

## Preventative Health

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### *New methods to maximize exercise*

When someone goes out for a jog or runs a marathon, they exert a moderate level of intensity for a long duration. If they were to sprint, they would exert a high level of intensity for a very short period of time. Interval training has become increasingly popular and it entails alternating your workout between brief intervals of high intensity and moderate or low intensity activities.

There are many benefits. You can burn calories more efficiently both during and after exercise, so you can spend less time working out. It improves aerobic and anaerobic capacity, which includes aerobic activities like swimming, walking, running, and cycling and anaerobic activities like weightlifting and yoga. Interval training improves cholesterol profiles and insulin sensitivity, it slows aging at the cellular level, improves strength, speed, and endurance while reducing muscle loss, pain and inflammation. Importantly it also causes your brain to release brain-derived neurotrophic factor (BDNF). BDNF promotes the formation of new connections in your brain, which aid in learning and memory.

The great thing about interval training is that it can be used by everyone from average exercisers like Jeannette to elite athletes like Dave. (I put that in there to make Dave blush.) It is also good for every age, requires no special equipment and can be done with many different exercise types. Here are some patterns of exercise that can be used with walking, running, biking, swimming, weight lifting, etc.

#### 4-by-4 Norway Method

- Warm-up – 10 minutes
- 4 minutes intervals high intensity
- 4 minutes of rest (repeat steps 2 and 3 four times)
- Cool Down – 5 minutes

#### The Tabata Method

- Warm-up – 10 minutes
- 20 sec intervals high intensity
- 10 sec of rest (repeat steps 2 and 3 for four minutes with each exercise)
  - For example: with each of the following exercises: squats, push-ups, crunches, burpees, thrusters, planks/mountain climbers, dips
- Cool Down – 5 minutes

#### The 10-by-1 Method

- Warm-up – 10 minutes
- 1 minutes intervals high intensity

- 1 minutes of rest (repeat steps 2 and 3 ten times)
- Cool Down – 5 minutes

Don't forget to warm up and cool down, which should include stretching! This is especially important as we get older to avoid injury. Also, interval training is recommended 2x per week.

### *Fasting of Fed Prior to Exercise*

Some people ask, "If I'm going to exercise in the morning, should I exercise before or after breakfast?" Biochemically, fasting or skipping breakfast prior to exercise increases the breakdown of fat (lipolysis), but without the calories your exercise performance is reduced. Overall, studies show that fasting prior to exercise does not affect weight loss, but may affect overall health by balancing blood sugar and improving your heart disease profile.

Gregory brought up a great point about food. Walkers, who perform lower intensity exercise, tend to work up an appetite and may over consume calories after a walk, whereas runners or those who perform high intensity training or interval training tend to do the opposite. They are thirsty but not hungry after exercise and tend to lose weight faster.

### *Intermittent Fasting*

Certain types of fasting diets have been associated with improved obesity, insulin resistance, high cholesterol, high blood pressure, and inflammation. Fasting is a form of dieting where an individual goes a designated period of time without eating. The latest trend has been to fast for 16 hours per day and to only eat during an 8 hour period. Beware this may be dangerous for those with diabetes, cancer, migraines, chronic pain, mood disorders, pregnancy, breast feeding, kids, eating disorders, etc. The thought is that longer fasts put the body into starvation mode and burn less calories where shorter fasts maintain your same metabolic rate and allow you to continue burning calories.

The truth is... this is a bit of a fad. The only way this works is if you actually skip a meal. Then you are decreasing your caloric intake and can lose up to 2.5-9.9% of your body weight. The biggest limitation has been sustainability. Oh, and it doesn't help athletic performance.

If you are trying to lose weight, remember it is easier to cut calories from your diet than to try to burn them off. I've been reminded that it takes a 2 mile run for me to burn off 2 small box cookies. So Dad and I work-out before the ice-cream to make sure its accounted for... most of the time!

### *Wearable Technology*

Here are the pros and cons:

## Pros

- Widely available
- Reasonably priced to higher priced
- Avoid bias is self-reporting and you can track your fitness over the course of years
- Reminder to move
- Empowering and motivating
- Can help leverage social networks

## Cons

- Can encourage addiction like behaviors
- Some folks have fears about privacy
- Calories burned may be overestimated
- Details about sleep are inaccurate
- Most people abandon them within 6 months
- May limit breadth of exercise type, like stretching, if you are just always trying to achieve steps

Here is a really small table of all of the devices that we have tried... feel free to enlarge to see.

Device	Screen	HR	H2Oproof	Activity Tracker	GPS	Battery Life	Sleep Tracker	Hydration	Stress Level	Menses	Meditation	Temp	Resp rate	Inactive time	NOTES
FitBit Charge 4	Y	Y, active zone	Y	Y	Y	6-7 days	Y	N	N	N	N	N	N	N	
FitBit Watch	Y	Y with EKG	Y	Y	Y	7 days	Y	N	Y	N	Y	Y	N	N	
Garmin VivoSmart4	Y	Y	Y	Y	N	7 days	Y	N	N	N	Y	Y	N	N	Not for serious athletes
Garmin Fenix 6	Y	Y, & pulse ox	Y	Y	Y	14 days	Y	Y	N	N	N	Y	Y	N	Maps, elevation gain, gradient, altitude...
Oura Ring	N	Resting only, variability	Y	Y	Y	6 days	Y	N	N	N	N	Y	Y	Y	
Bellabeat	N	N	Y	Y	N	3 months	Y	Y	Y	Y	Y	N	N	N	Designed for women

## Other Pearls

- HEPA filters with activated carbon make great air filters and purifiers. The HEPA filters 99.97% of particulate matter >0.3 microns, bacteria, and viruses, but not odors (unless they include activated carbon). The activated carbon absorbs pollutants, chemicals, gases, smoke, odors, but is not as affective with allergens or particulate matter... hence the HEPA filter combo!
- To prevent problematic internet use during the pandemic, make a schedule for the day that includes sleep, physical activity, relation techniques, and time to be alone. Self-monitor and regulate one's use of screen time. Act as good role models for your children and grandchildren. Rely on tools other than computers/phones/TV whenever possible and seek help when needed.