KRACHTTRAINING TER PREVENTIE & BEHANDELING VAN SARCOPENIE

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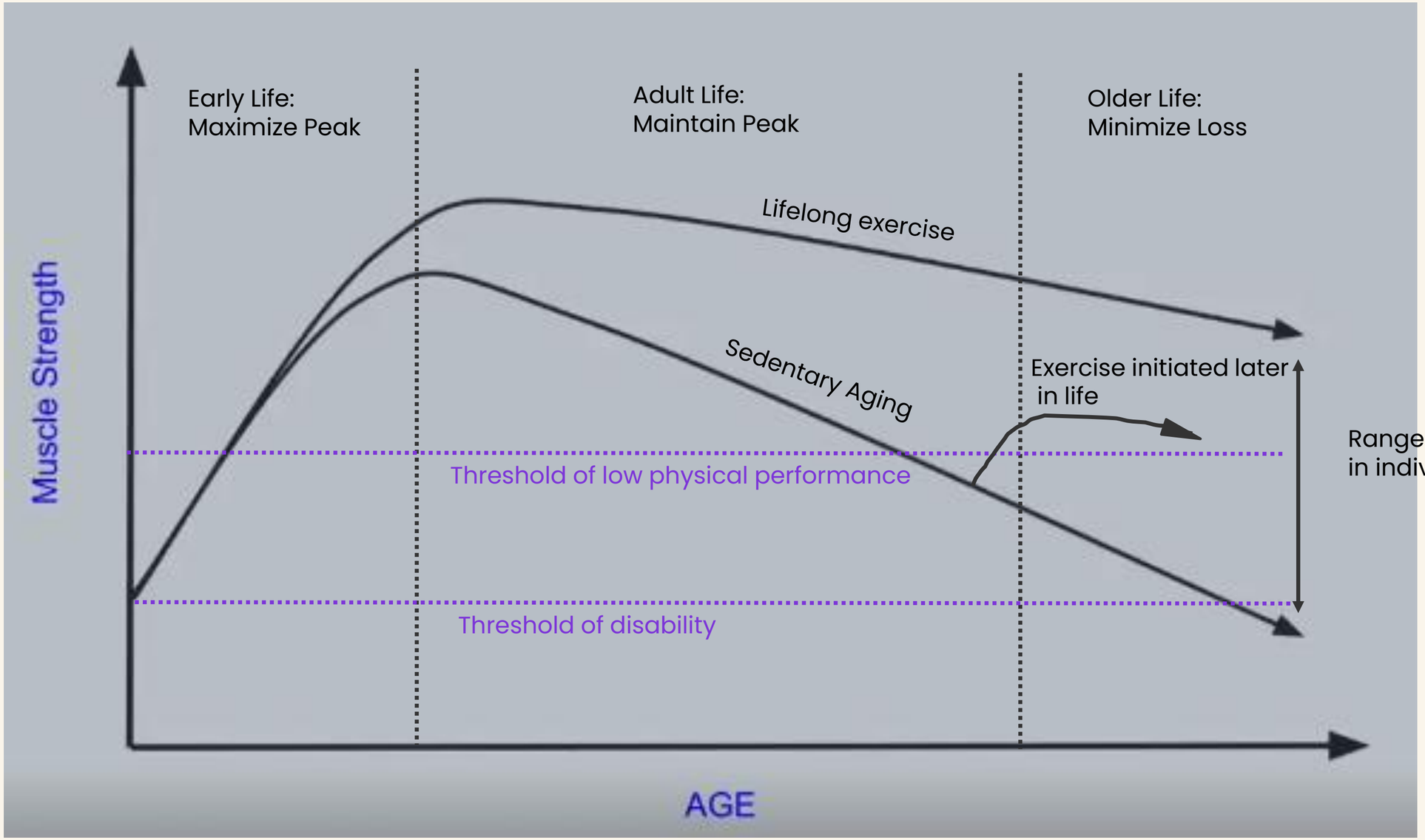
‘Healthy Ageing & Geriatric Rehabilitation’

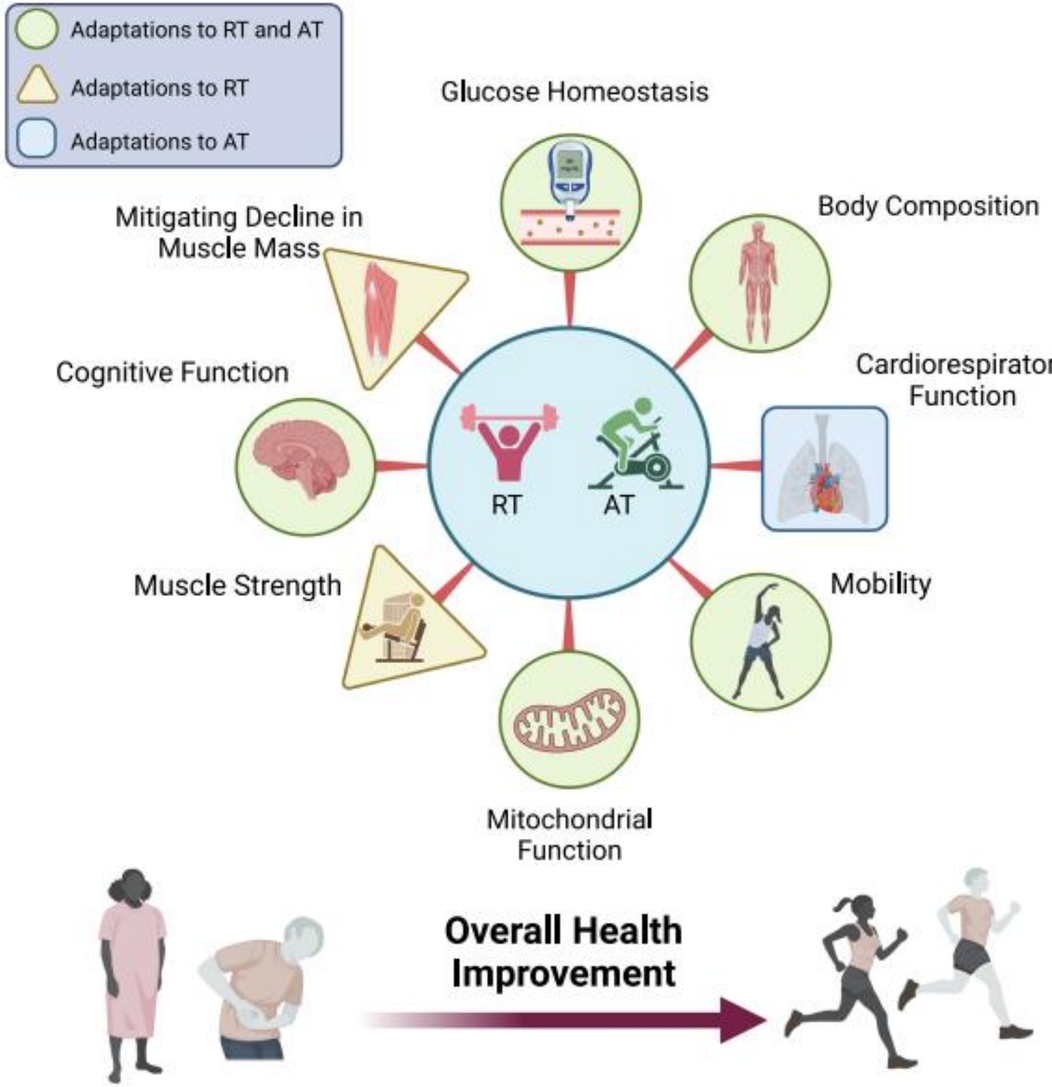
SARCOPENIE: WAT KUNNEN WE DOEN?

KRACHTTRAINING: WAAROM?

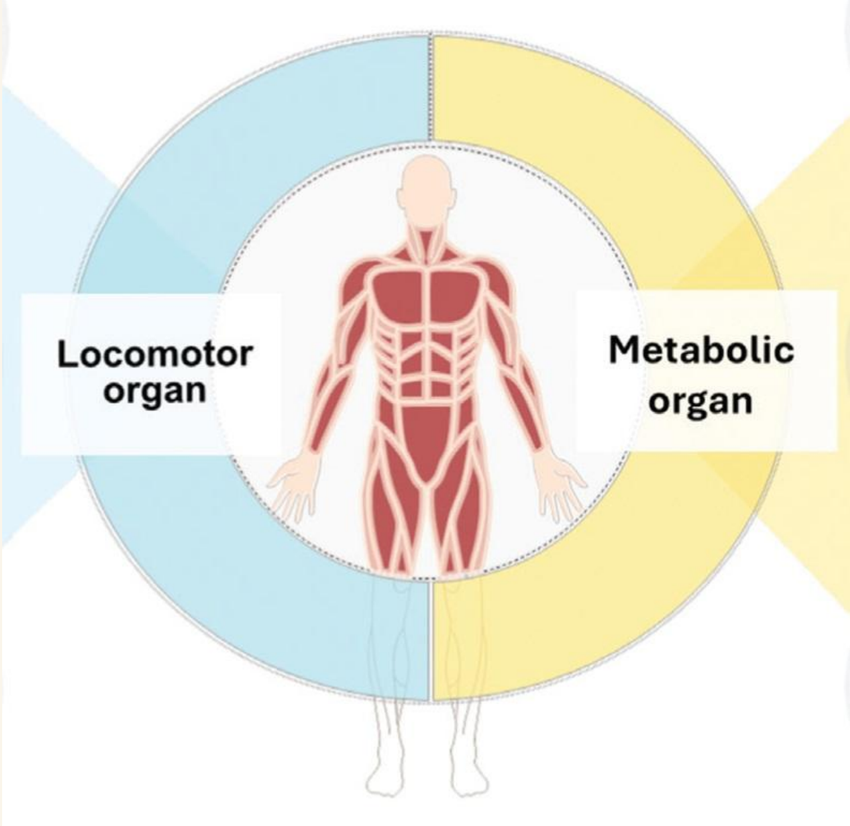


Cruz-Jentoft et al., Age and Ageing, 2018.

KRACHTTRAINING: WAAROM?



Abou Sawan et al., Exercise, Sport, and Movement, 2023.



Gonzalez et al., Current Opinion in Clin Nutr and Metabolic Care, 2024.

KRACHTTRAINING WERKT!

Meta-Analysis > Medicine (Baltimore). 2023 Jul 7;102(27):e34254. doi: 10.1097/MD.0000000000034254.

The efficacy of different interventions in the treatment of sarcopenia in middle-aged and elderly people: A network meta-analysis

Qian Geng [1], Haiting Zhai [1 2], Liming Wang [3], Hongwen Wei [1], Shilun Hou [1]

Review > Exp Gerontol. 2022 Jun 15:163:111767. doi: 10.1016/j.exger.2022.111767. Epub 2022 Mar 19.

Progressive machine-based resistance training for prevention and treatment of sarcopenia in the oldest old: A systematic review and meta-analysis

E Mende [1], N Moeinnia [2], N Schaller [2], M Weiß [2], B Haller [3], M Halle [4], M Siegrist [2]

Meta-Analysis > J Nutr Health Aging. 2019;23(6):494-502. doi: 10.1007/s12603-019-1196-8.

Exercise Interventions for the Prevention and Treatment of Sarcopenia. A Systematic Umbrella Review

D Beckwée [1], A Delaere, S Aelbrecht, V Baert, C Beaudart, O Bruyere, M de Saint-Hubert, I Bautmans

Meta-Analysis > Geriatr Nurs. 2023 Jul-Aug:52:199-207. doi: 10.1016/j.gerinurse.2023.06.005. Epub 2023 Jul 1.

Optimal exercise to improve physical ability and performance in older adults with sarcopenia: a systematic review and network meta-analysis

Dan Zeng [1], Xiao-Yu Ling [1], Zi-Long Fang [2], Yi-Fan Lu [3]

Meta-Analysis > Sci Rep. 2024 Nov 20;14(1):28784. doi: 10.1038/s41598-024-79958-z.

The effect of resistance training on patients with secondary sarcopenia: a systematic review and meta-analysis

Fang Cheng [1 2], Na Li [3], Jinfeng Yang [1 2], Jinqi Yang [1], Weicheng Yang [1], Jianxin Ran [1], Peijie Sun [1], Yuanpeng Liao [4 5]

Review > Arch Gerontol Geriatr. 2023 Feb:105:104868. doi: 10.1016/j.archger.2022.104868. Epub 2022 Nov 13.

The effect of different exercise programs on sarcopenia criteria in older people: A systematic review of systematic reviews with meta-analysis

Luis Fernando Ferreira [1], Estela Lopes Scariot [2], Luis Henrique Telles da Rosa [3]

KRACHTTRAINING WERKT!

Review > Exp Gerontol. 2022 Jun 15:163:111767. doi: 10.1016/j.exger.2022.111767.
Epub 2022 Mar 19.

Progressive machine-based resistance training for prevention and treatment of sarcopenia in the oldest old: A systematic review and meta-analysis

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b) Chair-stand-test

Study or Subgroup	Intervention Mean	SD	Total	Control Mean	SD	Total	Weight	Std. Mean Difference IV, Fixed, 95% CI
Ansai 2016	16.2	6.4	22	16.4	5.4	18	9.2%	-0.03 [-0.66, 0.59]
Cadore 2014	-9.8	6	11	-5.4	3.9	13	5.0%	-0.86 [-1.70, -0.01]
Gudlaugsson 2012	11	2.08	48	12.8	2.28	58	22.5%	-0.82 [-1.21, -0.42]
Hauer 2001	13.42	2.96	24	19.57	6.17	23	9.0%	-1.26 [-1.89, -0.63]
Hauer 2012	11.84	3.2	54	19.66	15.9	53	23.5%	-0.68 [-1.07, -0.29]
Rydwik 2008	-7.3	4.3	20	-7.4	5.1	19	9.1%	0.02 [-0.61, 0.65]
Sylliaas 2011	18.6	8.4	100	34.4	7.7	50	21.8%	-1.92 [-2.33, -1.52]
Total (95% CI)			**279**			**234**	**100.0%**	**-0.92 [-1.11, -0.73]**

Heterogeneity: Chi² = 42.84, df = 6 (P < 0.00001); I² = 86%
Test for overall effect: Z = 9.53 (P < 0.00001)

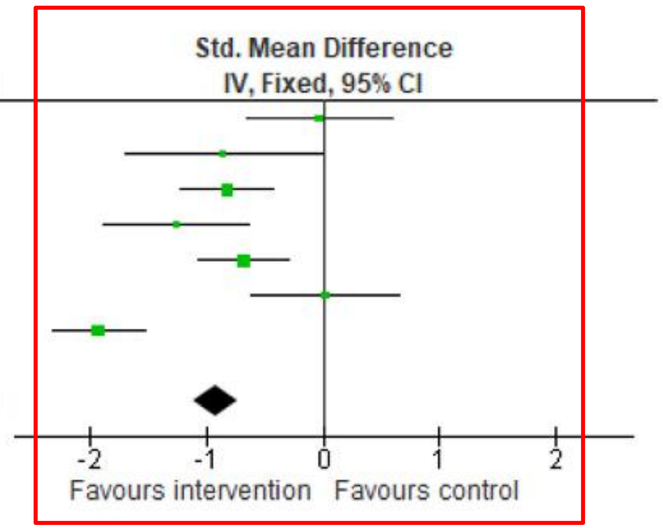
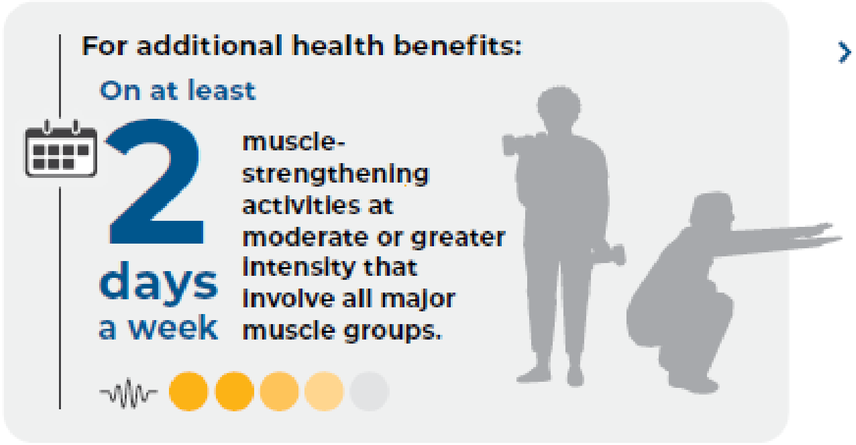


Fig. 2. Effects of machine-based progressive resistance training interventions on parameters of muscle strength.

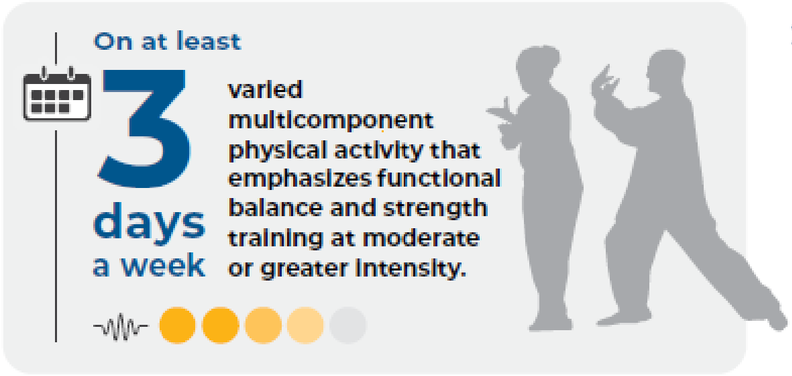
Battery and 6 min-walk-test improved significantly as well. The quality of evidence (GRADE) in the analysed studies was low or moderate. In summary, machine-based progressive resistance training has the potential to reverse sarcopenia in the oldest old, as reflected by enhanced muscle strength and physical performance. The systematic review revealed promising initial results for muscle quantity.

KRACHTTRAINING: RICHTLIJNEN?



› Older adults should also do muscle-strengthening activities at moderate or greater intensity that involve all major muscle groups on 2 or more days a week, as these provide additional health benefits.

Strong recommendation, moderate certainty evidence



› As part of their weekly physical activity, older adults should do varied multicomponent physical activity that emphasizes functional balance and strength training at moderate or greater intensity, on 3 or more days a week, to enhance functional capacity and to prevent falls.

Strong recommendation, moderate certainty evidence

The Journal of Nutrition, Health and Aging 29 (2025) 100401

Contents lists available at ScienceDirect

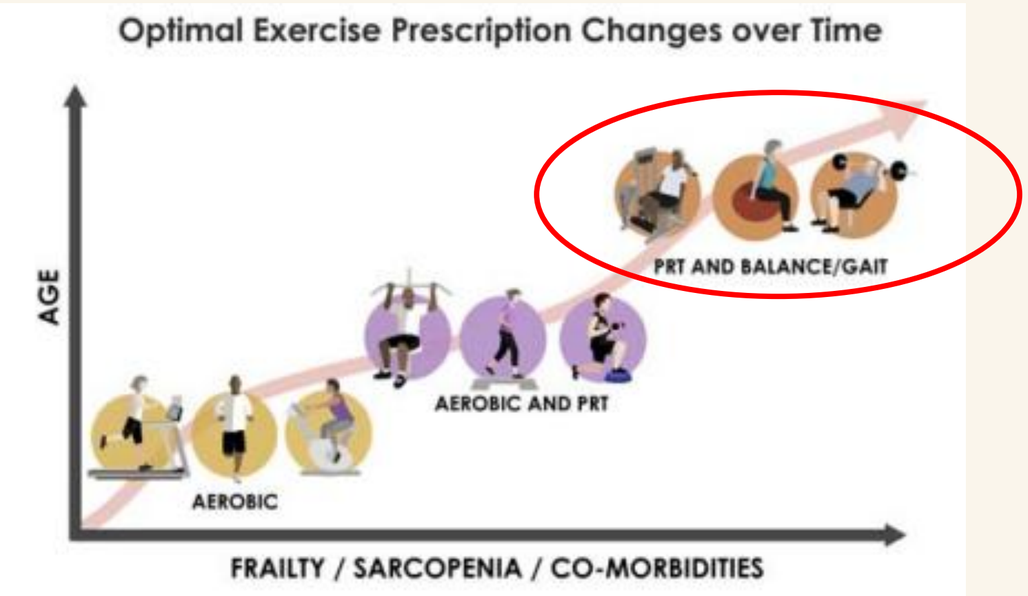
The Journal of Nutrition, Health and Aging

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

Review

Global consensus on optimal exercise recommendations for enhancing healthy longevity in older adults (ICFSR)

Mikel Izquierdo [a,b,*], Philipe de Souto Barreto [c,d], Hidenori Arai [e], Heike A. Bischoff-Ferrari [f], Eduardo L. Cadore [g], Matteo Cesari [h], Liang-Kung Chen [i], Paul M. Coen [j], Kerry S. Courneya [k], Gustavo Duque [l], Luigi Ferrucci [m], Roger A. Fielding [n], Antonio García-Hermoso [a,b], Luis Miguel Gutiérrez-Robledo [o], Stephen D.R. Harridge [p], Ben Kirk [q], Stephen Kritchevsky [r], Francesco Landi [s,t], Norman Lazarus [p], Teresa Liu-Ambrose [u], Emanuele Marzetti [s,t], Reshma A. Merchant [v,w], John E. Morley [x], Kaisu H. Pitkälä [y], Robinson Ramírez-Vélez [a,b], Leocadio Rodriguez-Mañas [b,z], Yves Rolland [c,d], Jorge G. Ruiz [A], Mikel L. Sáez de Asteasu [a,b], Dennis T. Villareal [B], Debra L. Waters [C,D], Chang Won Won [E], Bruno Vellas [c,d], Maria A. Fiatarone Singh [F]



WHO guidelines on physical activity and sedentary behaviour. Geneva: World Health Organization; 2020.

KRACHTTRAINING: RICHTLIJNEN?

- 2-3x/week

Zwaarte belasting	Borgscore
	6
zeer zeer licht	7
	8
zeer licht	9
	10
tamelijk licht	11
	12
redelijk zwaar	13
	14
zwaar	15
	16
zeer zwaar	17
	18
zeer zeer zwaar	19
maximaal	20

- Opbouw naar 70-80% 1-RM ~ BORG 15-18
- Power oefeningen 40-60% 1-RM ~ BORG 13-15

- 1-3 sets
- 8-12 herhalingen
- 6-10 oefeningen, grote spiergroepen, multi-joint

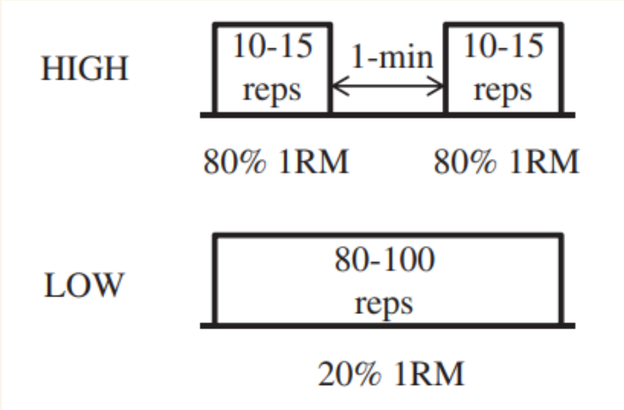
TRAININGSPRINCIPES

- Progressieve ‘overload’
- Specificiteit

ONDERTRAINING
gevaarlijker dan
OVERTRAINING!

Izquierdo et al., J Nutr Health Aging, 2025

KRACHTTRAINING: HOGE WEERSTANDEN NOODZAKELIJK?



Experimental Gerontology 48 (2013) 1351–1361

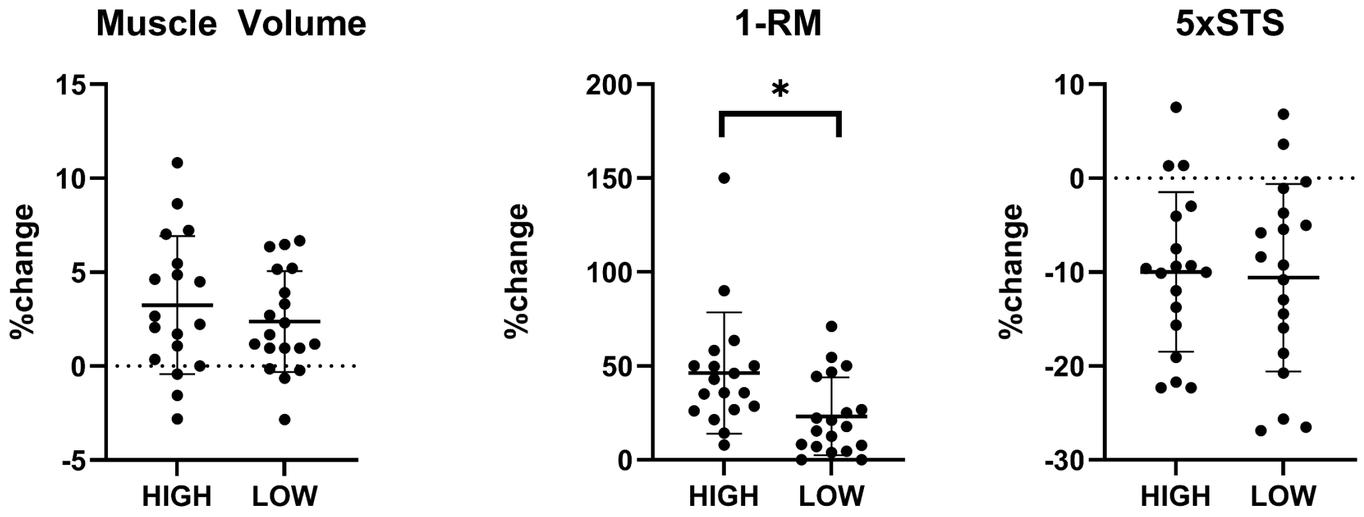
Contents lists available at ScienceDirect

Experimental Gerontology

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

Strength training at high versus low external resistance in older adults: Effects on muscle volume, muscle strength, and force–velocity characteristics

Evelien Van Roie [a,*], Christophe Delecluse [a], Walter Coudyzer [b], Steven Boonen [c], Ivan Bautmans [d]



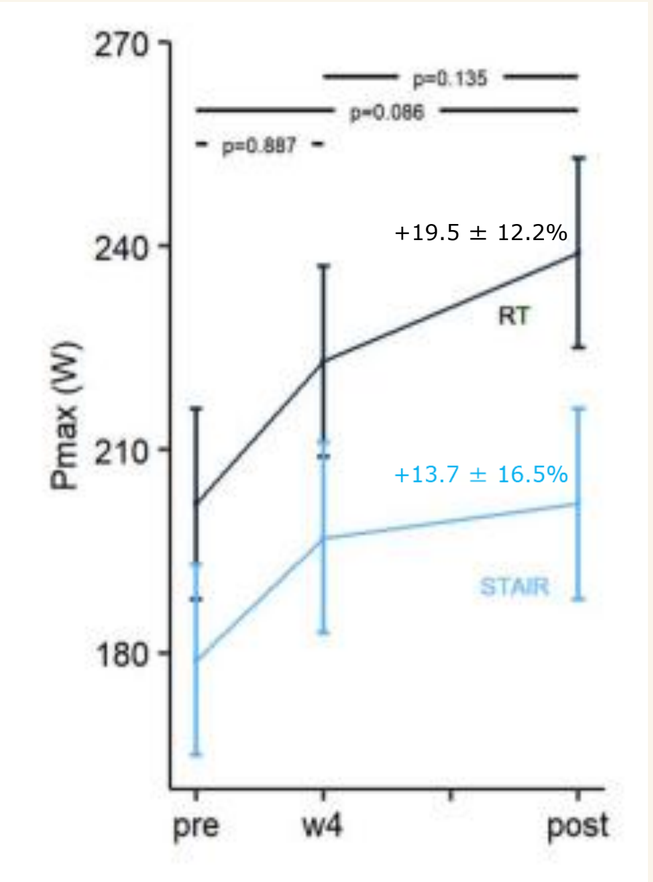
KRACHTTRAINING: ALTERNATIEVEN?

Table 2

Training variables and progression for the resistance training (RT) and stair-climbing exercise (STAIR) program.*

	Focus	Exercise	Sets and repetitions	Load	Interset rest	Velocity
RT						
Week 1–4	Hypertrophy	Unilateral leg press	4 × 12–15	55% 1RM	45 s	2 s ecc – 2 s conc
Week 5–8	Power	Unilateral leg press	4 × 12	40% 1RM	45 s	2 s ecc – maximal conc
Week 9–12	Power	Unilateral leg press	4 × 12	40% 1RM + 10%	45 s	2 s ecc – maximal conc
STAIR						
Week 1–4	Hypertrophy	Forward step-up	4 × 12–15	Step height of 30–40 cm, BM	45 s	2 s ecc – 2 s conc
Week 5–8	Power	Stair climbing	4 × 2 flights of 6 stairs	BM	45 s	Maximal
Week 9–12	Power	Stair climbing	4 × 2 flights of 6 stairs	BM + 10%	45 s	Maximal

*1RM = 1 repetition maximum; BM = body mass; ecc = eccentric; conc = concentric.



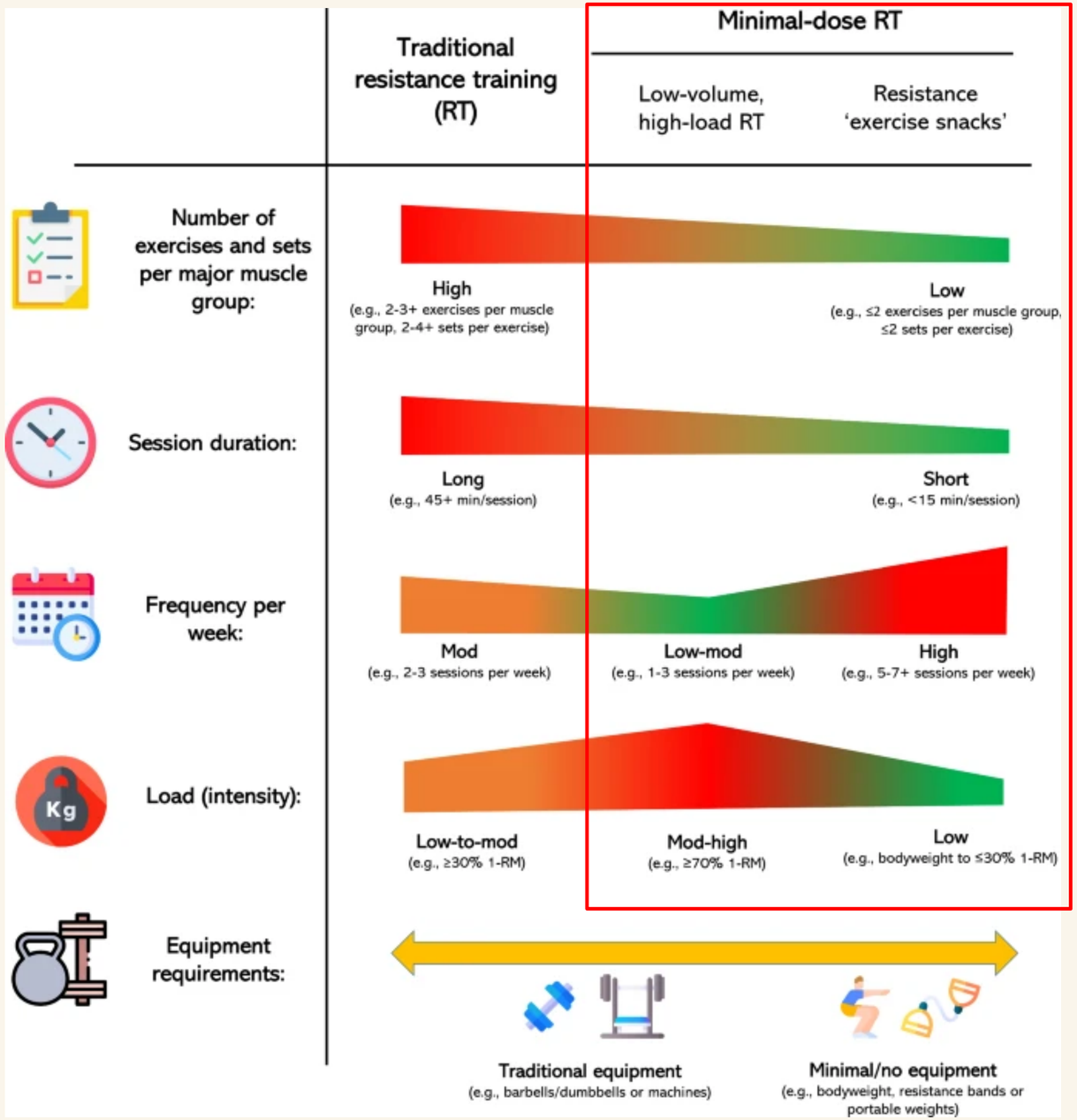
Original Research

the Journal of Strength and Conditioning Research™

Stair-Climbing Versus Machine-Based Resistance Exercise to Improve Muscle Power Among Older Adults: A Noninferiority Trial

Evelien Van Roie,[1,2] Jannique van Uffelen,[1] and Christophe Delecluse[1]

KRACHTTRAINING: MINIMALE DOSIS?



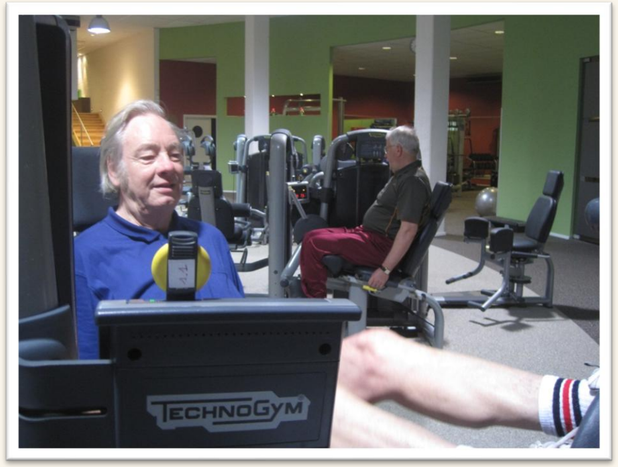
TRAININGSPRINCIPES!

Frequentie > volume!

REPEAT!

Fyfe et al., Sports Med, 2022

KRACHTTRAINING: AANBOD?



Fitnesscentra

Individuele kinesitherapie

Bewegen op verwijzing

Expertisecentrum val- en fractuurpreventie

Ipitup beweegbank & app

MIA – Meer In Actie app
(Hogeschool PXL)

TAKE HOME MESSAGES

- Progressieve krachttraining cruciaal én haalbaar bij ouderen (ook 80+)
- Frequentie: 2-3x/week, grote spiergroepen (zeker onderste ledematen), ‘progressieve overload’
- Overload ≠ zware gewichten, ook andere manieren om de spier uit te dagen!
  - Externe belasting
  - Snelheid, herhalingen, rust
  - Range of motion
  - …
- Denk aan de snelheidscomponent
- REPEAT! Consistentie is key!

BEDANKT!

KU LEUVEN

UHASSELT

KNOWLEDGE IN ACTION

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