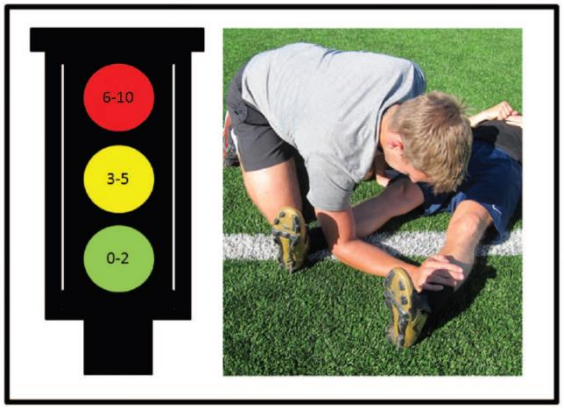
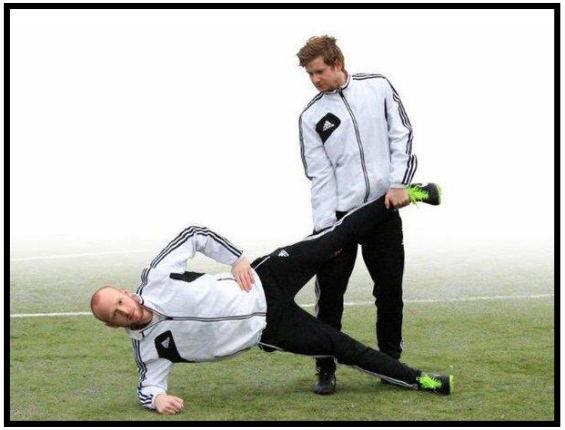
Belastningsalgoritmer og deskriptorer hvad er meningen?





Kristian Thorborg
Sportsphysiotherapist, Ass. Prof., Ph.D.

PMR-C

SORC-C
Sports Orthopedic Research Center – Copenhagen

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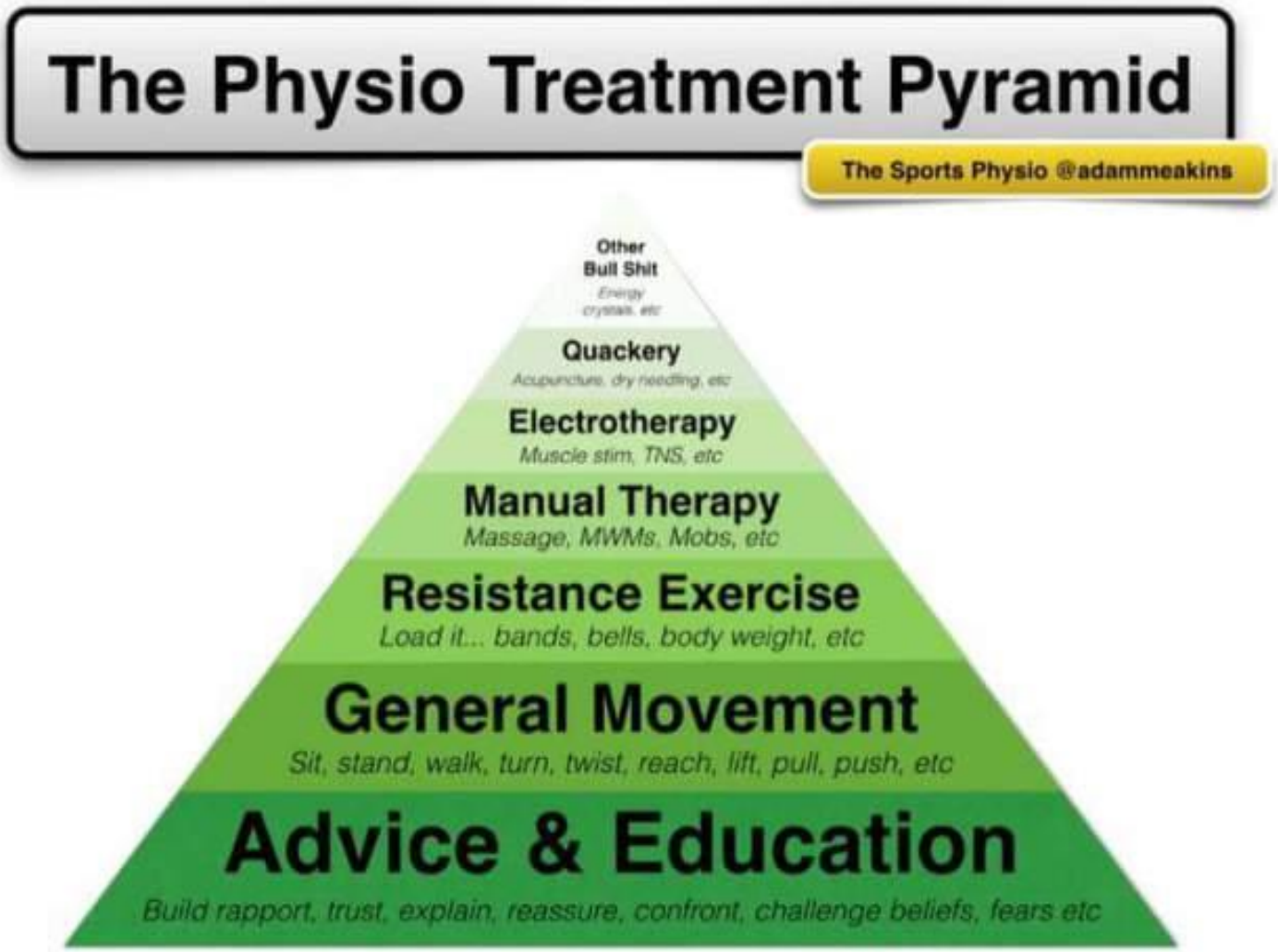
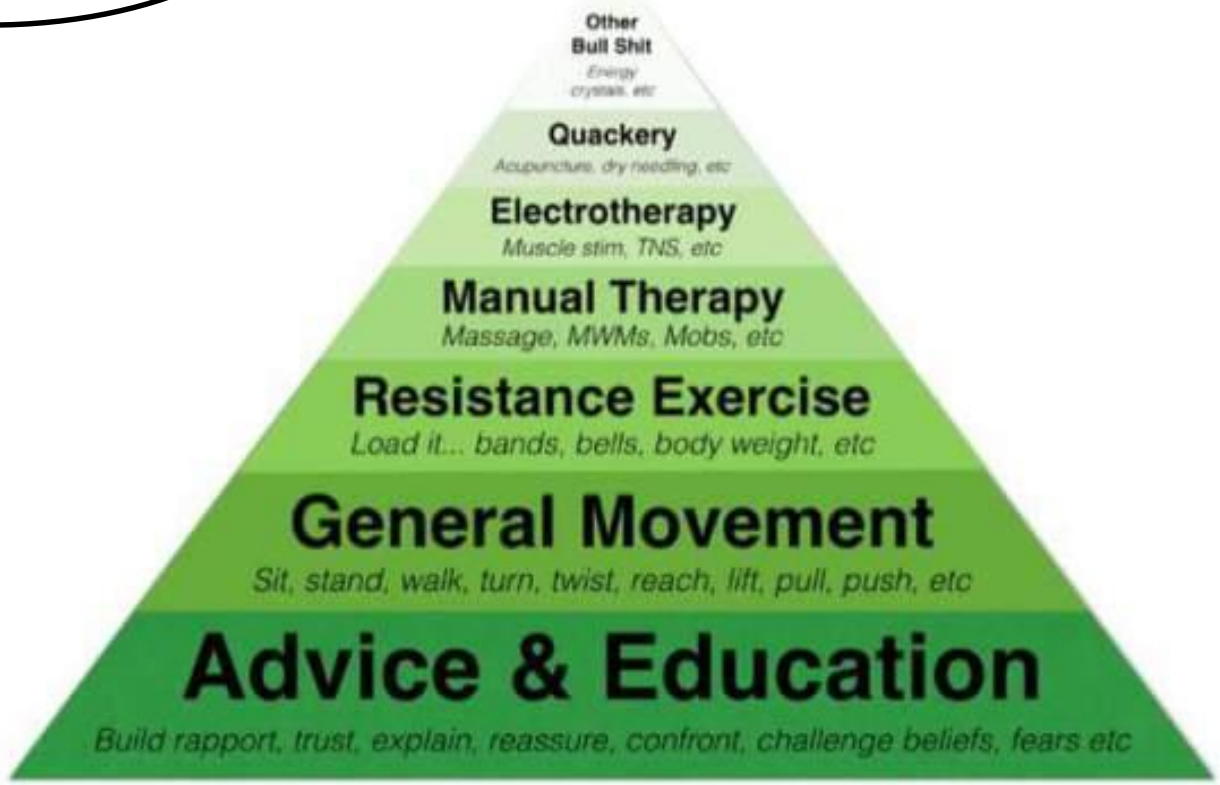
Fysioterapeutiske kerneydelser?

Fysioterapeutiske kerneydelser?



Physiotherapy for pain: a meta-epidemiological study of randomised trials BJSM

Elisabeth Ginnerup-Nielsen,[1] Robin Christensen,[1] Kristian Thorborg,[2] Simon Tarp,[1] Marius Henriksen[1,3]



Physiotherapy for study of randomis

Elisabeth Ginnerup-Nielsen,[1]
Marius Henriksen[1,3]

Data sources Systematic searches were carried out in MEDLINE and PEDro from 1 January 2004–31 December 2013. 174 trials (224 comparisons) met the inclusion criteria for the meta-analysis.

Eligibility criteria for selecting studies Randomised trials using 'no intervention' or of a sham-controlled design were selected. Only articles written in English were eligible.

Results An overall moderate effect of physiotherapy on pain corresponding to 0.65 SD-units (95% CI 0.57 to 0.73) was found based on a moderate inconsistency (I^2=51%). Stratified exploration showed that therapeutic exercise for musculoskeletal diseases tended to be more beneficial than multimodal interventions (difference 0.30 95% CI 0.03 to 0.57; p=0.03). Trials with a 'no intervention' comparator tended to have a higher overall effect size than trials with a sham comparator (difference 0.25; 95% CI 0.09 to 0.41; p=0.004). In general, our confidence in the estimates was low, mainly due to high risk of performance biases and between-study heterogeneity.

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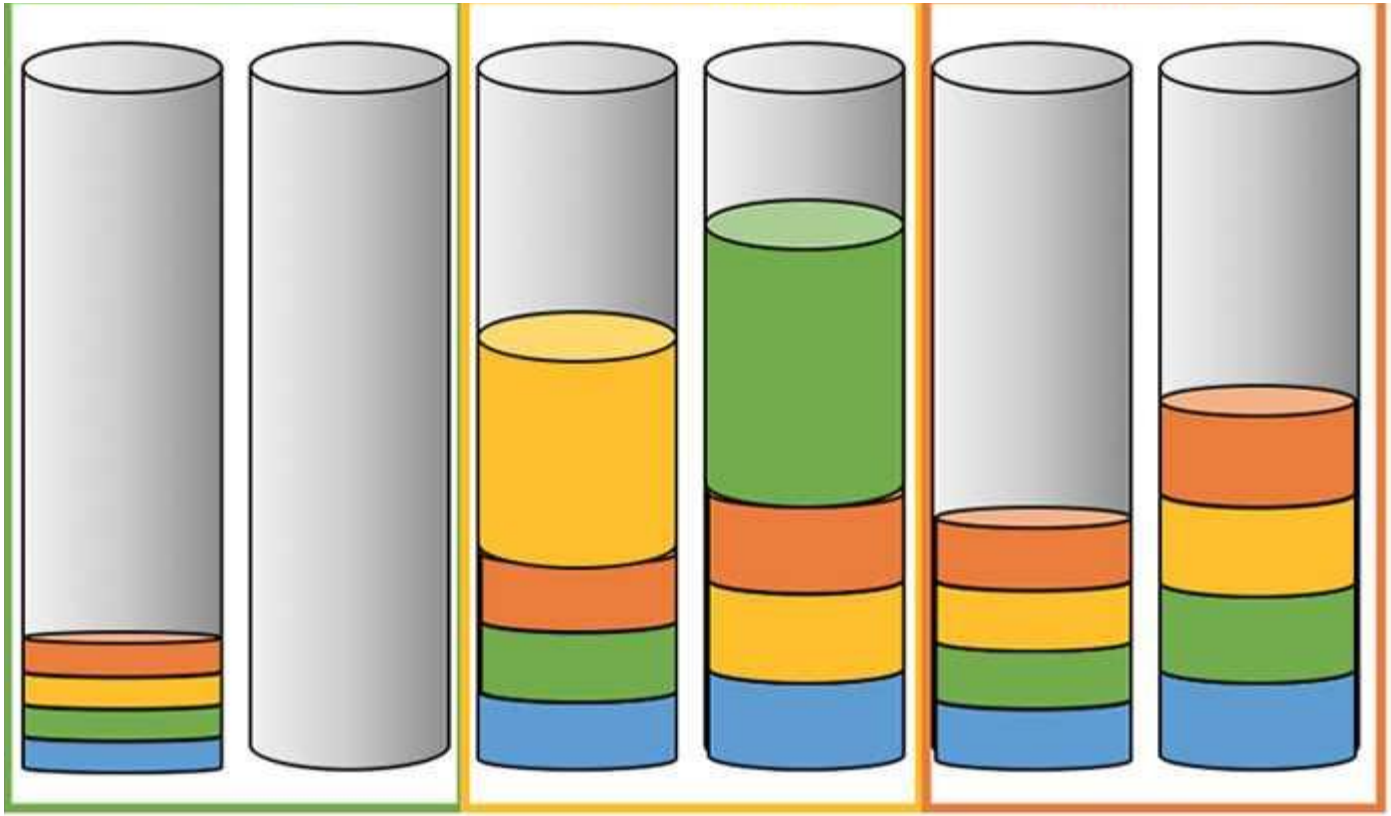
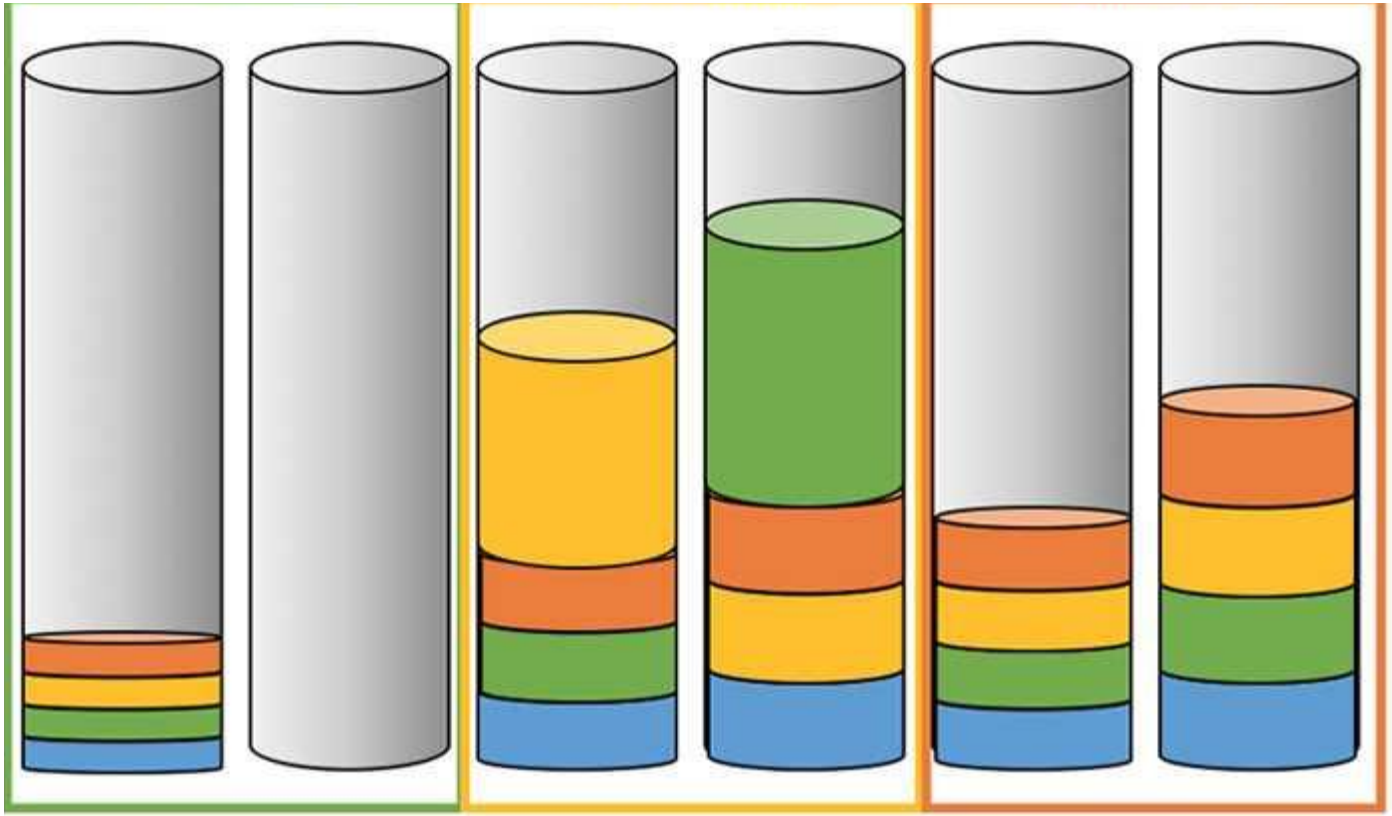
Fysioterapeutiske kerneydelser?

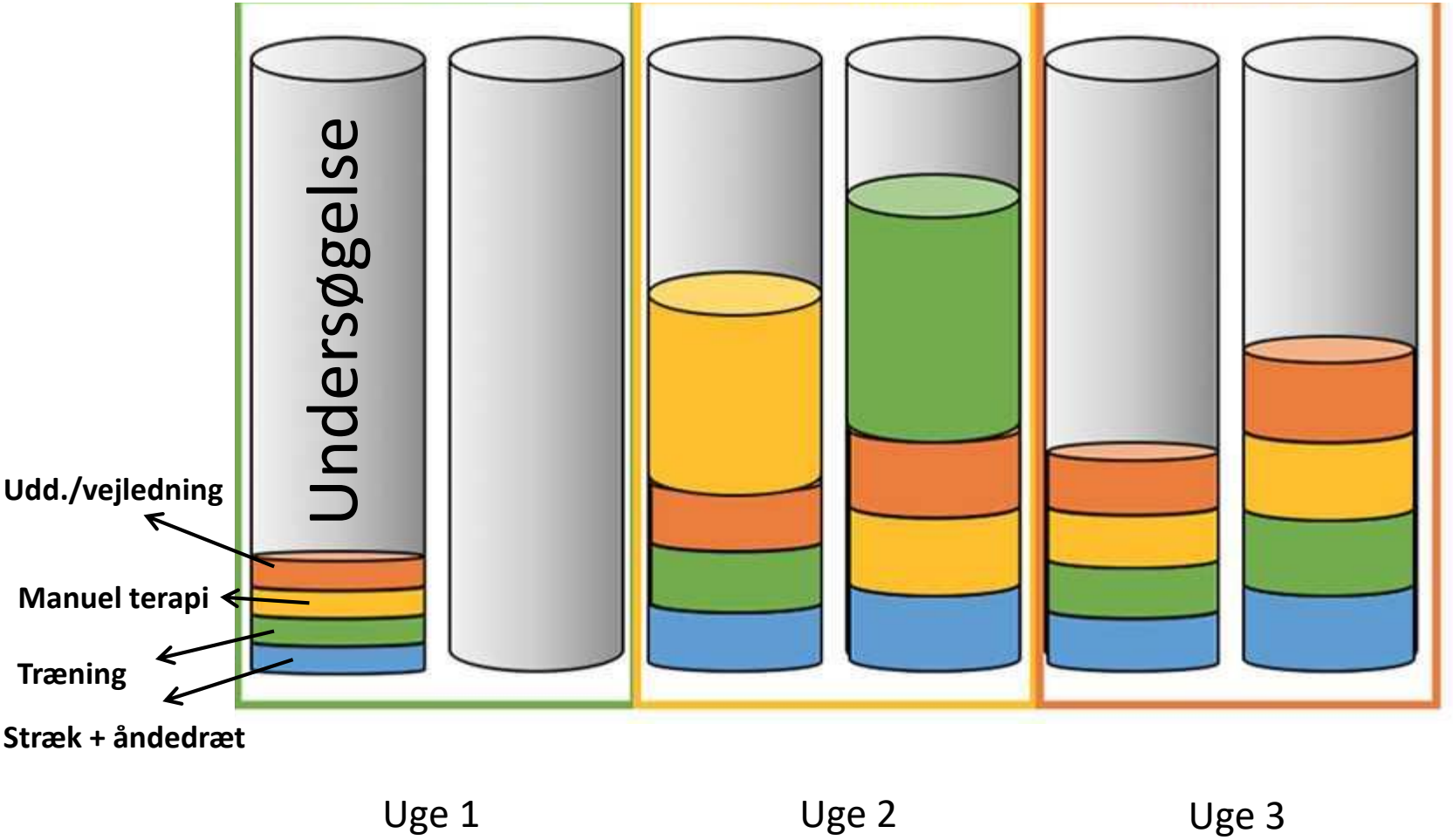


Fysioterapeutiske kerneydelser?

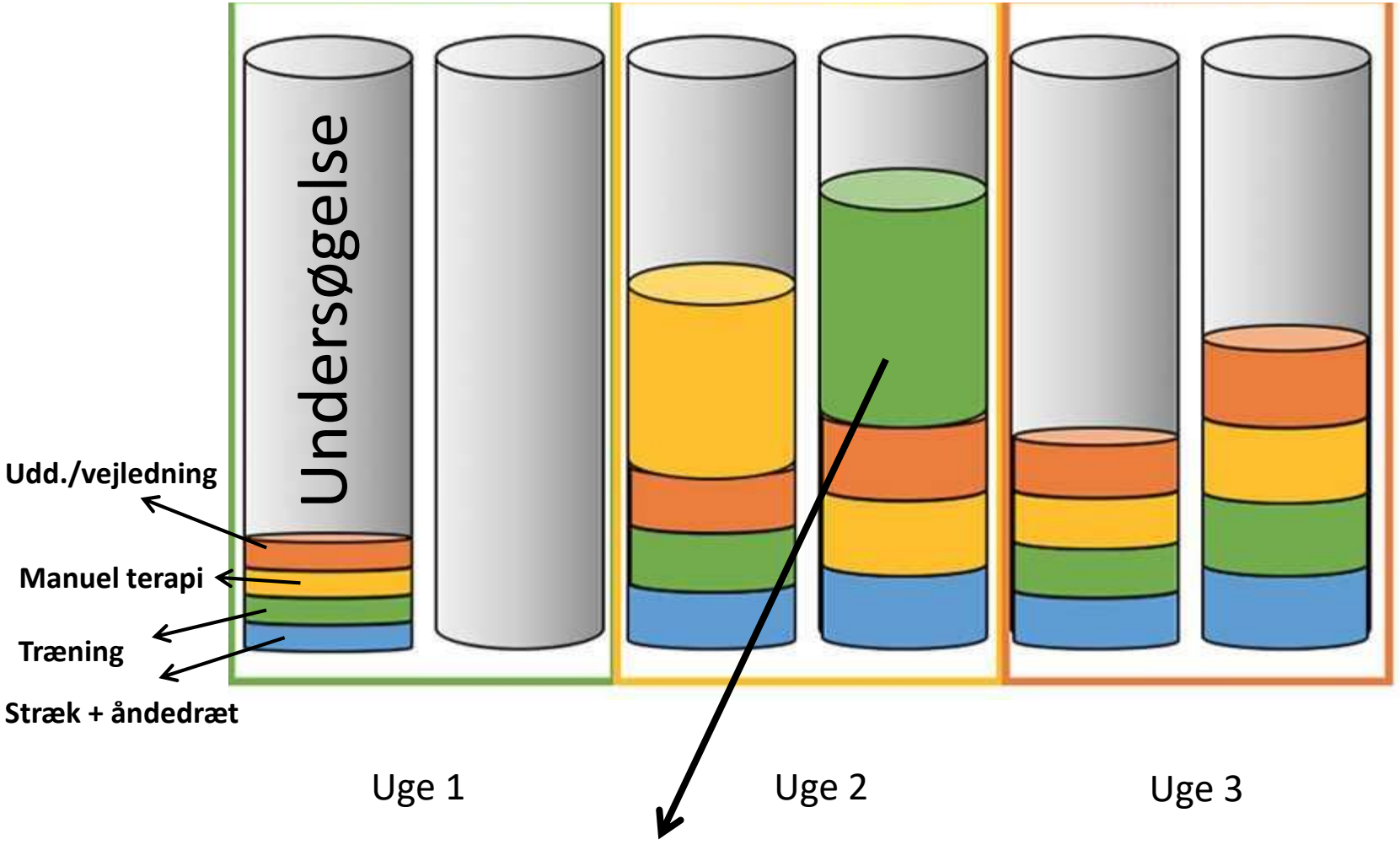


6 forskellige behandlingssessioner af 30 minutter

Fysioterapeutiske kerneydelser?

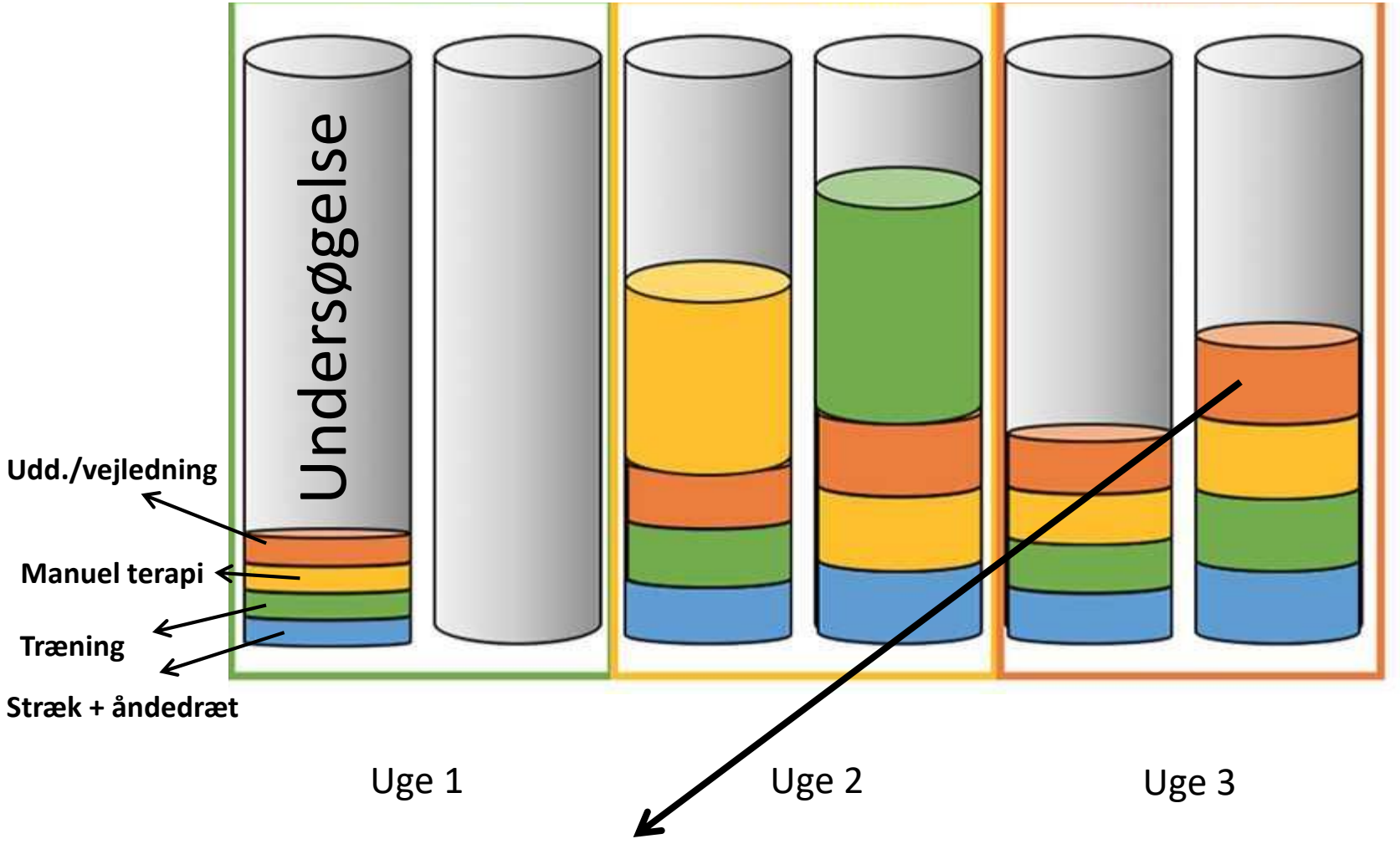


Fysioterapeutiske kerneydelser?



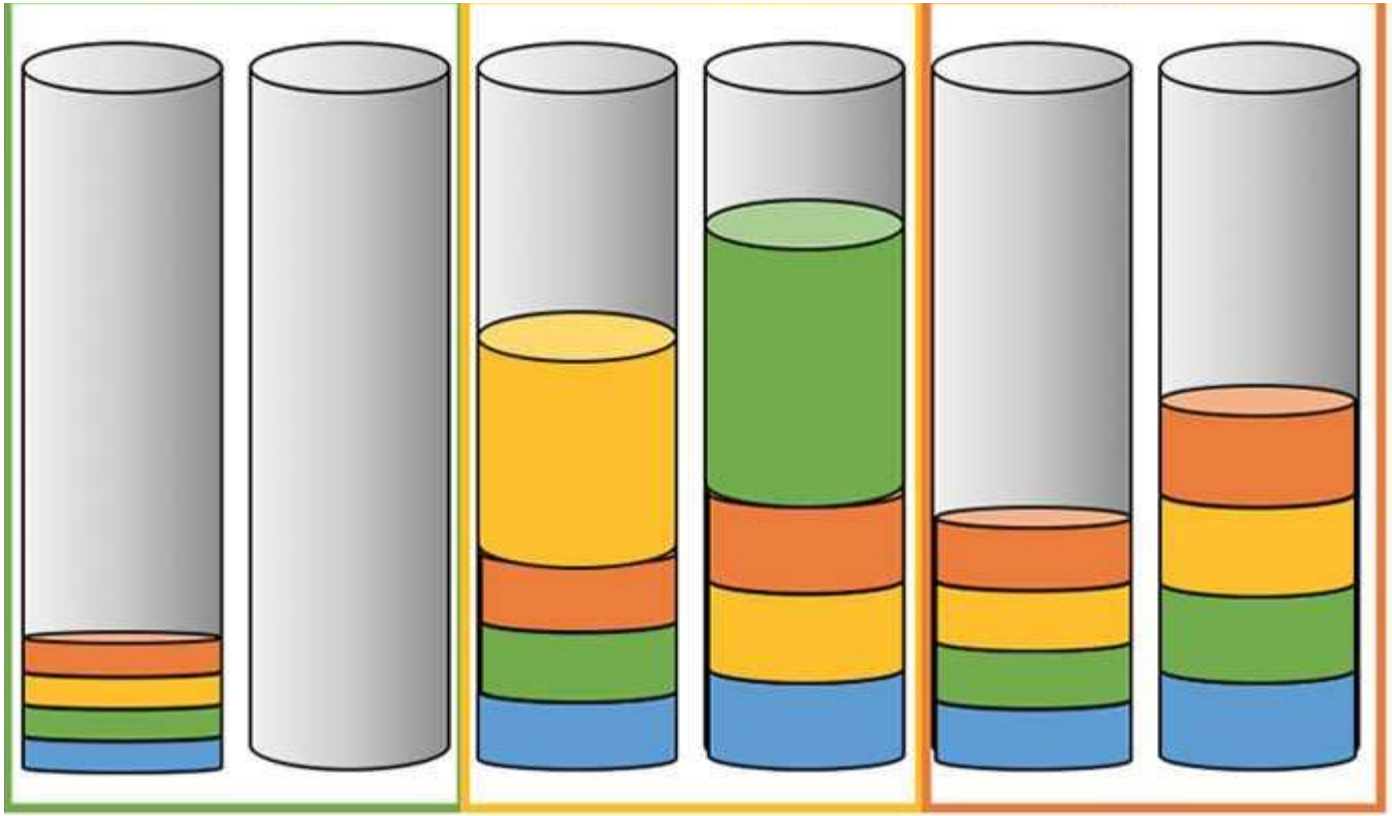
Sufficient træningsterapi dosis per session ved 2 ugentlige sessioner

Fysioterapeutiske kerneydelser?



Sufficient uddannelse/vejledning per session ved 2 ugentlige sessioner

Hvordan øger vi kvaliteten i vores kerneydelser?



Hvordan øger vi kvaliteten i vores kerneydelser?

a

- x_1, load magnitude
- x_2, number of repetitions
- x_3, number of sets
- x_4, rest in-between sets ([s] or [min])
- x_5, number of exercise interventions (per [d] or week)
- x_6, duration of the experimental period ([d] or weeks)
- x_7, fractional and temporal distribution of the contraction modes per repetition and duration [s] of one repetition
- x_8, rest in-between repetitions ([s] or [min])
- x_9, time under tension ([s] or [min])
- x_{10}, volitional muscular failure
- x_{11}, range of motion
- x_{12}, recovery time in-between exercise sessions ([h] or [d])
- x_{13}, anatomical definition of the exercise (exercise form)

Classical set of descriptors

New set of descriptors

Complete set of mechano-biological descriptors

b

	x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8	x_9	x_{10}	x_{11}	x_{12}	x_{13}
A	75% 1RM	6	1	-	2 per week	10 weeks	2 s shortening 0 s isometric 2 s lengthening	-	24+5 s	no	60%	24 h	no
B	75% 1RM	6	1	-	2 per week	10 weeks	10 s shortening 2 s isometric 4 s lengthening	-	96+10 s	yes	100%	72 h	yes

(Toigo and Boutellier, 2006)

Hvordan øger vi kvaliteten i vores kerneydelser?

RM

FAILURE

ADHERENCE

TUT

a

- x_1, load magnitude
- x_2, number of repetitions
- x_3, number of sets
- x_4, rest in-between sets ([s] or [min])
- x_5, number of exercise interventions (per [d] or week)
- x_6, duration of the experimental period ([d] or weeks)
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(Toigo and Boutellier, 2006)

BJSM

'Load me up, Scotty': mechanotherapy for plantar fasciopathy (formerly known as plantar fasciitis)

M S Rathleff and K Thorborg

Editorials

Table 1 Example of mechanobiological descriptors of resistance exercise stimuli in Kongsgaard *et al* and Rathleff *et al*

	Eccentric (ECC). Kongsgaard *et al*	Heavy slow resistance training Kongsgaard *et al*	High-load strength training for plantar fasciitis. Rathleff *et al*
1. Load magnitude	Body weight at beginning. Progress from there as pain diminished	15 RM at week 1 and progressed to 6 RM at week 9–12	12 RM at week 1 and progressed to 8 RM at week 4
2. Number of repetitions	15	15	12
3. Number of sets	3	12	3
4. Rest in between sets	?	?	?
5. Number of exercise interventions (per (day) or week)	2/day	3/week	3.5/week
6. Duration of the experimental period ((day) or weeks)	3 months	3 months	3 months
7. Fractional and temporal distribution of the contraction modes per repetition and duration (s) of one repetition	0 s conc 0 s iso 3 s ecc	3 s conc 0 s iso 3 s ecc	3 s conc 2 s iso 3 s ecc
8. Rest in-between repetitions ((s) or (min))	?	?	?
9. TUT ((s) or (min))	3×15×3×2=270 s per day. Total TUT during 3 months: 22.680 s	4×15×4×6=1.440 s per training session during week 1. Total TUT during 3 months: 30.816 s	3×15×8=288 s per training session during week 1. Total TUT during 3 months: 11.424 s
10. Volitional muscular failure	?	Yes	Yes
11. Range of motion	?	?	Full range of motion
12. Recovery time in-between exercise sessions ((h) or (d))	12 h	48–72 h	48 h
13. Anatomical definition of the exercise (exercise form)	?	?	Yes

RM, repetition maximum; TUT, time-under-tension.

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4. Rest in between sets	?	?	?
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6. Duration of the experimental period ((day) or weeks)	3 months	3 months	3 months
7. Fractional and temporal distribution of the contraction modes per repetition and duration (s) of one repetition	0 s conc 0 s iso 3 s ecc	3 s	3 s conc 2 s iso 3 s ecc
8. Rest in-between repetitions ((s) or (min))	?		?
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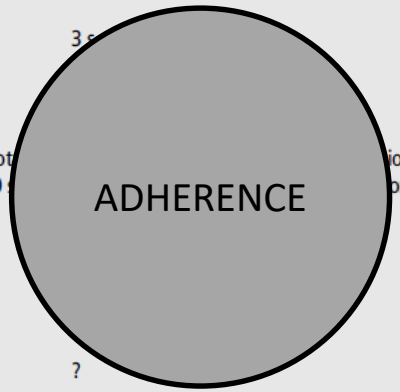
10. Volitional muscular failure	?		Yes
11. Range of motion	?		Full range of motion
12. Recovery time in-between exercise sessions ((h) or (d))	12 h		48 h
13. Anatomical definition of the exercise (exercise form)	?	?	Yes

RM, repetition maximum; TUT, time-under-tension.



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1. Load magnitude	Bod Pro dimi	(a)	(b) nd progressed to 8
2. Number of repetitions	15		
3. Number of sets	3		
4. Rest in between sets	?		
5. Number of exercise interventions (per (day) or week)	2/da		
6. Duration of the experimental period ((day) or weeks)	3 mo		
7. Fractional and temporal distribution of the contraction modes per repetition and duration (s) of one repetition	0 s 0 s i 3 s	(c)	(d)
8. Rest in-between repetitions ((s) or (min))	?		
9. TUT ((s) or (min))	3×1 TUT		training session l TUT during
10. Volitional muscular failure	?		
11. Range of motion	?		n
12. Recovery time in-between exercise sessions ((h) or (d))	12 h		
13. Anatomical definition of the exercise (exercise form)	?		

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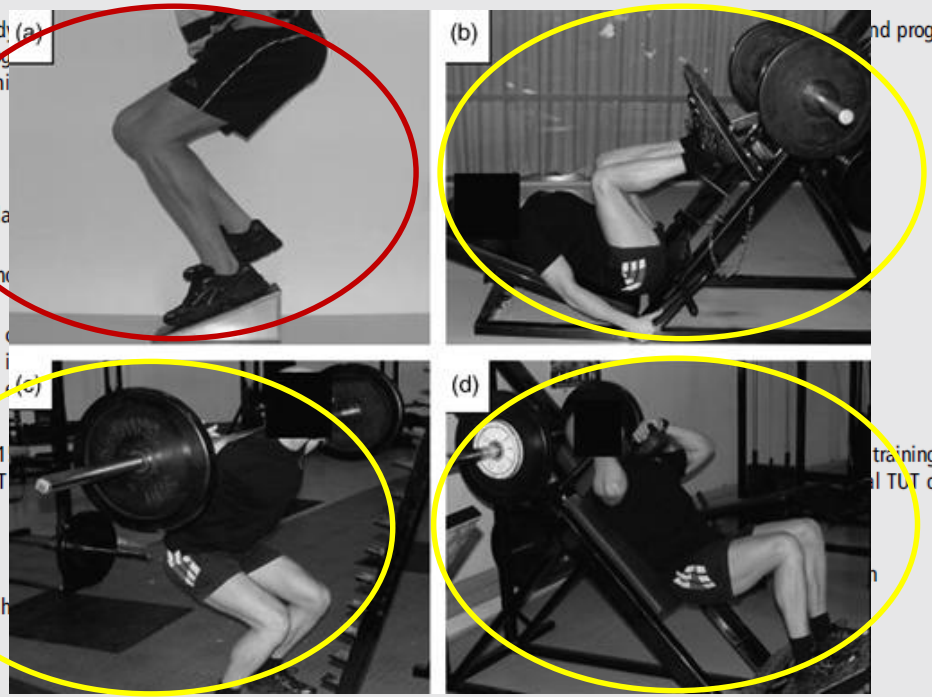
2	15		
	3		
	?		
[illegible]tions (per (day)	2/da		
[illegible]tal period ((day)	3 m[illegible]		
7. Fra[illegible]poral distribution of the contraction modes per repetition and duration (s) of one repetition	0 s [illegible] 0 s i 3 s [illegible]		
8. Rest in-between repetitions ((s) or (min))	?		
9. TUT ((s) or (min))	3×1 TUT		[illegible]raining session [illegible]l TUT during
10. Volitional muscular failure	?		
11. Range of motion	?		[illegible]n
12. Recovery time in-between exercise sessions ((h) or (d))	12 h		
13. Anatomical definition of the exercise (exercise form)	?		

RM, repetition maximum; TUT, time-under-tension.

RM



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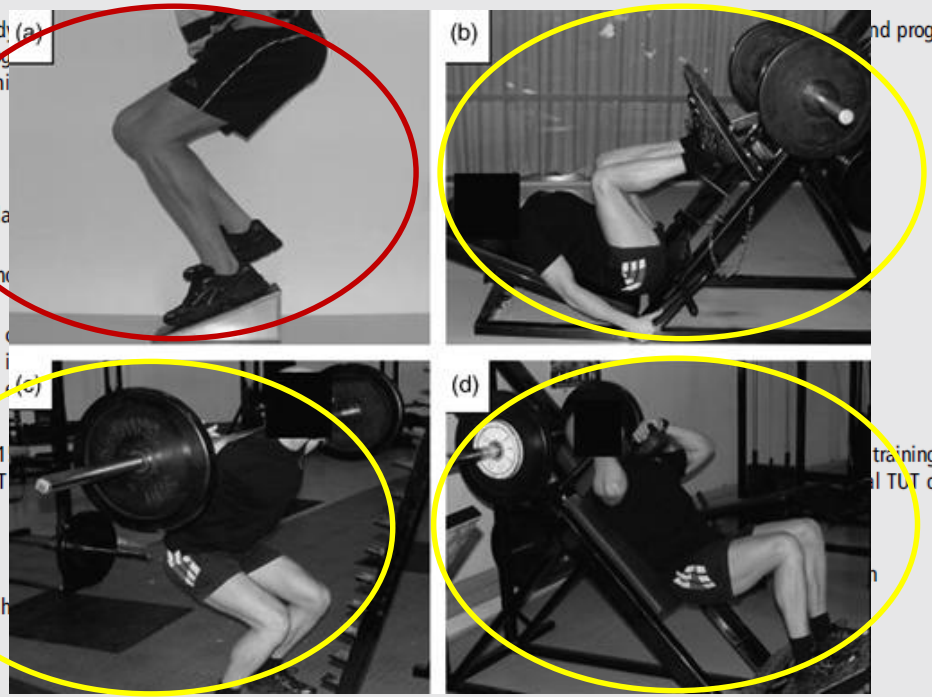
tions (per (day)	2/da
tal period ((day)	3 m
distribution of the	0 s
etition and	0 s i
n	3 s
((s) or (min))	?
	3×1	TUT	training session	l TUT during
10. Vo ular failure	?
11. Range of motion	?	n
12. Recovery time in-between exercise sessions ((h) or (d))	12 h
13. Anatomical definition of the exercise (exercise form)	?

RM, repetition maximum; TUT, time-under-tension.

RM

FAILURE



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	3		
	?		
…tions (per (day)	2/da…		
…tal period ((day)	3 m…		
…distribution of the …etition and …n	0 s … 0 s i… 3 s …		
…((s) or (min))	?	(c)	(d)
	3×1… TUT…		…training session …l TUT during
	?		
	?		…n
…exercise	12 h…		
…the exercise	?		

RM, repetition maximum; TUT, time-under-tension.

RM

FAILURE

TUT

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2	15		
…tions (per (day)	3		
…tal period ((day)	?		
…distribution of the …etition and …n	2/da…		
…((s) or (min))	3 s …		
	0 s …		
	0 s …		
	?	(c)	(d)
…exercise	3×1… TUT…		…training session …l TUT during
…the exercise	?		
	?		
	12 h…		
	?		

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RM

FAILURE

TUT