

Exercise:

What you should know, and hot topics

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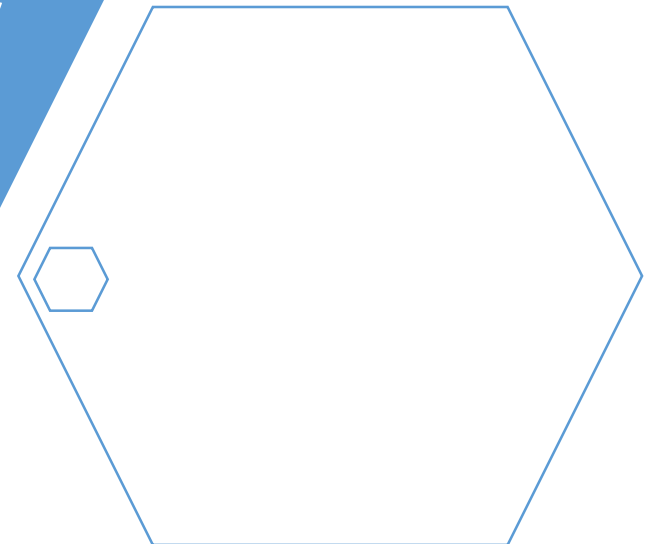


Huff and puff
Lunge, hinge, squat,
push, pull, reach.
Test your steady
limits



Not just any old
exercise - specificity

Resistance and
balance training
should be part of
your arsenal



Hot Topics

Yoga

High intensity
strength and impact

What's next
for guidelines

Johanna Quaas performed a floor-and-beam for Guinness World Record at the age of 86.

Not move more, not just any exercise....

Principle of Specificity:

training responses or adaptations are tightly coupled to the mode, frequency and duration of exercise performed

Heart and lung fitness

- Aerobic physical activity, HIIT

Muscular strength and power

- Resistance exercise, plyometrics

Balance, agility, reaction time

- Challenge balance, agility, fast movement

High intensity interval training

Intervals of all-out activity followed by rest, 1 min:2-3 min ratio

Pros:

- Shorter workout
- Improve fitness, burn fat

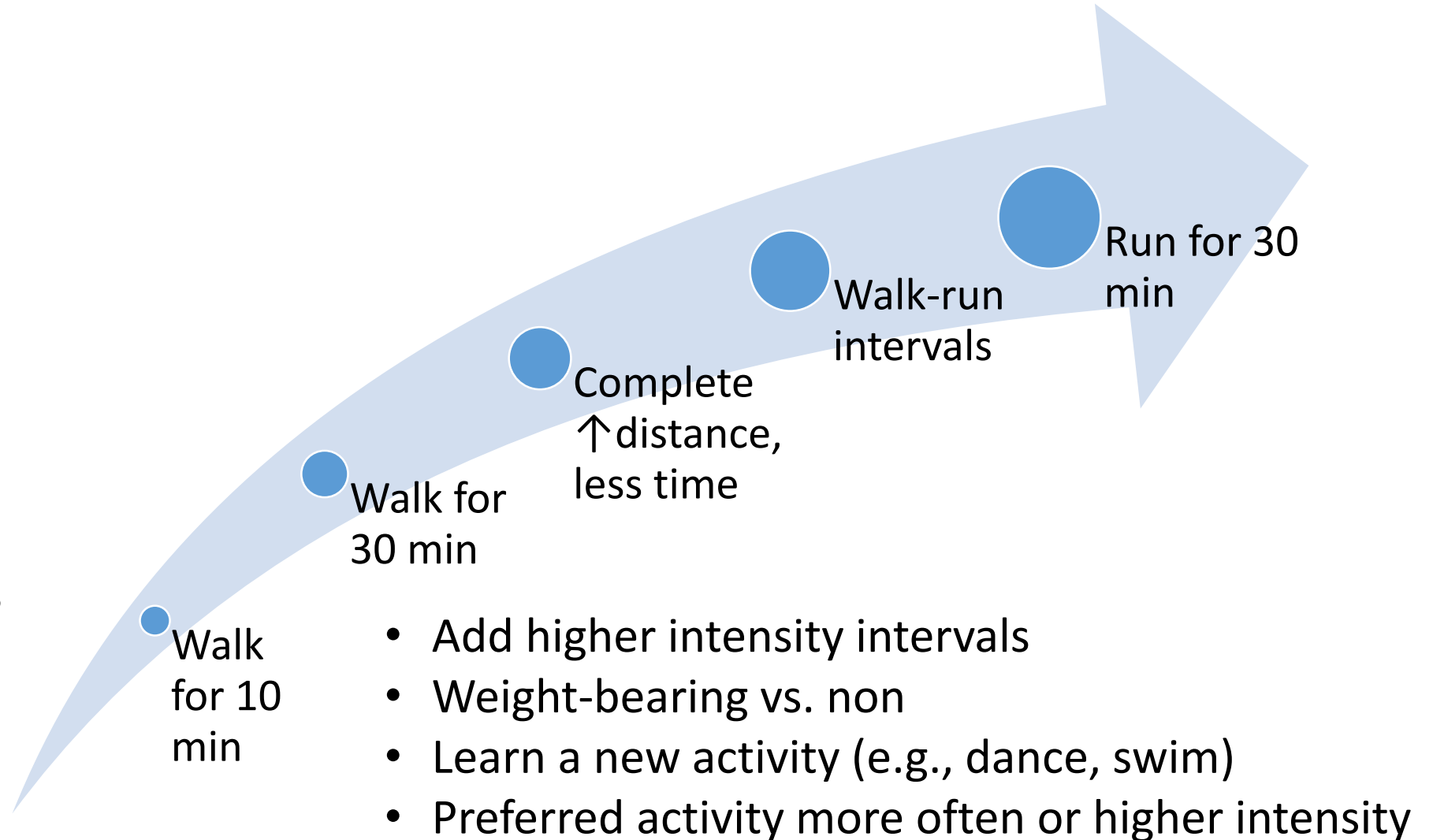
Cons:

- Hard!
- Safety - requires appropriate instruction, rest

		EXERCISE ZONES										
		AGE										
		20	25	30	35	40	45	50	55	65	70	
BEATS PER MINUTE	100%	200	195	190	185	180	175	170	165	155	150	VO2 Max (Maximum effort)
	90%	180	176	171	167	162	158	153	149	140	135	
	80%	Anaerobic (Hardcore training)										Aerobic (Cardio training / Endurance)
		160	156	152	148	144	140	136	132	124	120	
	70%	Aerobic (Cardio training / Endurance)										Weight control (Fitness / Fat burn)
		140	137	133	130	126	123	119	116	109	105	
	60%	Weight control (Fitness / Fat burn)										Moderate activity (Maintenance / Warm up)
		120	117	114	111	108	105	102	99	93	90	
	50%	Moderate activity (Maintenance / Warm up)										
		100	98	95	93	90	88	85	83	78	75	

Aerobic physical activity – huff and puff

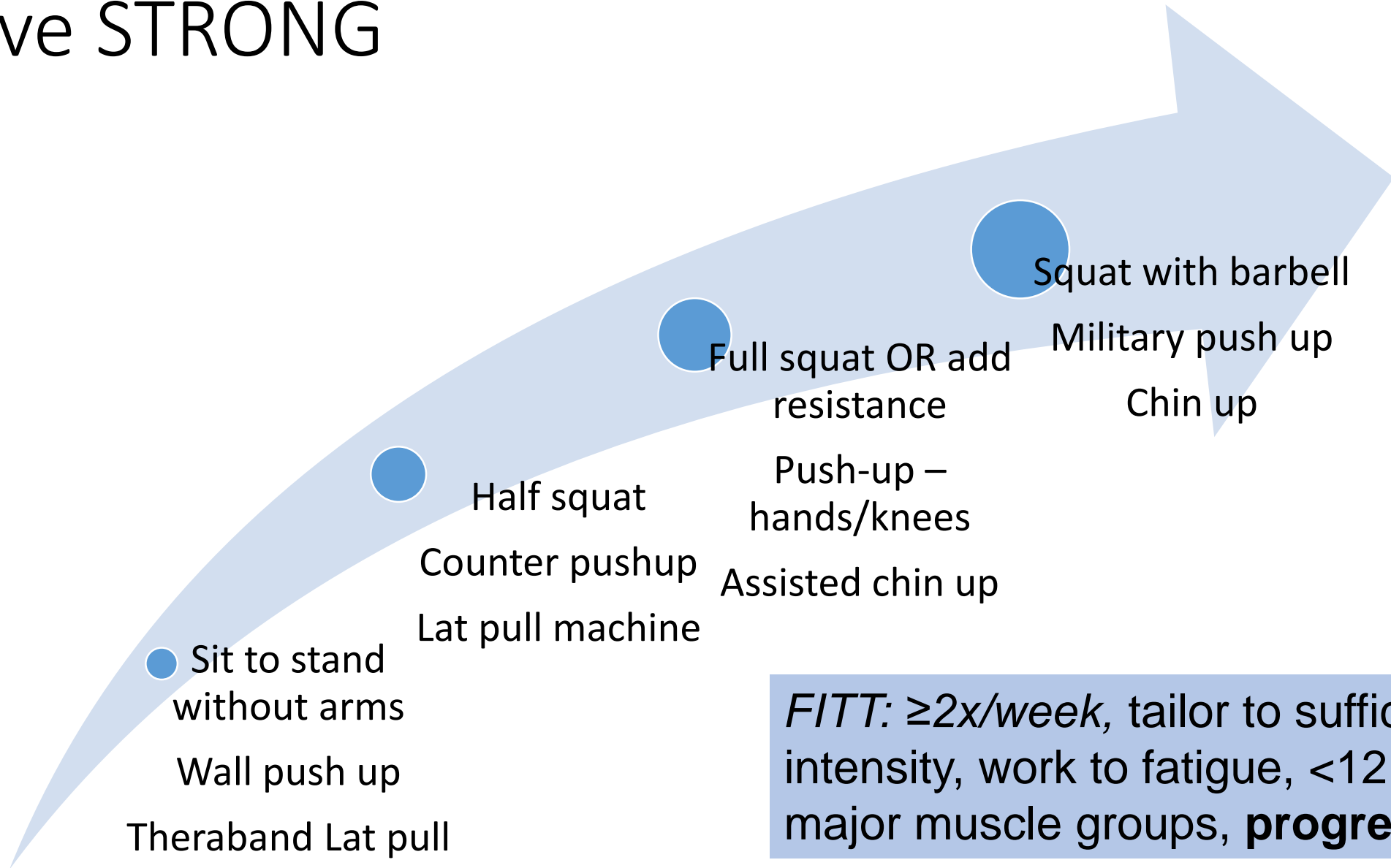
Arthur Webb, 74
Ultramarathoner
15 ultras since age 58



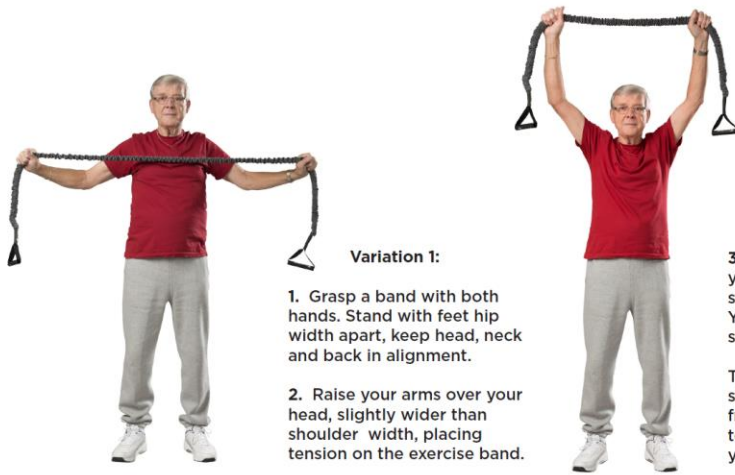
LIFTMOR Trial – JBMR 2017

- High intensity strength training in healthy osteopenic/osteoporotic women ↑ BMD and physical performance
- Both hip and spine BMD increased relative to controls
- Consistent with previous studies

Move STRONG



*FITT: ≥ 2 x/week, tailor to sufficient intensity, work to fatigue, < 12 reps, major muscle groups, **progression***



Variation 1:

1. Grasp a band with both hands. Stand with feet hip width apart, keep head, neck and back in alignment.

2. Raise your arms over your head, slightly wider than shoulder width, placing tension on the exercise band.

3. Slowly try to bring your arms out to the sides (making a "T"). Your elbows can be slightly bent.

The exercise band should come down in front of your body to touch the middle of your breast bone.

Move STRONG

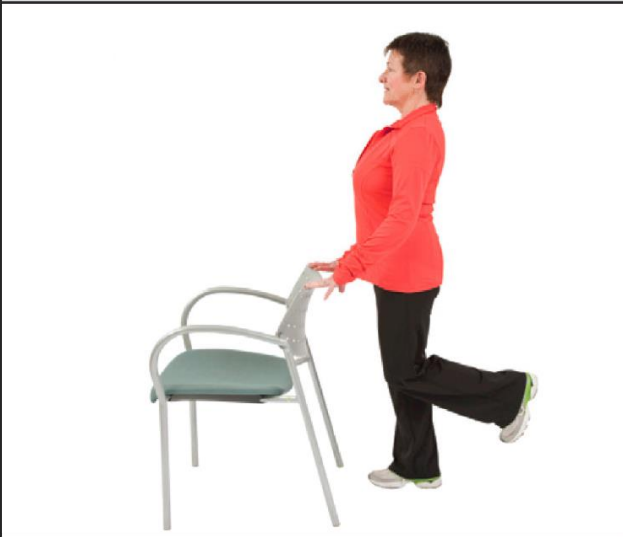
Lunge
Hinge
Squat
Reach
Pull
Push



Functional movement	Standing	Progression 1	Progression 2
Reach up	Resisted ¹ cross-body thoracic extension	Counter thoracic/lumbar extension Resisted ¹ overhead press	Weighted ¹ overhead press
Pull	Standing resisted row or pull down	One-arm resisted pull down or row	TRX row Chin up
Sit and Stand	Sit to stand (can use arms, box)	Low box sit to stand Half squat Body weight squat	Weighted ¹ squat, sit to stand or half squat Split squat or one-leg squat
Push ups	Wall push up	Counter/table push up	Plank to push-up or push up
Step ups	Low step up Weighted ¹ low step up	Progressive increase in riser height	Increase riser height + weighted ¹
Stand tall, carry your stuff	4-10m weighted ¹ carry, “Farmer’s walk”	Progress distance to 20m	Complete 4 x 20m Increase weight

Reduce your base of support

- Stand with feet together or on 1 leg (see photo).
- Balance on your heels only or on your toes only.
- Walk while you balance on your toes or heels only.
- Stand with 1 foot in front of the other. Your front heel touches your back toes.



Shift your weight

- Move your weight more to 1 foot than the other.
- Lean side to side or front to back.
- Shift your weight from toes to heels.

Respond to things that upset your balance

- Correct your balance after something upsets your balance. For example, catch a ball and correct your balance.
- Balance on an unstable surface. For example, a piece of foam or a BOSU ball. A BOSU ball has a flat bottom and a round top. It doesn't roll.

Do activities that require coordination or shifting weight while moving around

- Dance.
- Do Tai Chi.
- Walk heel to toe in a line or in a figure eight.



What is balance training and why should I do it?

FITT:

Frequency: Daily

Intensity: Challenging

Time: 3 hrs/week exercise*

Type: see left

Choose aerobic and RT that challenge balance!

<http://clockyourself.com.au/>

Aligned and Steady!

- Use the mirror
- Take mobility breaks
- Pay attention to posture during daily activities
- Mobilize joints that restrict good alignment



Take mobility breaks
Sit and stand
straighter
Core activation

Exercises to improve
alignment, range of
motion, support core

More
challenging
exercises
Yoga



Alignment and Core Stability Cues

Target	Example Cues
Forward head posture	<ul style="list-style-type: none">• Gently bring head back so it is as aligned with shoulders as possible
Hyperkyphosis, rounded shoulders	<ul style="list-style-type: none">• Imagine weights hanging from shoulder blades, pulling them toward your back pockets;• Lift breastbone gently up to the ceiling;• Take a breath, fill the back of your lungs first.
Abdominal bracing to support the spine	<ul style="list-style-type: none">• Gently brace your abdomen as if someone were about to poke you in the stomach.
Mobilize joints that restrict good alignment	<ul style="list-style-type: none">• Heel and toe taps (ankle ROM)• Long strides, lunges (hip flexors)• Modified downward dog, arms wide (chest/shoulder)



Considerations for yoga

- Tell your instructor you have osteoporosis
- Look for a class/instructor that knows what to do for osteoporosis
- Control, not intensity!
- Use props for alignment, not to push the limit
- Modify:
 - Full bending or twists or hip rotation
 - Weighted
 - Combine sitting and twisting or bending
 - Are rapid or repetitive
- Transitions are important

Yoga postures you should
continue to do with proper
instruction and guidance:

- Corpse
- Bridge
- Warrior
- Mountain
- Chair
- Crocodile
- Sphinx
- Locust

Yoga postures you should avoid:

- Spinal rocking
- Ragdoll
- Saw
- Plow
- Pigeon



What's coming up?

Canada's Physical Activity Guidelines

- 24-hours
- Combine adults and older adults

Osteoporosis Canada Guidelines

- Impact
- Walking
- Resistance exercise
- Balance
- Yoga, Pilates

Sister Madonna Buder, the “Iron Nun”

- Age: 86, began running at age 48
- 360 triathlons and 45 Ironmans

“You need a target – however big or small – and to build your health and fitness towards it.” - **Yuichiro Miura**

- New challenges, no matter what age
- Progress the challenge over time
- Manage set-backs
- Specificity:
 - Huff and puff for heart and lungs
 - Move **STRONG**
 - Test your steady limits

Yuichiro Miura, Age: 83

- Miura reached the summit of Mount Everest three times, *after* the age of 70
- At 80, became the oldest person to reach summit *after* 4 heart surgeries.



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