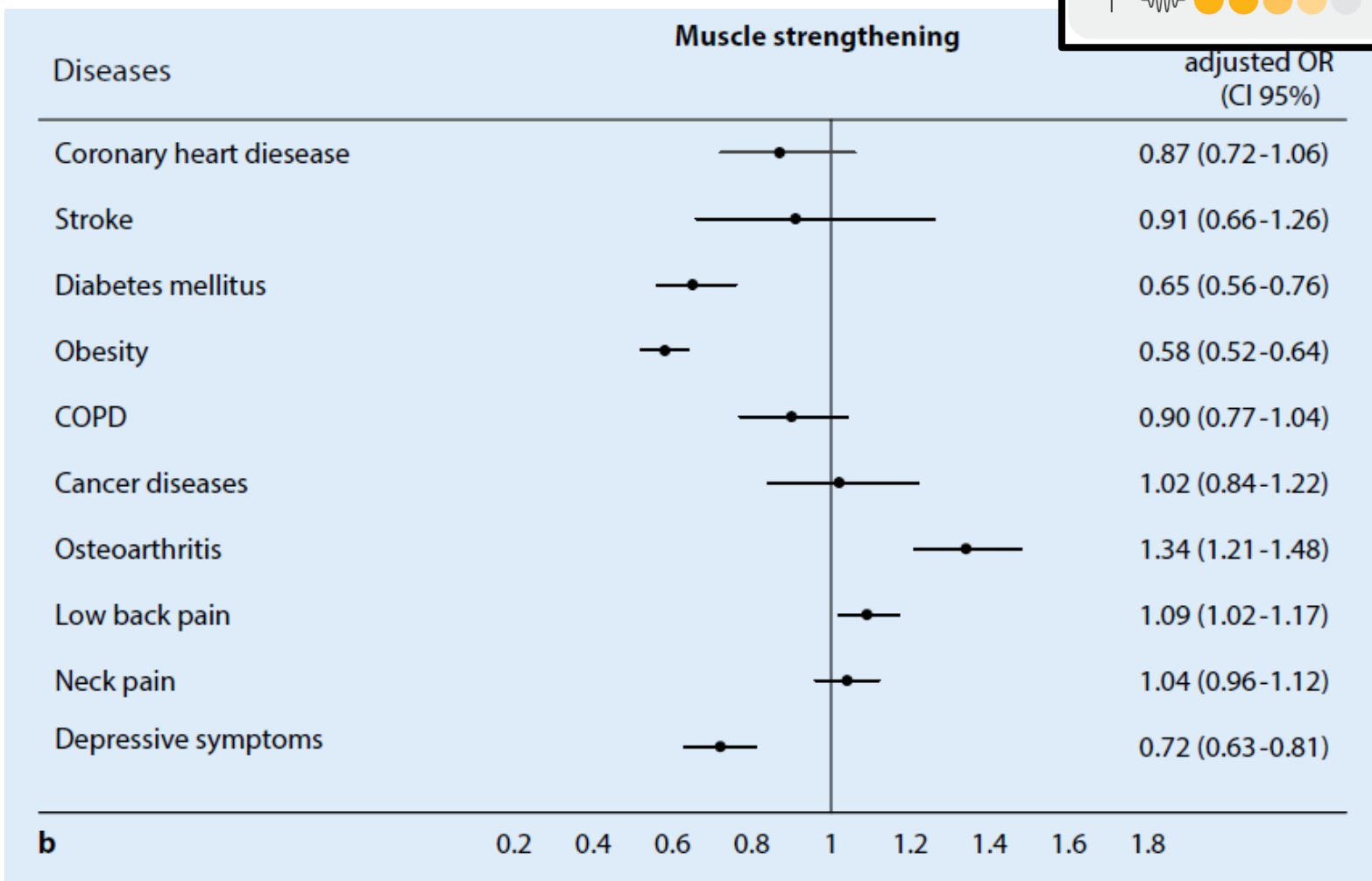
Non-communicable diseases (NCD) and muscle strengthening activities

For additional health benefits:
On at least

2 days a week

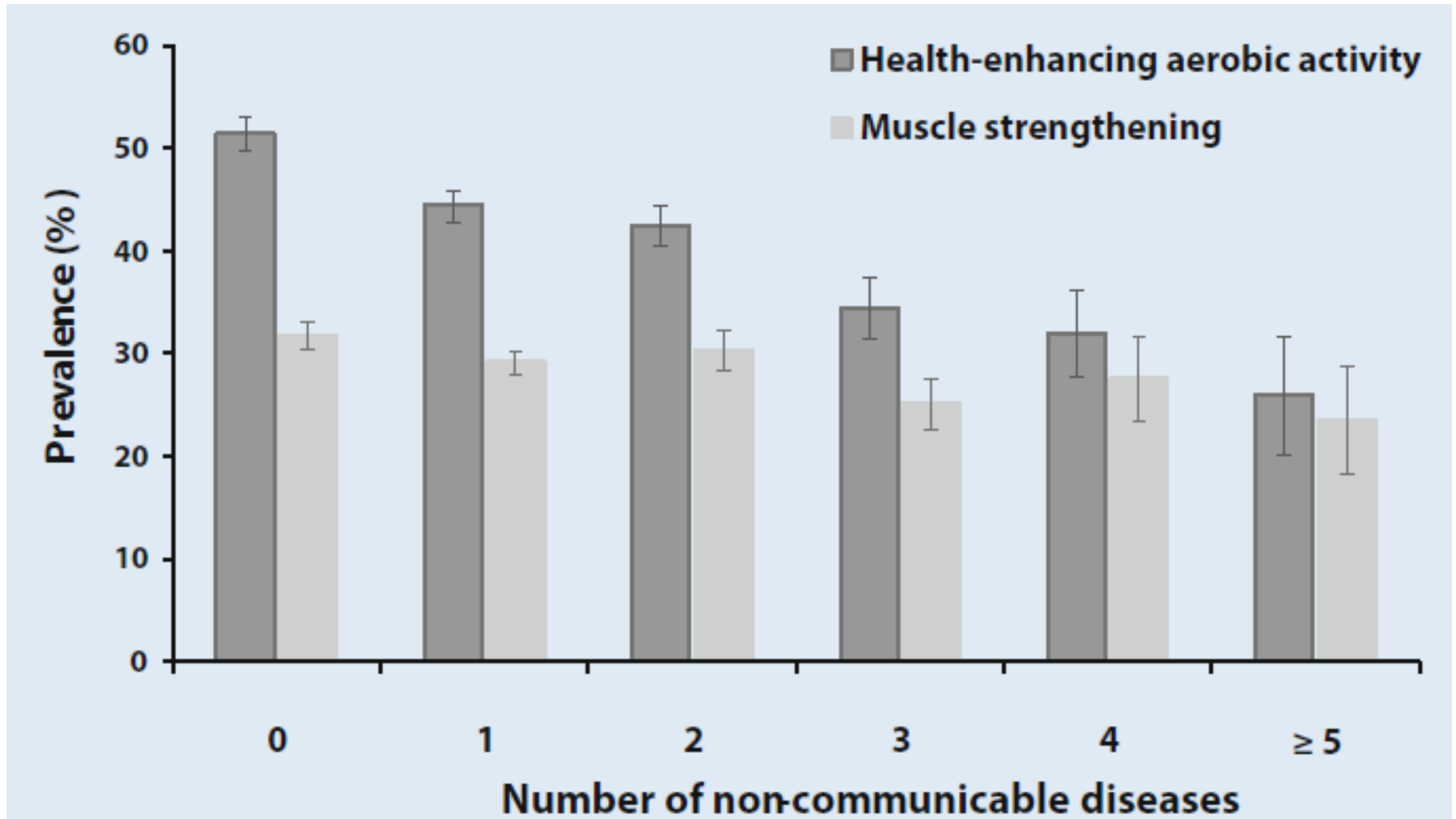
muscle-strengthening activities at moderate or greater intensity that involve all major muscle groups.

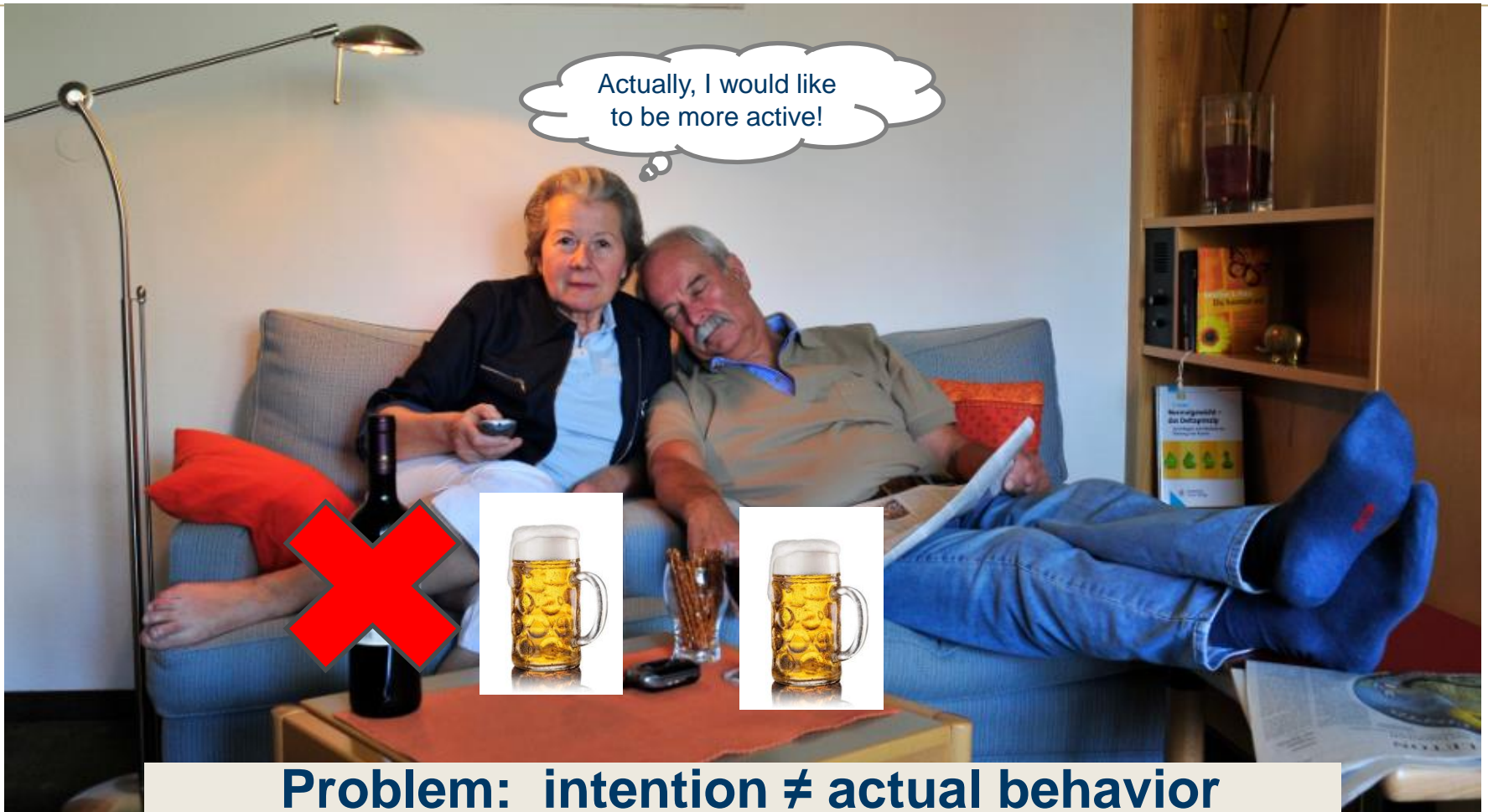
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PA recommendations and co-morbidities





46% of intenders do not act \rightarrow „intention-behavior-gap“

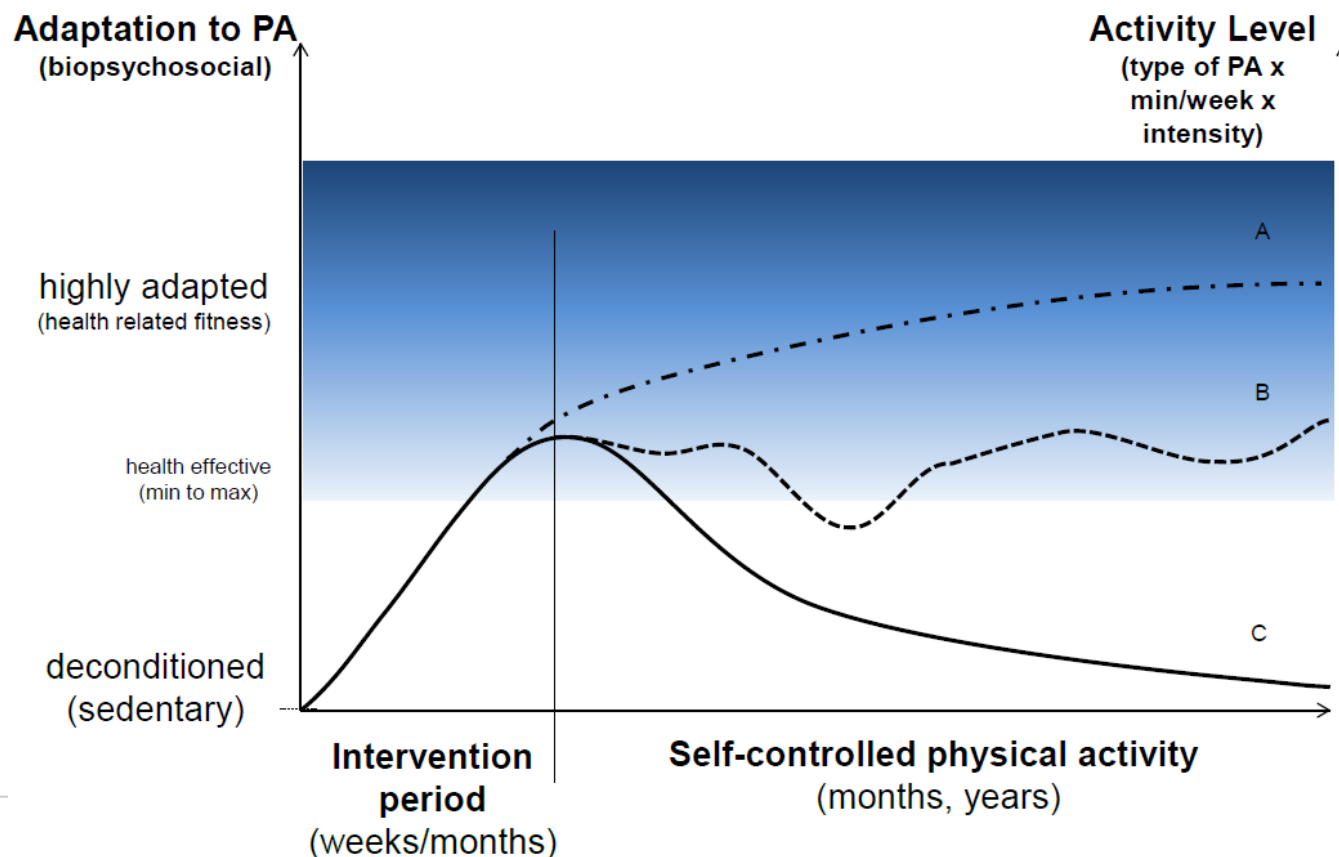
[Rhodes et al., 2013]



Behavioral exercise programs / therapy (BET)

Goal: making positive health effects sustainable

Affected individuals are introduced to self-directed physical activity and can maintain it for weeks, months or years.



The Integrative Bio-psycho-social Model of the International Classification of Functioning, Disability and Health (ICF)

Disability and Rehabilitation

An international, multidisciplinary journal

<http://informahealthcare.com/dre>
ISSN 0963-8288 print/ISSN 1464-5165 online

Disabil Rehabil, Early Online: 1-10
© 2014 Informa UK Ltd. DOI: 10.3109/09638288.2014.891056

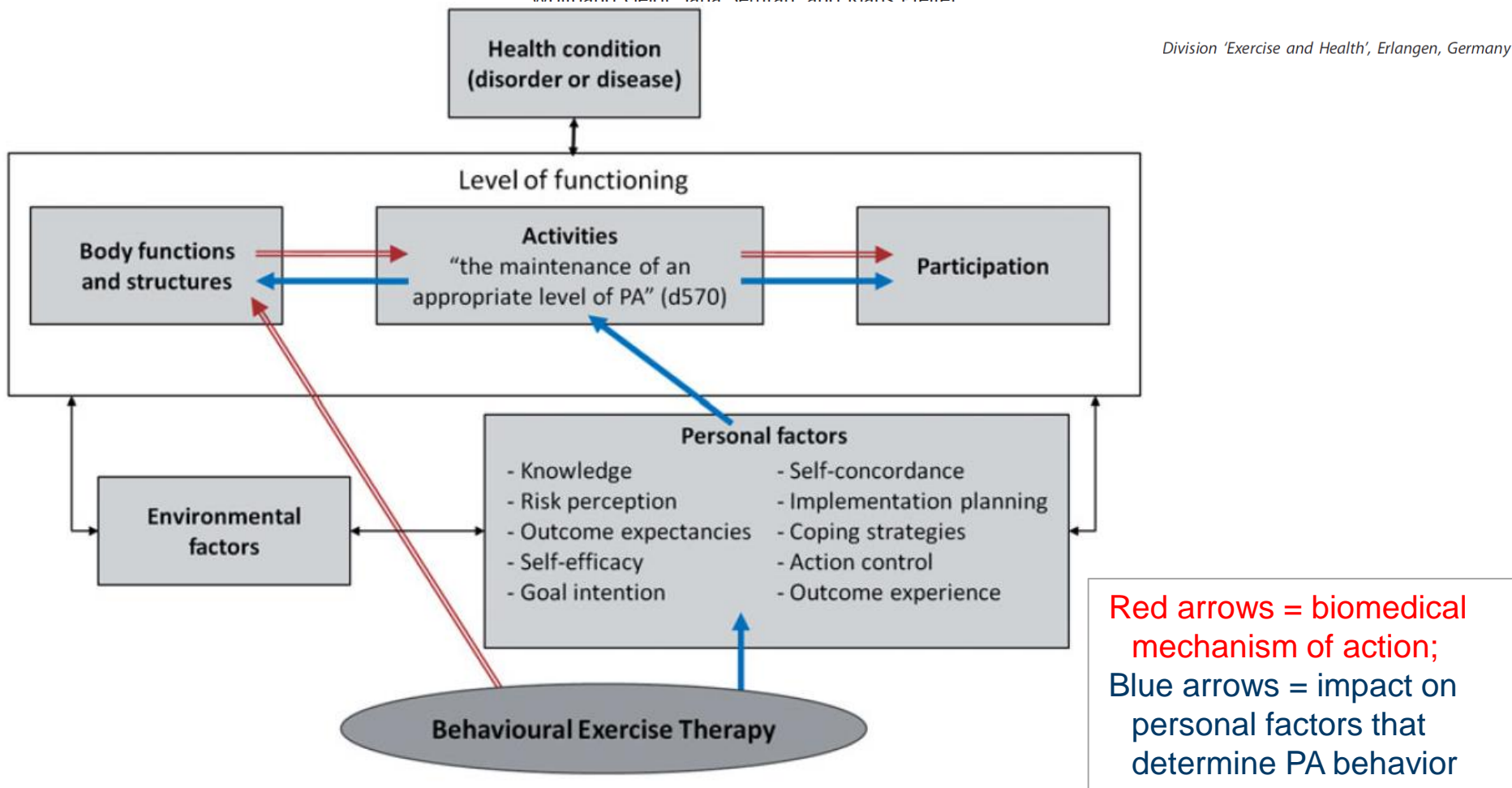
inform
healthcare

PERSPECTIVES IN REHABILITATION

Health behaviour change theories: contributions to an ICF-based behavioural exercise therapy for individuals with chronic diseases

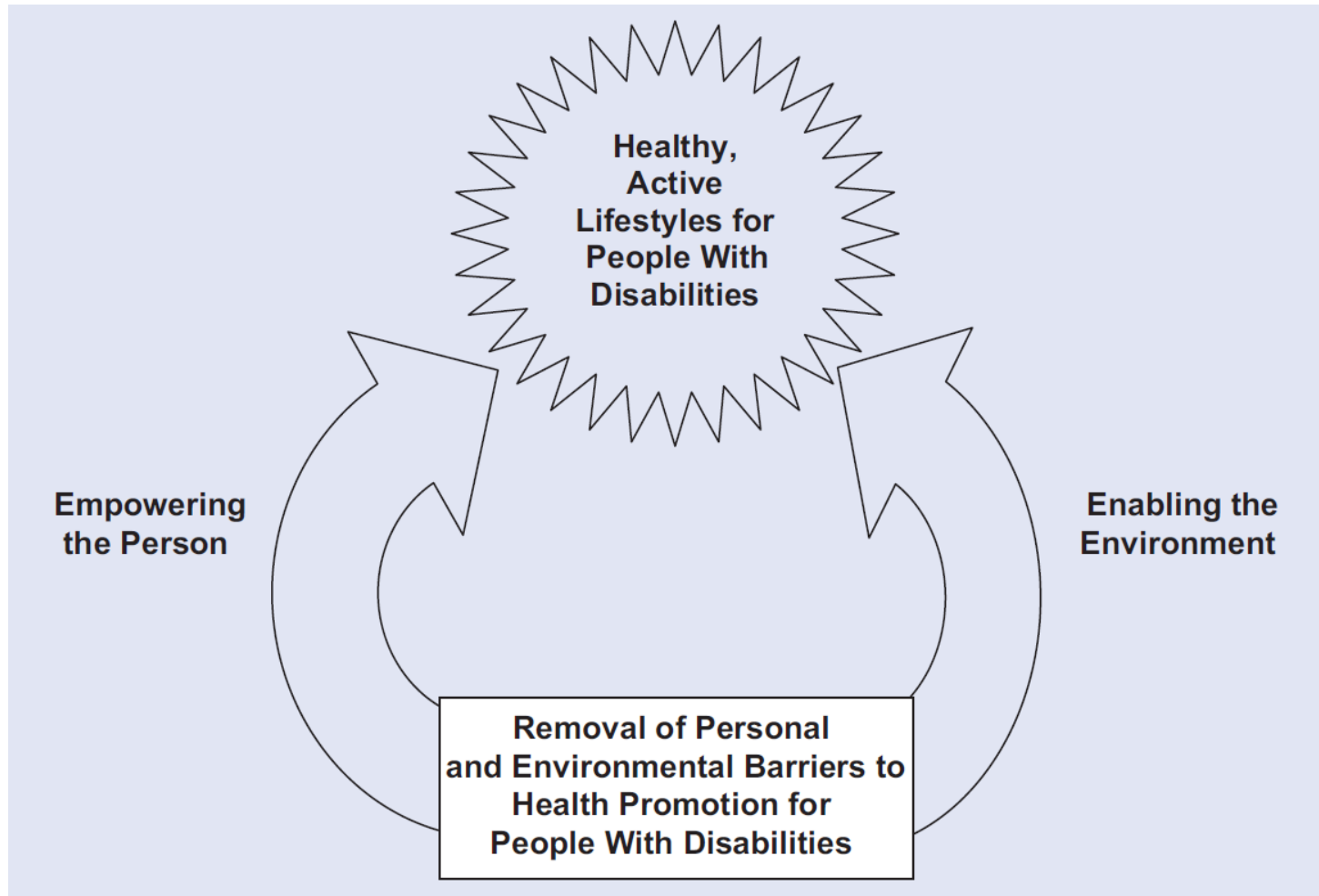
Wolfgang Geidl, Jana Semrau, and Klaus Pfeifer

Division 'Exercise and Health', Erlangen, Germany





Challenge for considering an **individually ,appropriate level‘ of PA:** **Behavior Change and/or Empowerment?**





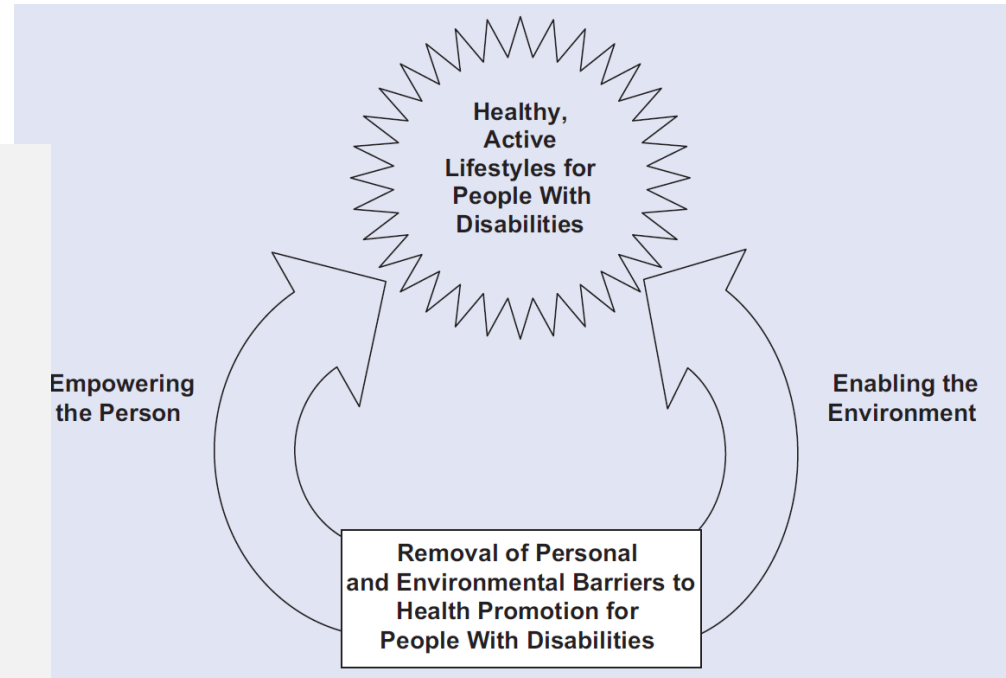
Challenge for considering an individually ,appropriate level‘ of PA: Behavior Change and/or **Empowerment?**

Health Educational Perspective

Empowering the person ...

- Enabling people to gain adequate control over their health...
- Acquisition of knowledge and skills in order to optimize physical, psychological and social function...

... stands for the enhancement of individual competences.



[Rimmer & Rowland, 2008]



Question?



What do adult people (non-athletes) need to have/to possess so that they can make decisions regarding physical activity and act on them in a way that is good for their own health and wellbeing?

- Think – Pair – Share:
 - Make notes individually with respect to important personal factors.
 - Discuss with another student, the **three most important** personal factors (in your shared view)
 - Share your results with the group



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Physical activity-related health competence as an integrative objective in exercise therapy

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ORIGINAL RESEARCH

Competencies for a Healthy Physically Active Lifestyle—Reflections on the Model of Physical Activity-Related Health Competence

Johannes Carl, Gorden Sudeck, and Klaus Pfeifer

Background: The World Health Organization’s Global Action Plan on Physical Activity 2018–2030 states that physical activity interventions should strengthen peoples’ competencies for health. Yet, frameworks that bundle pivotal competencies for a healthy and physically active lifestyle have not been extensively discussed in the past. **Results:** In the present article, the authors therefore present the model of Physical Activity-related Health Competence (PAHCO), an integrative structure model including the 3 areas of movement competence, control competence, and self-regulation competence. After providing a rationale for the use of the competence concept, the authors focus on implications from the PAHCO model to guide interventions for the promotion of a healthy and physically active lifestyle. The authors argue that the PAHCO model is located at the interface between health literacy and physical literacy, research areas that have gained increasing scholarly attention in recent years. In addition, PAHCO appears to be compatible with the concept of health capability because it can represent the important aspect of agency. **Conclusions:** The article concludes with a scientific positioning of model components and some empirical results that have been accumulated so far.



Health Literacy

Knowledge
Motivation
Competences

Access, Understand,
Appraise and Apply **Health
Information**

Health Literacy (Systematic Review Sorensen et al., 2012)

- is linked to literacy
- and entails people's knowledge, motivation and competences
- to access, understand, appraise, and apply **health information**
- **in order to make judgements and take decisions to maintain or improve quality of life during the life course"**



Physical Literacy

Physical
Capabilities

Knowledge &
Understanding

Confidence

Motivation

**Physical Activity-
related
Health Competence
(PAHCO)**

Health Literacy

Knowledge
Motivation
Competences

Access, Understand,
Appraise and Apply **Health
Information**

“...for maintaining purposeful physical pursuits/activities throughout the life course” (Whitehead, 2010; UNESCO, 2015)

„...to make judgements and take decisions [...] to maintain or improve quality of life during the life course“ (Sorensen et al., 2012)

[health-related] Physical Literacy

“...related to healthy active living and the promotion of physical recreation opportunities and positive health choices across the lifespan.”

(Health and Physical Education Curricula, Kanada: Lloyd, Colley & Tremblay, 2010)



Physical Literacy

Physical
Capabilities

Knowledge &
Understanding

Confidence

Motivation

**Physical Activity-
related
Health Competence
(PAHCO)**

Health Literacy

Knowledge
Motivation
Competences

Access, Understand,
Appraise and Apply **Health
Information**

„PAHCO consists of

- (1) cognitive and motor abilities and skills that are necessary to be able to carry out health-enhancing physical activities as well as
- (2) the associated motivational, volitional and social readiness or abilities to self-determined and critical-reflectively embed health-enhancing physical or sporting activities in variable situations of everyday life.”



Domain-specific focus on integrating physical and health literacy is in line with the WHO Global Action Plan on Physical Activity Promotion

GLOBAL ACTION PLAN ON PHYSICAL ACTIVITY 2018-2030

MORE ACTIVE PEOPLE FOR A HEALTHIER WORLD



WHO GAPPA 2018-2030



CREATE ACTIVE PEOPLE

ACTION 3.1

Strengthen provision of good-quality physical education and more positive experiences and opportunities for active recreation, sports and play for girls and boys, applying the principles of the whole-of-school approach in all pre-primary, primary, secondary and tertiary educational institutions, to establish and reinforce lifelong health and physical literacy, and promote the enjoyment of, and participation in, physical activity, according to capacity and ability.

ACTION 3.2.

Implement and strengthen systems of patient assessment and counselling on increasing physical activity and reducing sedentary behaviour, by appropriately trained health, community and social care providers, as appropriate, in primary and secondary health care and social services, as part of universal health care, ensuring community and patient involvement and coordinated links with community resources, where appropriate.

PROPOSED ACTIONS FOR MEMBER STATES

1. Develop a national communication strategy for physical activity as part of, or aligned with, a national action plan on physical activity to raise awareness and knowledge of the health benefits of physical activity, promote behaviour change and increase health and physical literacy.



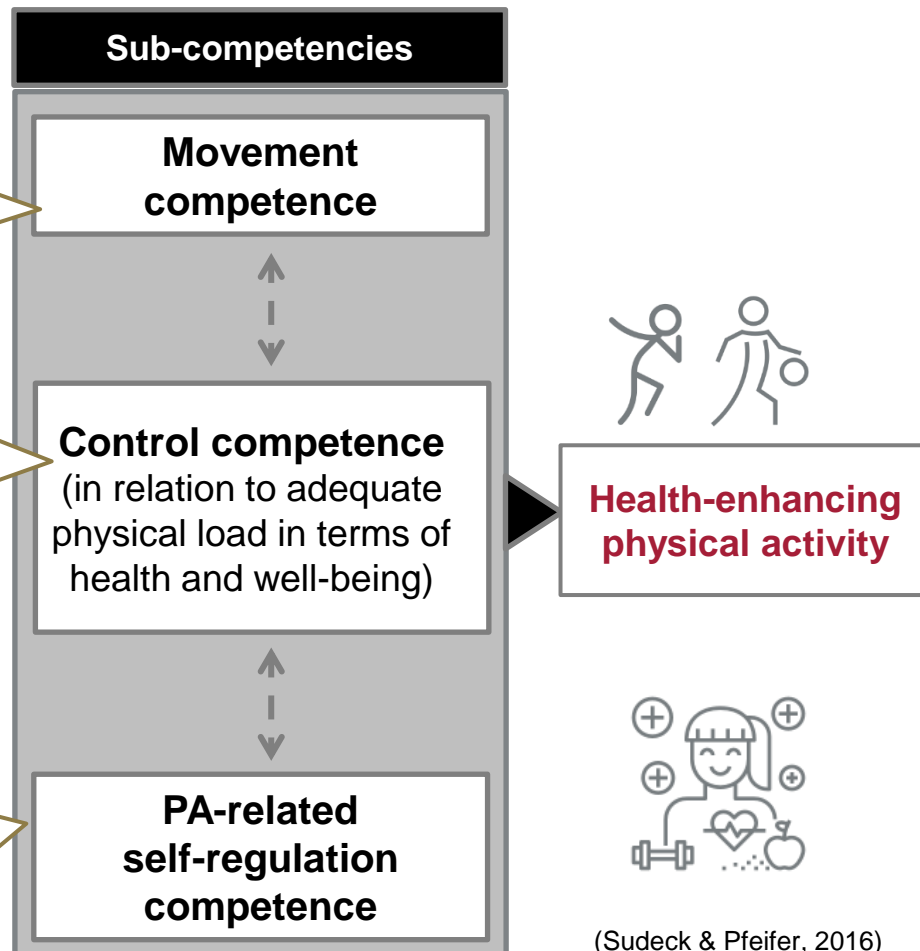
PAHCO entails the sub-competencies of movement, self-regulation and control competence.

Persons with a high level of...

Movement competence can adequately meet the direct movement-related requirements of health-enhancing physical activities.

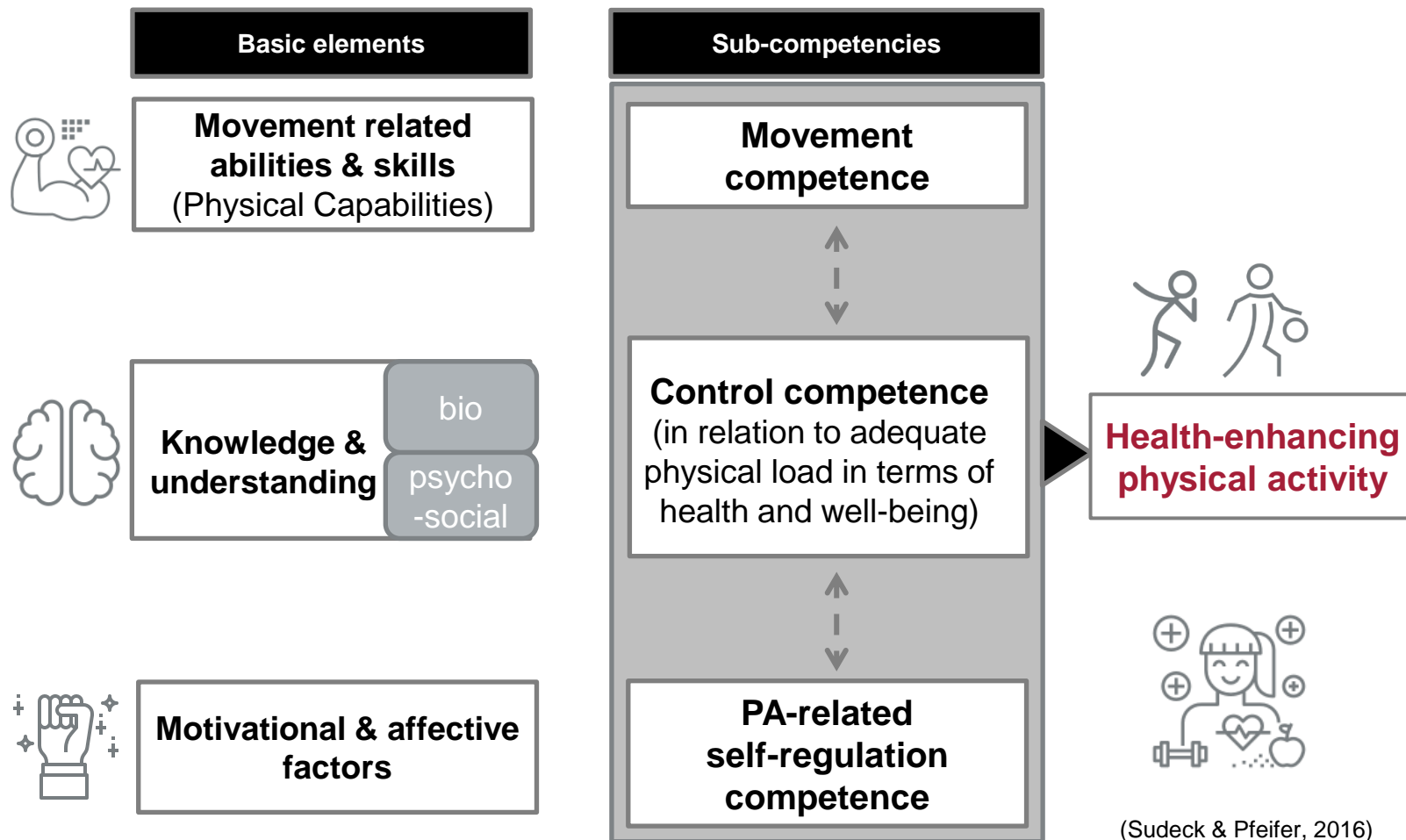
Control competence can adequately direct their own physical loads towards positive effects on health and well-being.

Self-regulation competence can ensure the regularity of physical activity for lasting effects on health and well-being.



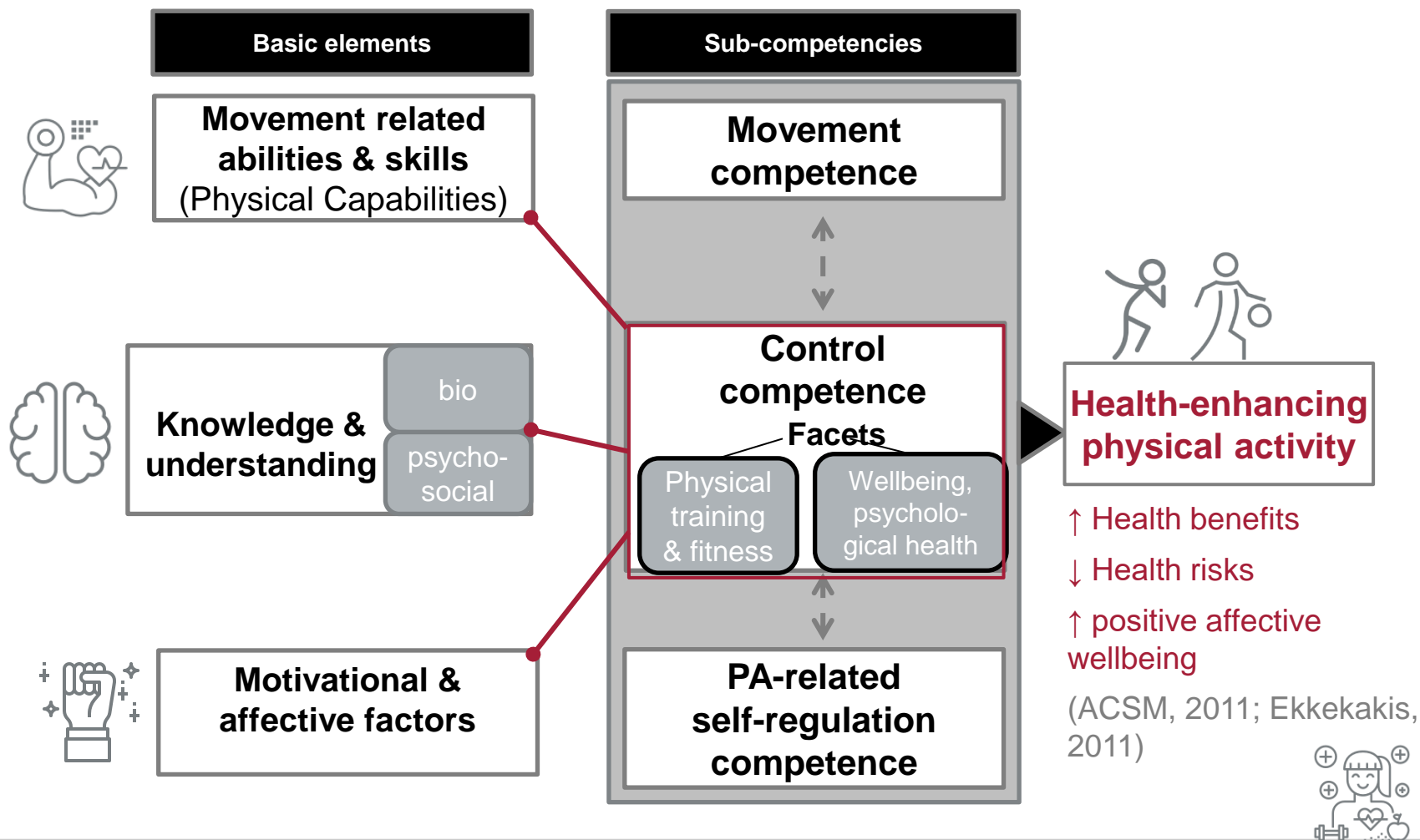


PAHCO sub-competencies are based on specific combinations of integrated basic elements.





Integrating basic elements, control competence comprises two facets.

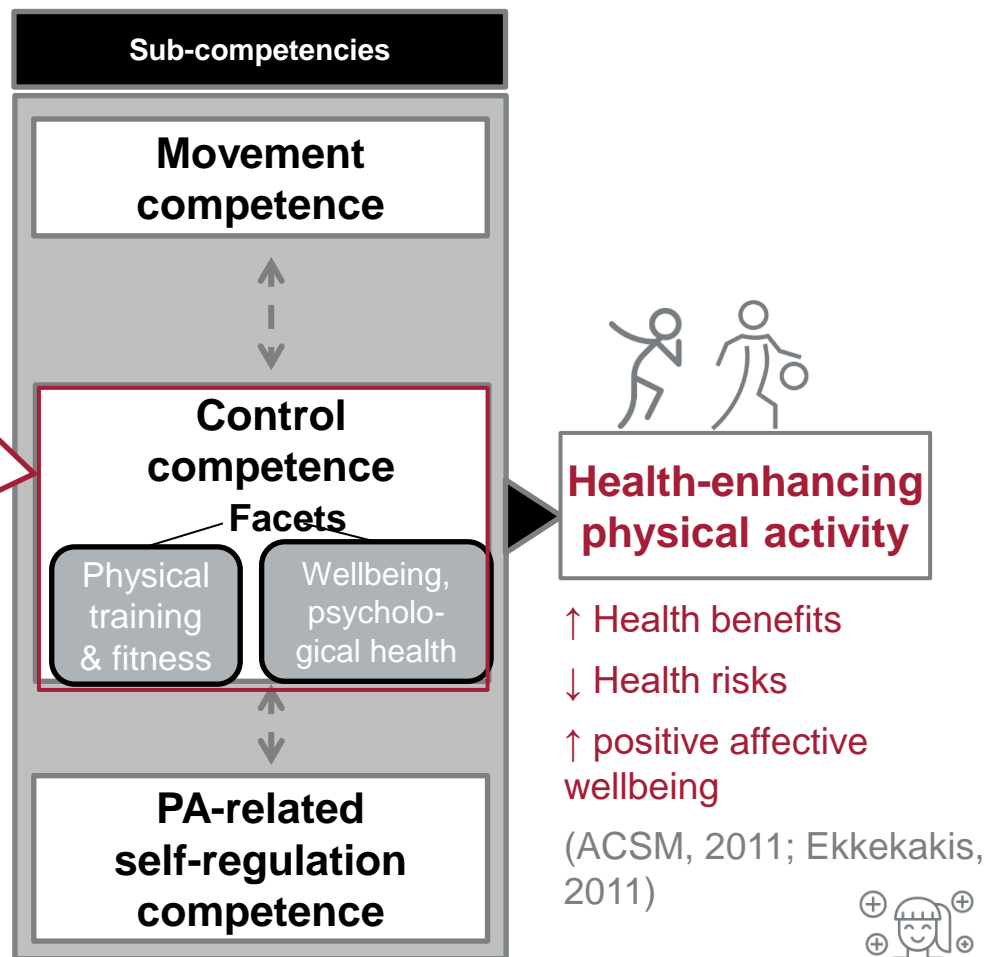




Integrating basic elements, control competence comprises two facets.

Persons with high control competence

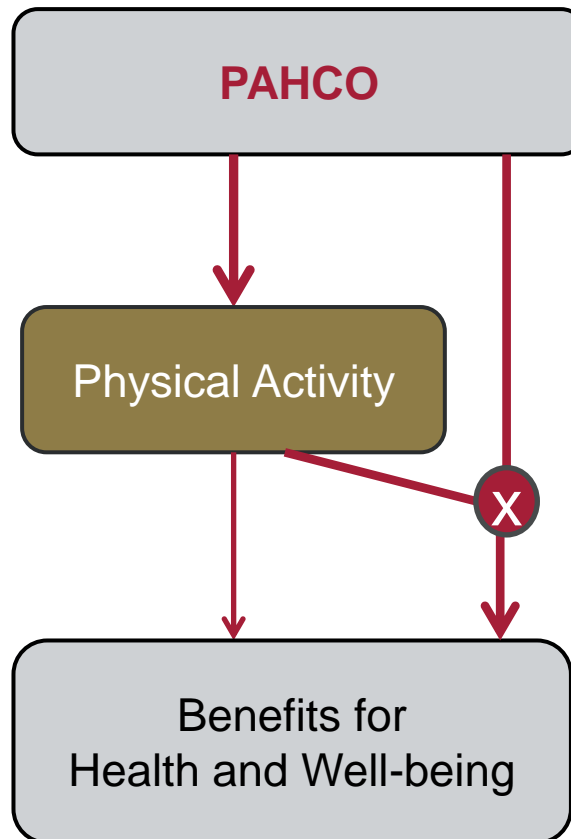
- can select and control physical activities individually in order to achieve positive effects on health and well-being (*and also avoid detrimental effects*)
- Can control adequately their physical strain based on bodily signals (heart rate, ventilation, rate of perceived exertion)





Empirical examples illustrating the main assumptions of the model

Determinant of PA
Behavior
(primary view on
Quantity of Behavior,
[Volume, Frequency])



Decisive for
qualities of PA behavior
with respect to benefits
for health and well-being



Questionnaire-based Assessment of PAHCO

(1) Movement Competence



- addressing demands of endurance, strength or coordinate demands
- Body Awareness



Control Competence

- (2) Physical Load and Training



- (3) PA-specific Affect Regulation

PA-specific self-regulation competence





- (4) Volitional Self-control



- (5) Motivational Competence

RESEARCH QUARTERLY FOR EXERCISE AND SPORT
2021, VOL. 92, NO. 3, 514–528
<https://doi.org/10.1080/02701367.2020.1752885>

Competencies for a Healthy Physically Active Lifestyle—Validation of an Integrative Model



Johannes Carl , Gorden Sudeck^b, Wolfgang Geidl^b, Konrad Schultz , and Klaus Pfeifer^a

Gorden Sudeck¹ · Klaus Pfeifer²

¹Institute of Sport Science, University of Tübingen, Tübingen, Deutschland

²Institute of Sport Science and Sport, Friedrich-Alexander University Erlangen-Nürnberg, Erlangen, Deutschland

Physical activity-related health competence as an integrative objective in exercise therapy and health sports – conception and validation of a short questionnaire

Nina Schormo¹  · Gorden Sudeck²  · Vanessa Gut¹  · Achim Conzelmann¹ · Julia Schmid¹ 

¹Institute of Sport Science, University of Bern, Bern, Switzerland

²Institute of Sport Science, University of Tübingen, Tübingen, Germany

Choosing an activity that suits: development and validation of a questionnaire on motivational competence in exercise and sport

Control Competence

(in relation to adequate physical load in terms of health and well-being)

Physical load and training

(4) I know what to pay attention to in relation to my body in order to avoid excess load or insufficient load

(7) I can use my body signals (pulse, breathing speed) very well to gauge and regulate the amount of physical load

(10) If I want to enhance my health by strengthening trunk muscles (back, stomach), I am confident that I know the right exercise to do

(11) I know how to use physical training to improve my endurance in the best possible way.

(19) If my muscle are tensed up, I know exactly how to counter this through physical activity.

(20) I am able to adjust my training effort well to my physical condition.

PA-specific affect regulation

(1) I am well able to improve my depressed mood by exercising.

(5) I am well able to work of pent-up stress and inner tension through exercise.

(13) If I am feeling down, I can distract myself well through PA.

(16) I am able to regulate my mood through PA

PA specific self-regulation
(motivational-volitional)

Motivational competence

(6) I know exactly what is important to me in an exercise and sport activity so that I like it.

(21) I can recognize very well whether an exercise and sport activity suits me.

(14) I am very well able to choose from a variety of exercise and sport activities the one that suits me best.

(18) I find it very easy to assess what characterizes different exercise and sport activities.

Volitional self-control

(3) If I have planned to exercise, I generally follow through on this plan.

(8) When I decide to do more exercise, I am very disciplined in implementing this plan.

(15) I stick with my plan to do exercise and I am not easily distracted from that plan.

Movement Competence
(examples from Short-
form questionnaire)

(2) I can sustain a somewhat strenuous physical activity that requires me to breathe a little faster, e.g. walking, slow jogging or cycling, for 30 minutes without a break.

(12) I can carry an object weighing approx. 10 kg up several floors, e.g. a full shopping bag, a full suitcase, a small drinks crate.

(9) I can stand on one leg and reach for an object at the same time and not lose my balance.

(17) My body awareness helps me to cope well with physically demanding situations.

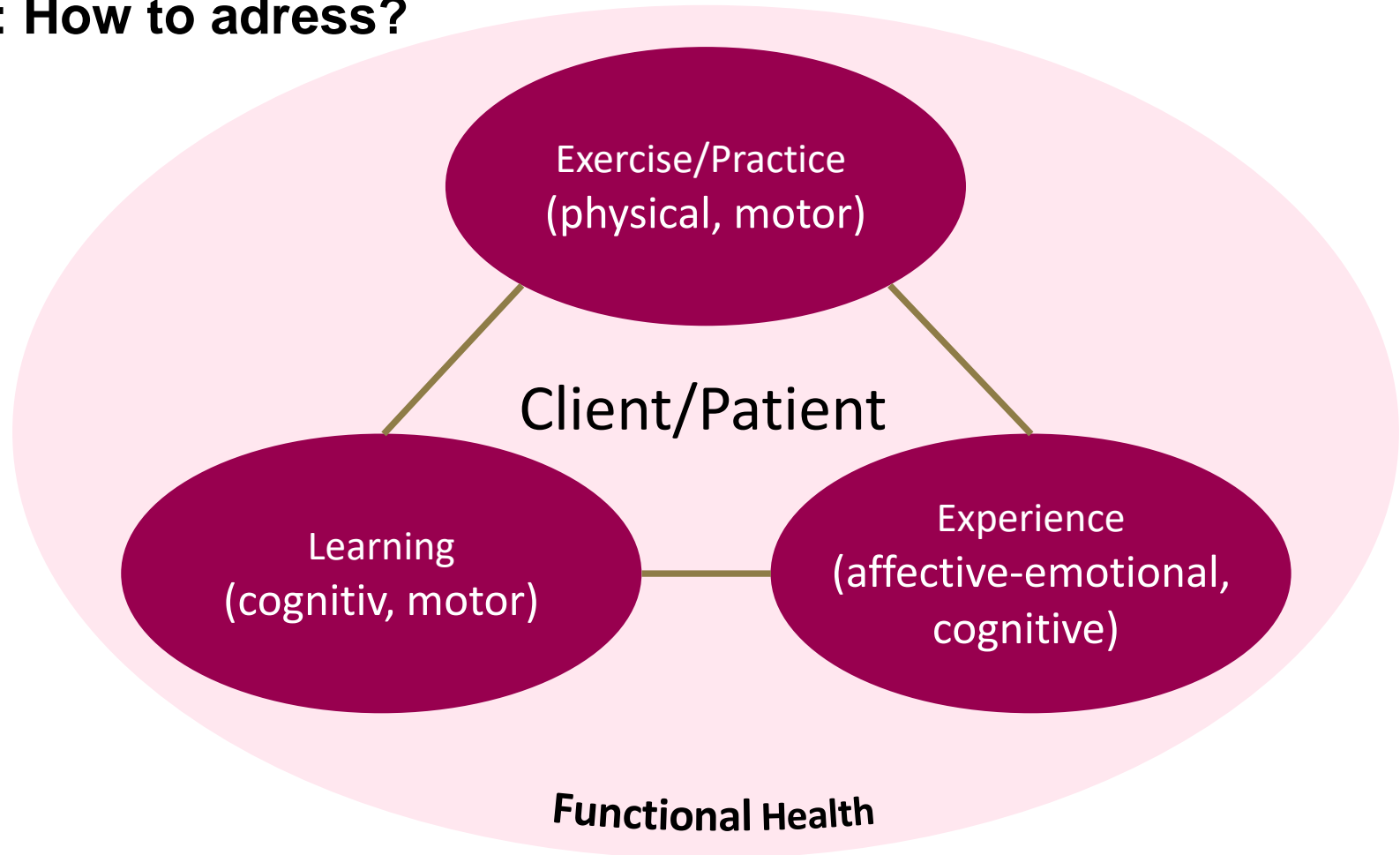
(22) I have the confidence to do physical activities that are challenging for me.

I can do this without problems/I have slight problems/I have moderate problems/I have big problems/I cannot do this

Please answer each of the following questions on a scale of 1 to 5, where "1" means "strongly disagree" and "5" means "strongly agree".



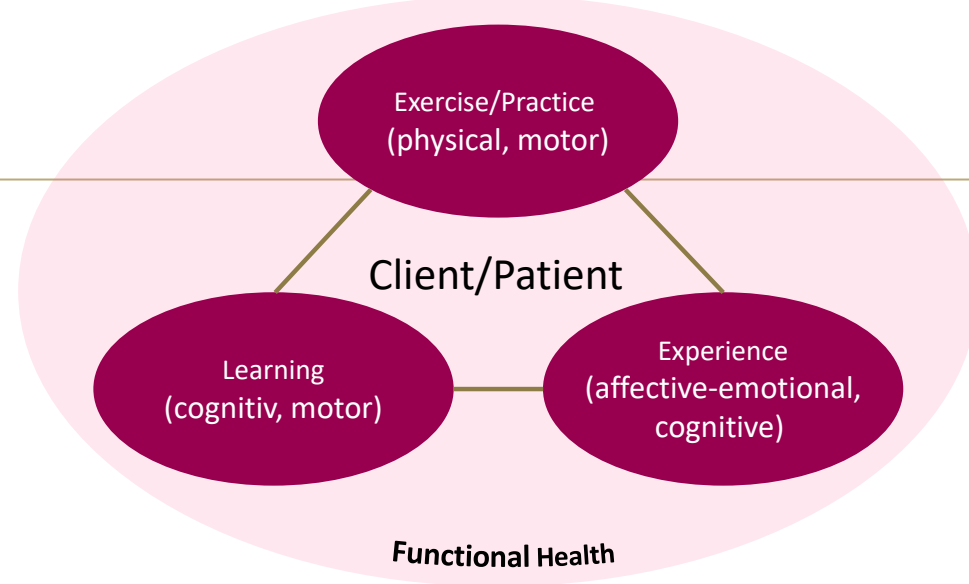
PAHCO: How to adress?



- (Sudeck & Pfeifer 2016, Pfeifer & Sudeck 2016, Carl, Sudeck, Pfeifer 2020)



Basis principles (didactic-methodological)

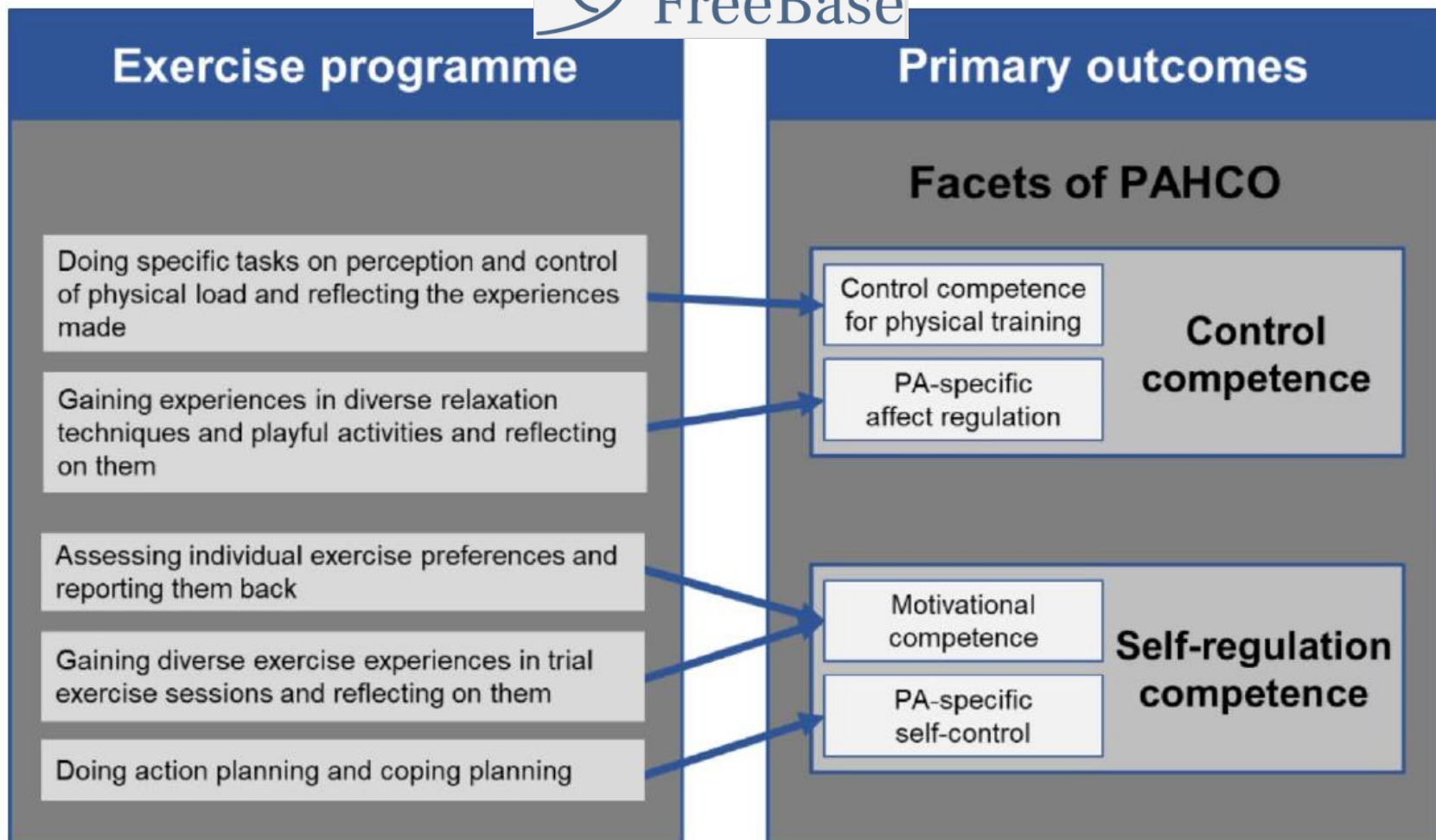


- In accordance with biopsychosocial models of health, **considering personal resources** (beyond focusing on quantitative, physical components of exercise)
- Identify best possible **links between physical-motor actions and transfer of knowledge**
- Providing **meaningful exercise experiences and reflecting on them** (Reflecting in action, reflecting on action; Schön, 1983; Experiential learning)
- Leads to stronger focus on **affective exercise experiences** (i.e., integrating social and playful activities)

PAHCO-based Intervention development: FREEBASE

Multi-modal exercise intervention for people after bariatric surgery

Dr. Julia Schmid (ISPW Bern) & Prof. Dr. Lia Bally (University Hospital Bern)
3-month program with 25 Sessions



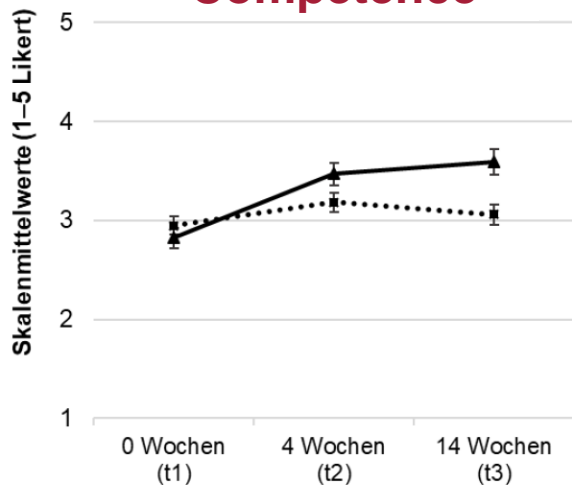
RCT with Pre-, Post- und Follow-Assessments N = 37, Freebase-Group vs Usual Care



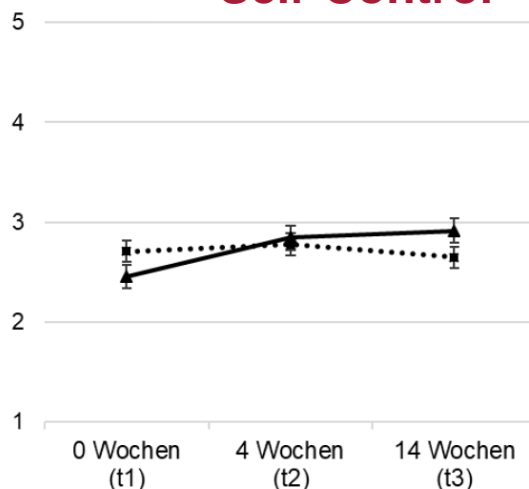
> Sustainable promotion of competencies and effects on physical exercise behavior



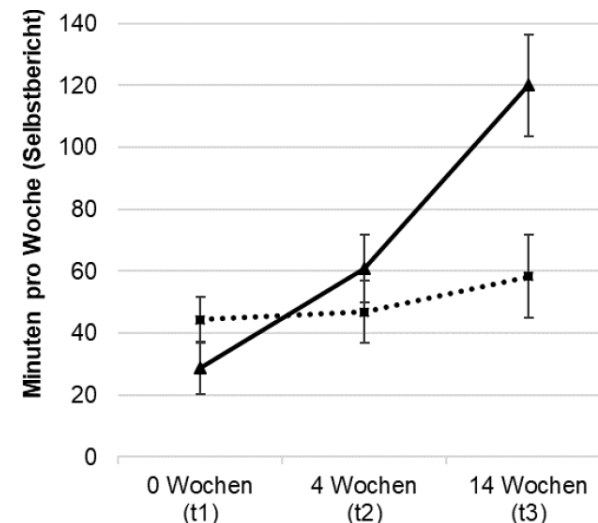
Motivational Competence



Volitional Self-Control



Physical Exercise & Sport



RESEARCH

Open Access

Transdiagnostic efficacy of a group exercise intervention for outpatients with heterogenous psychiatric disorders: a randomized controlled trial



Johanna-Marie Zeibig^{1*}, Britta Seiffer¹, Gorden Sudeck¹, Inka Rösel², Martin Hautzinger³ and Sebastian Wolf^{1,3}

Wolf et al. *BMC Psychiatry* (2021) 21:540
https://doi.org/10.1186/s12888-021-03541-3


BMC Psychiatry

STUDY PROTOCOL

Open Access

Efficacy and cost-effectiveness of a Transdiagnostic group-based exercise intervention: study protocol for a pragmatic multi-site randomized controlled trial



Sebastian Wolf^{1,2*} , Britta Seiffer^{1,2}, Johanna-Marie Zeibig^{1,2}, Jana Welkerling^{1,2}, Leonie Louisa Bauer^{1,2}, Anna Katharina Frei^{1,2}, Thomas Studnitz^{1,2}, Stephanie Rosenstiel¹, David Victor Fiedler¹, Florian Helmhold³, Andreas Ray³, Eva Herzog⁴, Keisuke Takano⁴, Tristan Nakagawa⁴, Saskia Kropp⁵, Sebastian Franke⁵, Stefan Peters⁶, Nadja El-Kurd⁷, Lena Zwanzleitner⁸, Leonie Sundmacher⁵, Ander Ramos-Murguialday³, Martin Hautzinger², Gorden Sudeck¹ and Thomas Ehring⁴



State of mental health care in Germany



High prevalence of mental disorders

(Global Burden of Disease Collaborative Network, 2020)



Health care deficient

(Nübling et al., 2014;
Bundespsychotherapeutenkammer, 2021)



Positive effects of physical activity

(Ashdown-Franks et al., 2020; Aylett et al., 2018; Banno et al., 2018; Morres et al., 2019; Schuch et al., 2016; Stubbs et al., 2018)



Lack of sports programs in the outpatient setting

(Henkel et al., 2016)



ImPuls – A group based exercise intervention for outpatients with heterogenous psychiatric disorders

(mild-to-moderate depression, anxiety disorder, sleep disorder)

Supervised
aerobic exercise



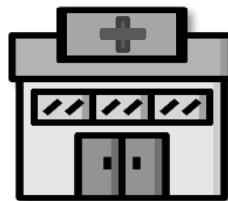
2-3x / week 30 min.

Intensity ≥ 64 % of max. heart rate

Group sessions



Behavior change techniques
(Michie et al., 2011)



Non-supervised
exercise

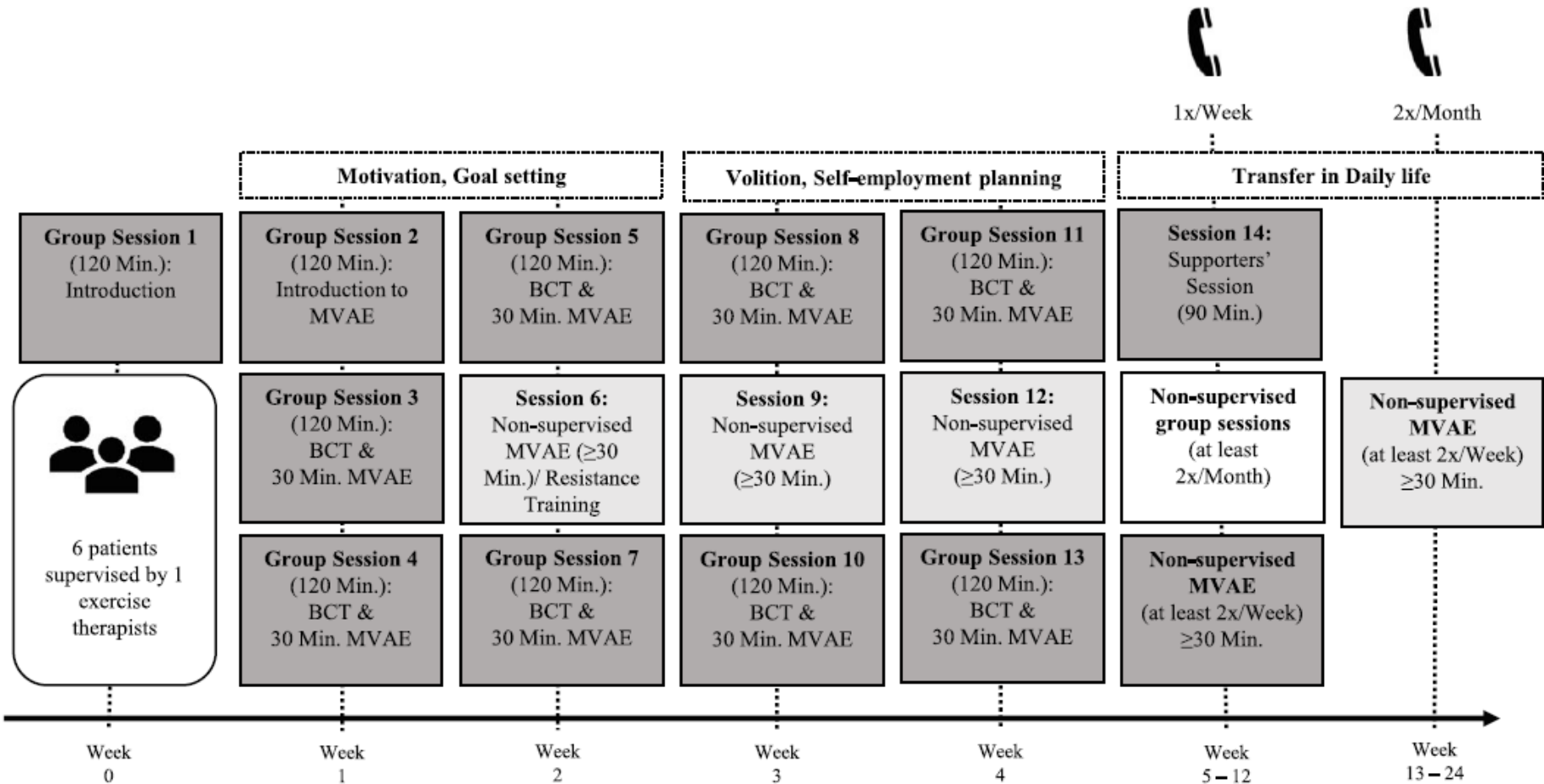


Transfer to
daily life routines





Exercise Interventions including Behavior Change Techniques



12-week supervised intervention phase



Table 1

Selection of behavior change techniques of the group exercise intervention ImPuls to promote long-lasting exercise behavior and exercise-specific affect regulation (adapted from [Zeibig et al. \(2021\)](#)).

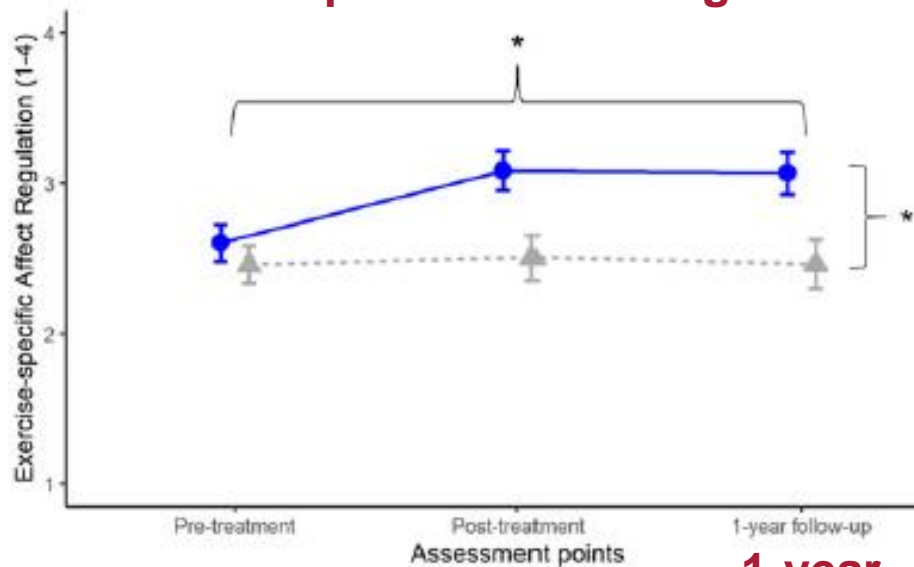
Focus	Behavior change technique	Aim
Long-lasting exercise behavior	Selection of a preferred activity	finding of an enjoyable exercise activity that conforms to optimal modalities of exercise
	Identification of barriers to exercise and techniques to overcome those	being able to identify and overcome barriers that might hinder participants from (long-lasting) exercise engagement
	Social support (family, friends, trainer)	use support of social network to integrate exercise into daily life routines
Exercise-specific affect regulation	Education about optimal modalities of exercise to experience positive psychological effects	increasing knowledge about how to reduce negative affective states by using exercise
	Goal setting and self-monitoring of goal achievement	setting goals regarding symptom improvement to measure improvement in symptoms due to exercise engagement
	Reflection about positive effects of exercise/experiences with exercise using a mood barometer prior and after exercise engagement	deliberately experiencing immediate positive effects of exercise on symptoms of mental disorders/affect



Sustainable Effects in the 1-year follow-up assessment



PA-specific Affect Regulation



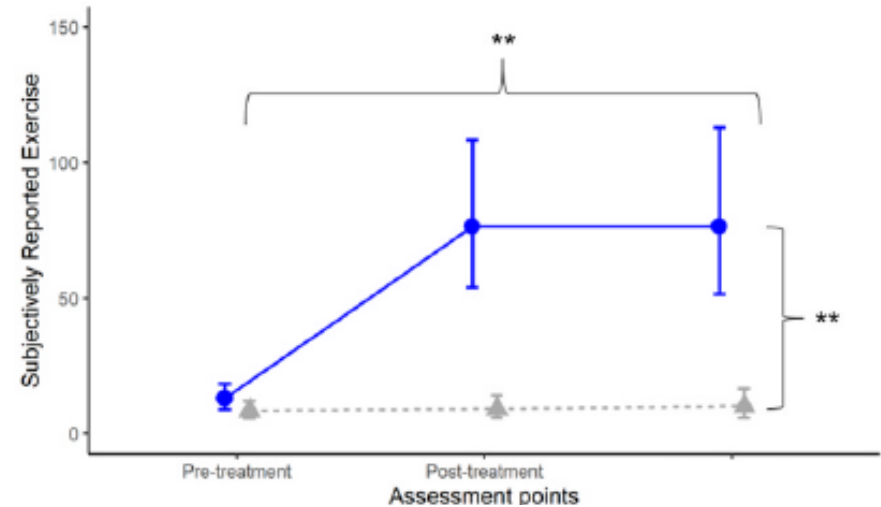
PRE

POST

1-year
Follow-up



Physical Exercise and Sport



PRE

POST

1-year
Follow-up



Integrating physical and health literacy into individually tailored physical activity promotion activities across diverse preventive, therapeutic and rehabilitative settings

...without forgetting the
environmental factors

GLOBAL ACTION PLAN ON PHYSICAL ACTIVITY 2018-2030

**MORE ACTIVE
PEOPLE FOR
A HEALTHIER
WORLD**

