Træning med borgere i eget hjem

Styrketræning

– anbefalinger til ældre, ældre skrøbelige og ældre med enkelte diagnoser

DOSERING

INTENSITET

PROGRESSION

MOTIVATION

Resistance training general recommendations for healthy older adults

Program variable	Recommendation†	Details
Sets	1–3 sets per exercise per muscle group	1 set for beginners and older adults with frailty progressing to multiple sets (2–3) per exercise.
Repetitions	8–12 or 10–15	Perform 6–12 reps with variation for muscular strength for healthy older adults. Perform 10–15 repetitions at a lower relative resistance for beginners.
Intensity	70–85% of 1RM	Begin at a resistance that is tolerated and progress to 70–85% of 1RM using periodization. Lighter loads are recommended for beginners, or individuals with frailty, or special considerations such as cardiovascular disease and osteoporosis. Exercises should be performed in a repetition-range intensity zone that avoids going to failure to reduce joint stress.
Exercise selection	8–10 different exercises	Include major muscle groups targeted through multijoint movements (e.g., chest press, shoulder press, triceps extension, biceps curl, pull-down, row, lower-back extension, abdominal crunch/curl-up, quadriceps extension or leg press, leg curls, and calf raise).
Modality	Free-weight or machine-based exercises	Beginners, frail older adults, or those with functional limitations benefit from machine-based resistance training (selectorized weight or pneumatic resistance equipment), training with resistance bands, and isometric training. High functioning older adults gain added benefit from free-weight resistance training (e.g., barbells, dumbbells, kettlebells, and medicine balls).
Frequency	2–3 days per week, per muscle group	Perform on 2–3 nonconsecutive days per week, per muscle group, may allow favorable adaptation, improvement, or maintenance.
Power/explosive training	40–60% of 1RM	Include power/explosive exercises where high-velocity movements are performed during the concentric phase at moderate intensities (i.e., 40–60% of 1RM) to promote muscular power, strength, size, and functional tasks.
Functional movements	Exercises to mimic tasks of daily living	Healthy, high functioning older adults benefit from the inclusion of multijoint, complex, and dynamic movements, with base of support or body position variations.

*RM = repetition maximum.
†General guidelines are provided. Resistance training programs should include variation in intensity and program variables. Strength exercises should be performed before endurance training during concurrent training sessions to optimize strength gains.

THE JOURNAL OF STRENGTH & CONDITIONING RESEARCH

Resistance Training for Older Adults: Position Statement From the National Strength and Conditioning Association

Fragala et al. The Journal of Strength & Conditioning Research33(8):2019-2052, August 2019.

Resistance training guidelines for older adults with frailty

Variable	Recommendation
Resistance training	Perform 2–3 times per week, with 3 sets of 8–12 repetitions at an intensity that starts at 20–30% of 1RM and progresses to 80% of 1RM.
Power	Include power exercises performed at high speed of motion and low to moderate intensity (i.e., 30–60% of 1RM) to induce marked improvements in the functional task performance.
Functional training	Include exercises in which daily activities are simulated, such as the sit-to-stand exercise, to optimize the functional capacity.
Endurance training	Complements resistance training adaptations. Begin once strength and balance are improved. May include walking with changes in pace, incline and direction, treadmill walking, step-ups, stair climbing, and stationary cycling. Start at 5–10 min and progress to 15–30 min. The Rate of Perceived Exertion scale is an alternative method for prescribing exercise intensity, and an intensity of 12–14 on the Borg scale seems to be well tolerated.
Balance training	Include several exercise stimuli, such as line walking, tandem foot standing, standing on one leg, heel-toe walking, stepping practice, and weight transfers from one leg to the other.
Progression	Include gradual increases in the volume, intensity, and complexity of the exercises.

*RM = repetition maximum.
†Exercises should be performed with proper form and technique. Form and technique should be established before exercise progression and maintained during progression.

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Summary of exercise modifications

Condition	Modification
Frailty	Start at a lower resistance, progress more slowly, limit end point to volitional fatigue (start at 8–12 reps at 20–30% of 1RM and progress to 80% of 1RM).
Mobility limitations	Consider exercises in seated position.
Mild cognitive impairment	Select simple exercises. May require extrainstruction and demonstration.
Diabetes	Monitor blood glucose before and after training. Consider special considerations of associated cardiovascular disease, nerve disease, kidney disease, eye disease, and orthopedic limitations.
Osteoporosis	Begin at a lower intensity. Train balance, but exert extra care to prevent falls. Focus on form and technique and use caution with bending and twisting. Include postural exercises (spinal extension).
Joint pain or limited range of motion (arthritis)	Double-pinned machines may restrict ROM for joint pain, discomfort, and/or limited ROM. To allow for training through the pain-free part of the ROM and attain a training effect.
Poor vision, equilibrium and balance (falling), low-back pain, and dropping weights	Consider weight machines (as opposed to free weights).

*RM = repetition maximum.

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Hvorfor så meget træning?

Progressiv superviserede styrketræning under og efter udskrivning – ældre medicinske patient

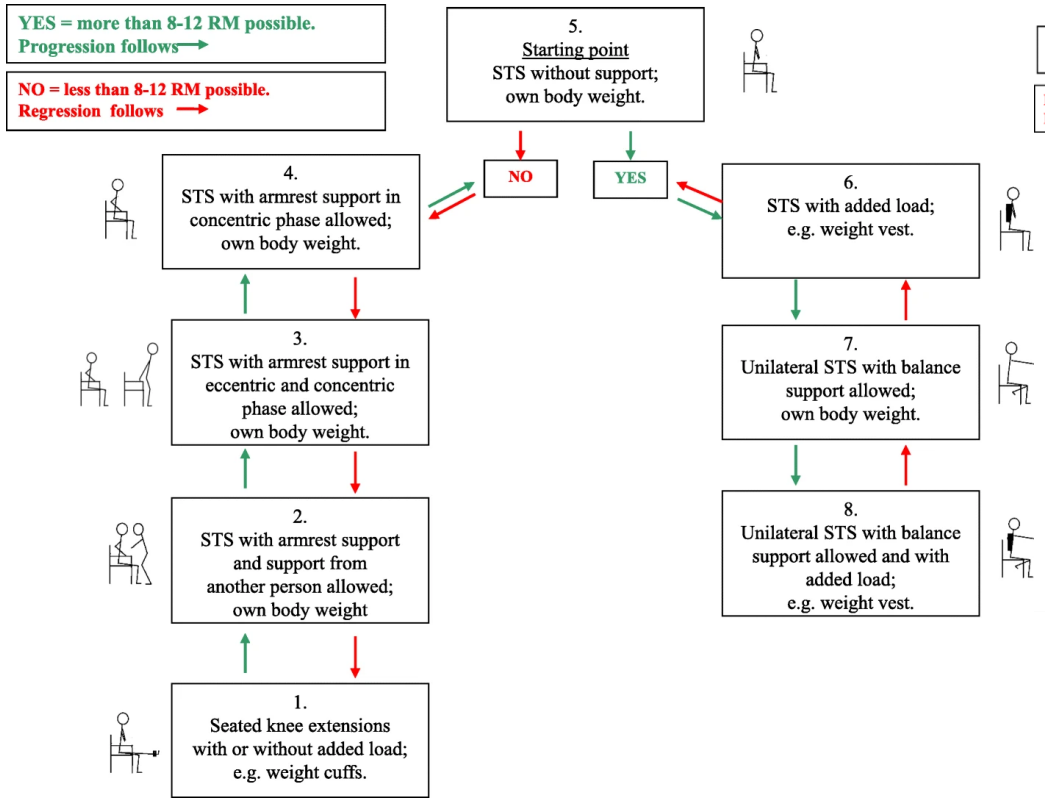
2 øvelser: Rejse-sætte sig og hælløft

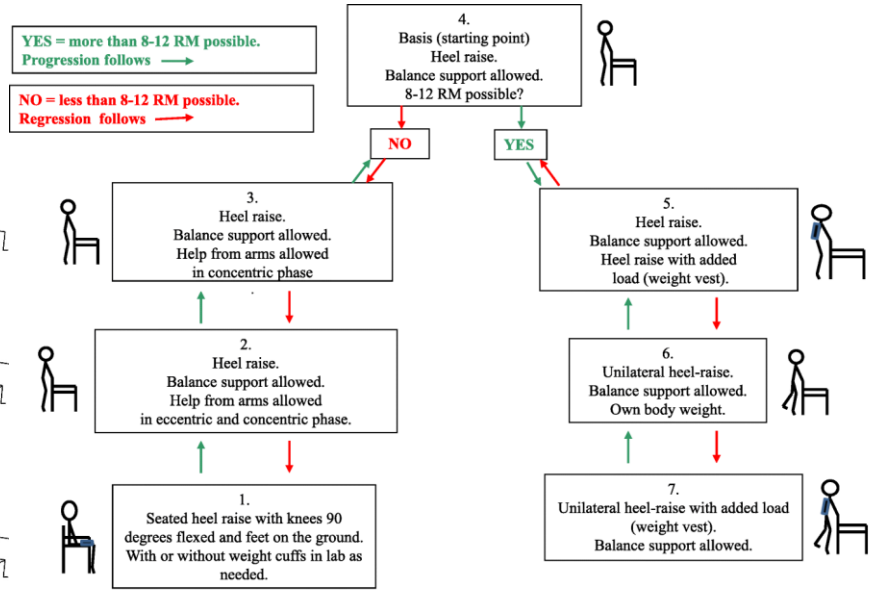
8-12 gentagelser (8-12 RM)

3 sæt

5 uger

= Ingen effekt på styrke eller funktion





M.M Pedersen et al (2019) *A randomized controlled trial of the effect of supervised progressive cross-continuum strength training and protein supplementation in older medical patients: the STAND-Cph trial*. Trials 20: 655

Hvorfor så meget træning?

Progressiv superviserede styrketræning – ældre hjemmeboende borgere

Alder 86 år

Får hjemmepleje pga. funktionelle eller medicinske problematikker

5-7 øvelser: Low-cost equipment (elastik, vandflasker, stol, kropsvægt)

8-12 gentagelser (8-12 RM)

2-4 sæt

35 uger

= Effekt på styrke og funktion

Phase	Length (Weeks)	Number of exercises	Description of exercises	Series	Repetitions performed
1	5	5	Rowing, chest press, squats, biceps curl, knee extension	2	10-12[b]
2	10	5	Same as phase 1	3	10–12
3	10	6	Same as phase 1 + shoulder press	3	8–10
4	10	7	Same as phase 3 + up-and-go[a]	4	8–10

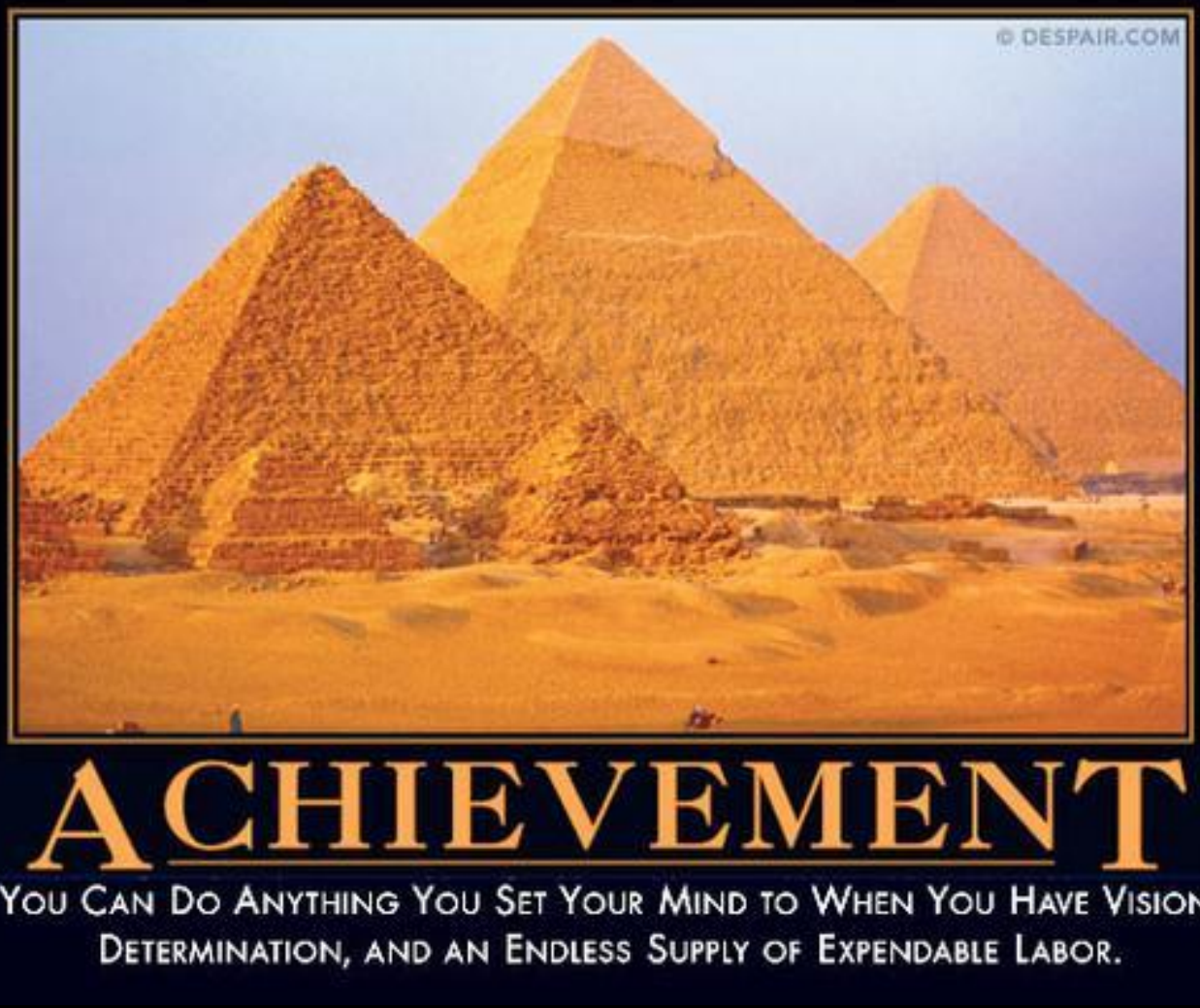
[a] Rising from a chair, walking 3 m and turning around a cone, walking back and sitting down
[b] Introductory phase, repetitions not performed until fatigue

Bårdstu et al. (2020) *Effectiveness of a resistance training program on physical function, muscle strength, and body composition in community-dwelling older adults receiving home care: a cluster-randomized controlled trial*. European Review of Aging and Physical Activity 17:11

Hvordan lykkedes med træning

De 2 foregående effectiveness studier, havde lav attendance ca. 50%

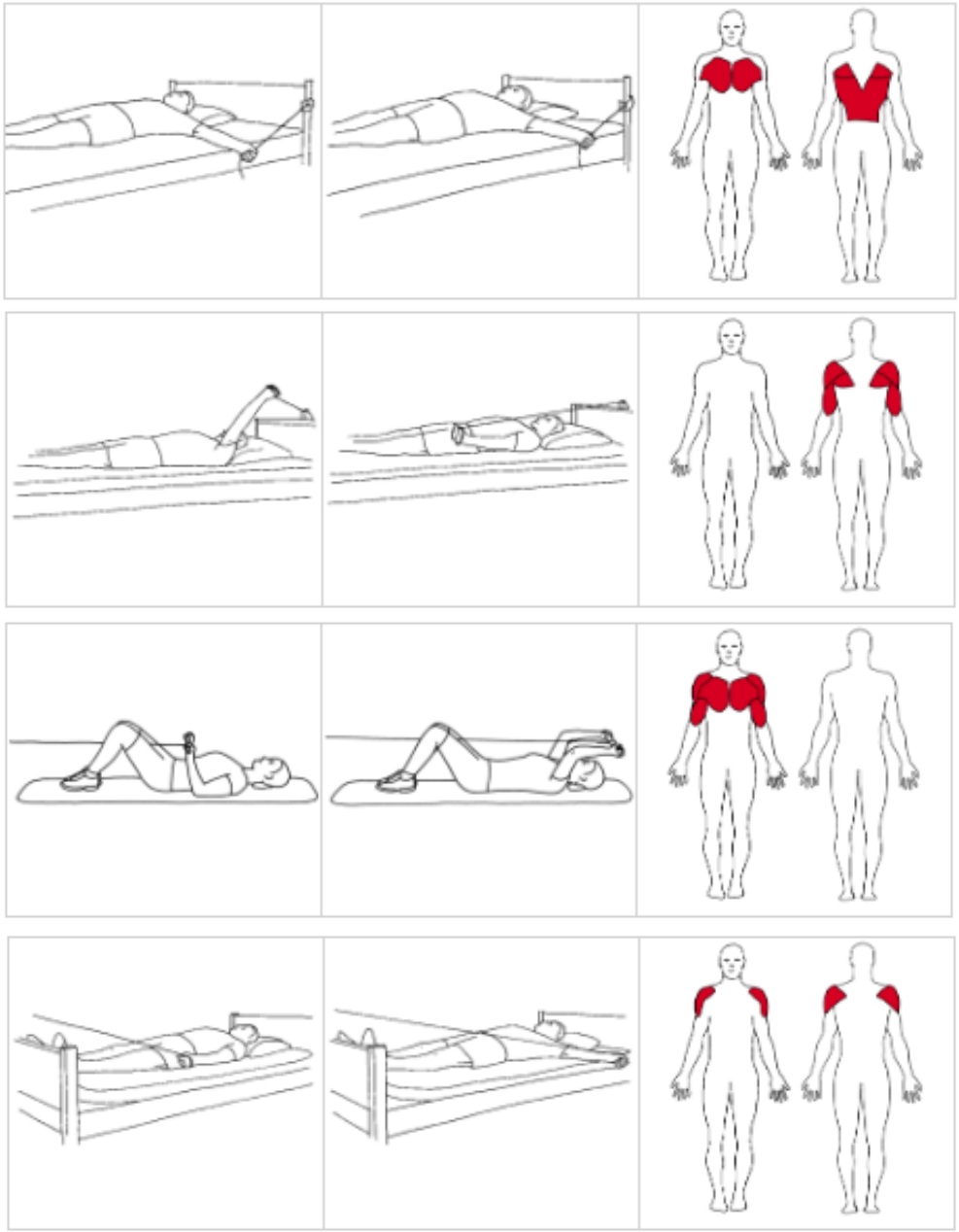
Norsk studie: Først effekt efter 4 måneders træning



Valg af øvelser ex. overkrop I

2 øvelser pr. store muskelgruppe
Full ROM

Langsom progression
2 x uge
8-12 gentagelser
1 → 3 sæt
20 % → 80 % 1 RM

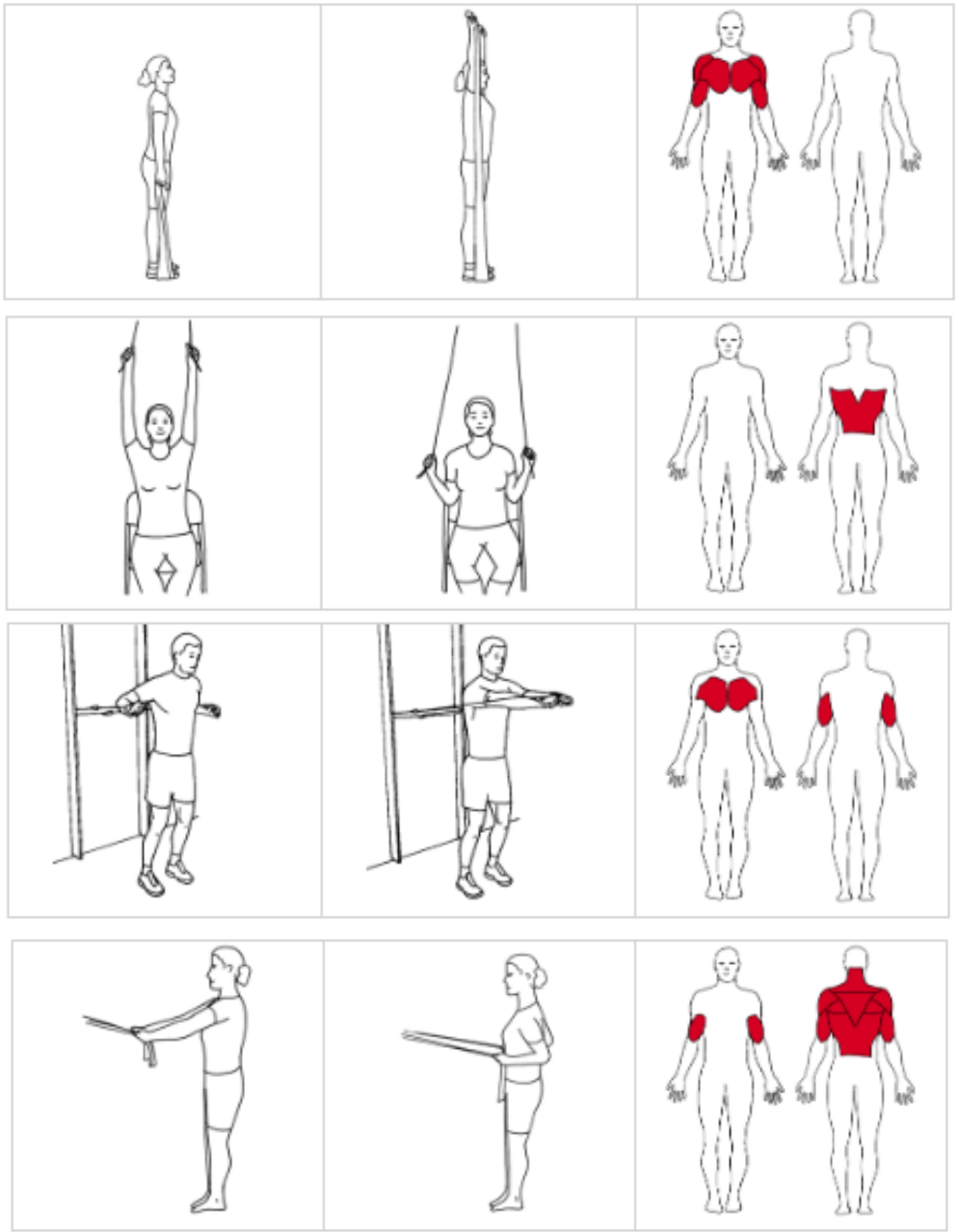


Valg af øvelser ex. overkrop II

2 øvelser pr. store muskelgruppe
Full ROM

Langsom progression
2 x uge
8-12 gentagelser
1 → 3 sæt
20 % → 80 % 1 RM

Progression ved stående øvelser
Bilateralt → Unilateralt
↓ BOS

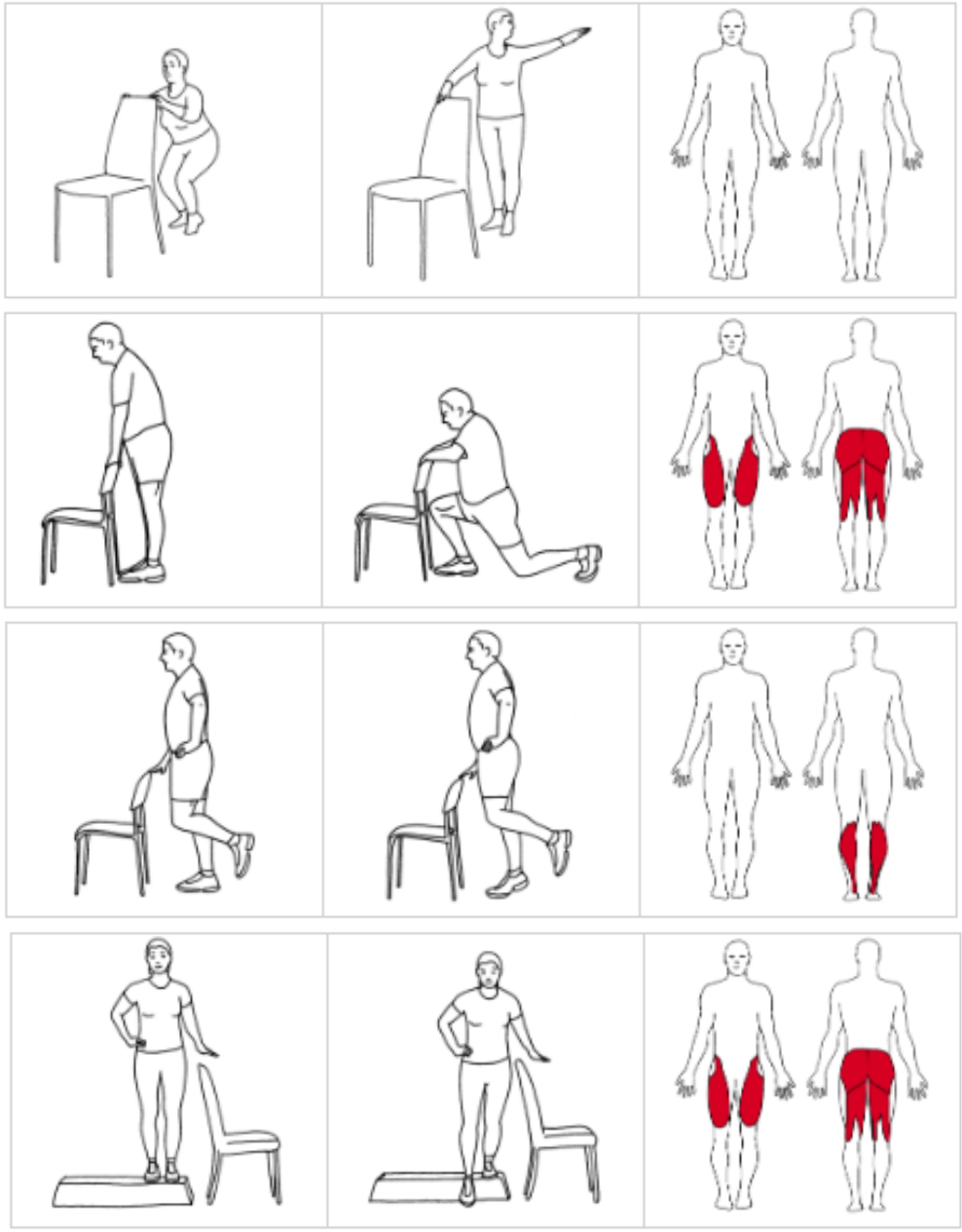


EXORLIVE how to move!

Valg af øvelser ex. UE

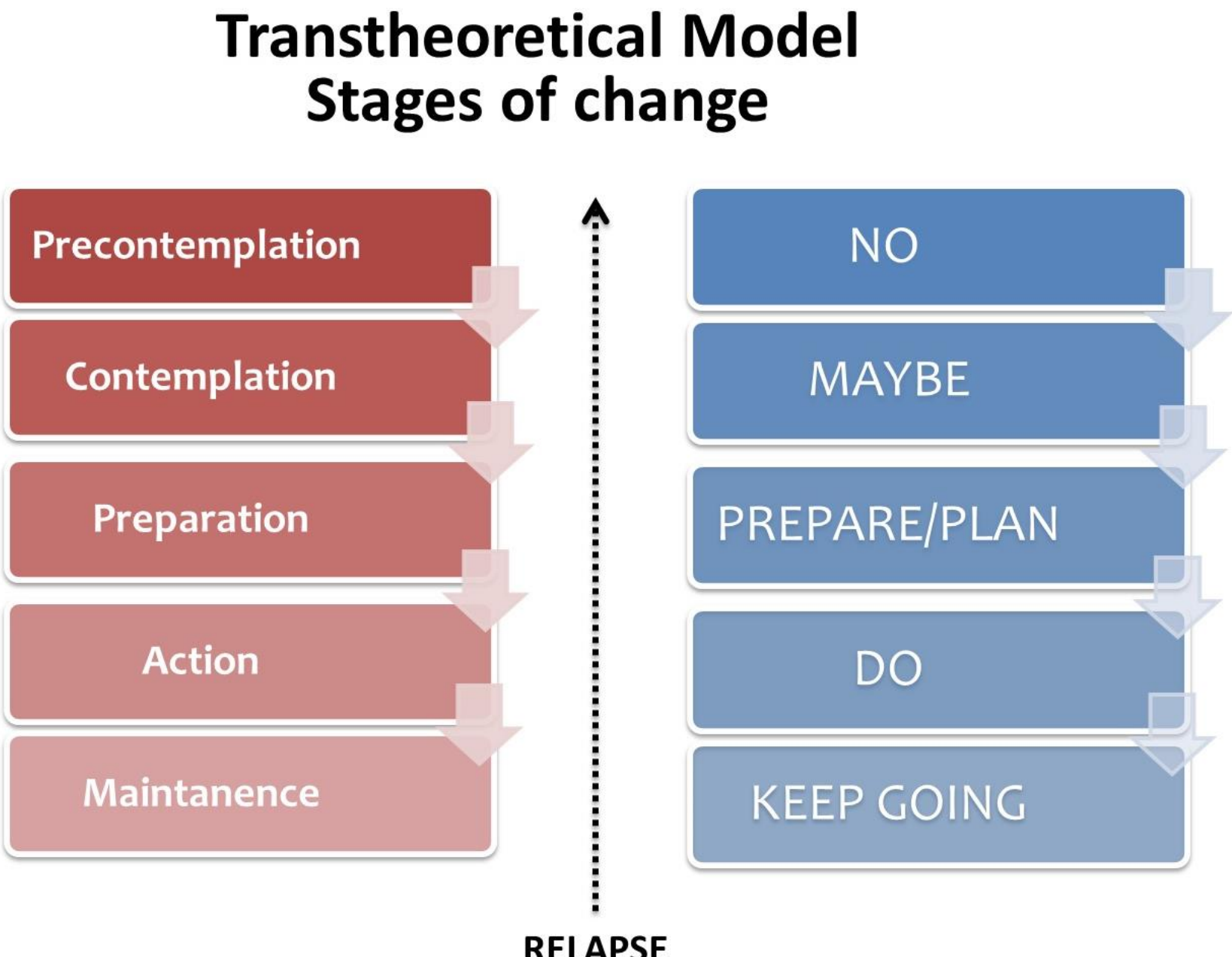
2 øvelser pr. store muskelgruppe
Full ROM
Inkludér funktionelle og balance øvelser

Langsom progression
2 x uge
8-12 gentagelser
1 → 3 sæt
20 % → 80 % 1 RM



EXORLIVE how to move!

Motivation


Transtheoretical Model
Stages of change
Precontemplation
Contemplation
Preparation
Action
Maintanence
NO
MAYBE
PREPARE/PLAN
DO
KEEP GOING
RELAPSE