

## High Intensity Intervals

High intensity intervals offer health benefits on all levels – physical, mental, and emotional

### Definitions

- Aerobic = using oxygen: comfortable exercise, glucose is the fuel
- Glycogen = stored glucose in muscles and liver
- Anaerobic= without oxygen; at higher levels of exertion and demand
- Lactate = lactic acid, result of anaerobic exertion
- AT = anaerobic or lactate threshold, lactate accumulates in blood  
<http://www.scientificamerican.com/article.cfm?id=why-does-lactic-acid-buil>
- DOMS = delayed-onset muscle soreness (avoid anti-inflammatories)
- Heart rates: resting, target HR (aerobic), maximum (anaerobic)

Age	Target HR (50-85%)	Average maximum (100%)
20	100-170 beats per min	200 beats per min
30	95-162	190
40	90-153	180
50	85-145	170
60	80-136	160
70	75-128	150

### Parameters of high intensity intervals:

- Duration: 20 seconds to 5 minutes
- Intensity: maximal, or anaerobic
- Cycles of exertion and rest

## Health Benefits

- Athletes can increase endurance (aerobic) and cardiovascular fitness and anaerobic strength
- Cardiovascular: improves cardiovascular fitness overall
- Diabetics improve insulin sensitivity
- Fat loss accelerated
- Growth hormone increases
- Inflammation reduced
- A great opportunity for sedentary workers!
- Cognitive and emotional benefits in young people and old
- And in seniors: as well as an opportunity to reduce age-related muscle loss and frailty
- Because it's easy to fit in any lifestyle: easy to stay with it!

## Incorporated into a regular routine that involves

- A generally active lifestyle
- Occasional heavy lifting
- Twice a week: an intervals workout

\* For anyone with heart disease or high blood pressure — or who has joint problems such as arthritis or is older than 60 — experts say to consult a doctor before starting interval training.

## Ready, set, go!

- Warm-up (flexibility, with or without aerobic base)
- Intervals
  - Bursts of intense exertion (20 seconds – 4 minutes)
  - Alternating with gentle exertion (10 seconds – 3 minutes)
- Cool down
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Contact either one of us for more information!

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## Intervals...

### For First-Timers:

Repeat 3 times, working for 20 seconds, resting for 10. Rest for 1 min. between ea. set

Chair Squats	Place a chair behind you, and simply sit the stand and repeat. *For added support for sore knees, place a chair in front of you, facing away, so you can use it's back if need-be.
Cougar Arms	(Does the name make sense? No. It doesn't.) Hold your arms out to side, parellel with the ground, and make little circle with your hands.
Chair-Climbers	Place your hands on the seat of your chair, and draw your knee towards your chest. Repeat with other leg. Speed is extra credit!

### For the Middle-Of-The-Road-ers:

Repeat 3 times, working for 20 seconds, resting for 10. Rest for 1 min. between ea. set

Standing Lunges	Step forward, bending at both knees and lower your back knee straight down towards the ground, as low as is comfortable. *Make sure your front knee stays "stacked" directly above your front ankle. *Hold onto a chair back for added stability.
High Knees	Draw your knee up to your chest, alternate legs. Speed is extra credit!
Chair Froggers	Place your hands on the seat of your chair, and draw your knee towards your elbow. Repeat with other leg. Speed is extra credit! Yahoo!

### For The Graduates:

Repeat 4 times, working for 20 seconds, resting for 10. Rest for 1 min. between ea. set

Power Lunges	Lunge in place, exploding off your feet as you "jump" into your next squat. *Watch that front knee!
Tri-Dip/Push up	Find a bench: 1 Triceps dip then flip your body over and do 1 push-up on the bench. Guess what speed gives?
Burpies	Drop down to plank, draw feet up under you (together), stand, hop, repeat.