Healthy Exercise

General principles

There are lots theories regarding proper exercise. There are many sports trainers who are active body builders with a goal to maximize muscle size and strength. Some cardiac doctors promote an exercise regimen that gets the heart pumping to a maximum rate. There are a multitude of companies that sell vitamins and supplements, while some prefer buying indoor exercise equipment for home use.

Despite the hype and conflicting advice, the basic principles are fairly simple:

- Do mostly aerobic exercise.
- Exercise regularly (daily if possible).
- Include strength training — it protects your joints.
- Sleep 7- 8 hours a night.
- If a body part is injured or hurting, allow enough time for healing.
- Do exercise that you enjoy.

Aerobic exercise

To live a long life, **endurance is more important than strength**. Based on what lifetime sport a professional athlete plays, seem to indicate a recurring theme for their mortality: Football players tend to die in their 50s, basketball players in their 60s, baseball athletes in their 70s, while golfers often live to their 80s/90s. Lighter exercise over a longer period of time is better than engaging in heavier efforts over a shorter period of time.

Consistently using heavy weights produces big muscles. By working out with lighter weights, along with more repetition sets, the body grows more mitochondria. Mitochondria create a powerhouse of organelles, acting like the digestive system to take in nutrients and create cell energy. Mitochondria burns sugar and fat, uses up oxygen and generates energy. The process of creating cell energy is known as **cellular respiration.**

Additional benefits using light weights/more reps

- Increases circulation.
- Burns calories.
- Exercises the heart and lungs.
- Reduces cortisol (the stress hormone).

Walking, hiking, jogging, swimming, treadmill, elliptical machines, stationary and outdoor bikes all can provide extended episodes of aerobic exercise. Bones are strengthened and excess sugar and fat are burned off. Stress hormones are reduced and endorphins (natural calming hormones) increase.

Circulation improves the entire body, including the brain and heart while artery plaque is reduced and improves collateral circulation. Strength training does help build muscle and can increase burning calories and fat, ***but for healthy aging, regular aerobic exercise is more important.***

Exercise regularly

The familiar catchphrase, “Use it or Lose it” is true. As we use our muscles, joints and bones, the body grows and adjusts to strengthen those body parts. Arteries carry fuel and oxygen and as we exercise, arteries grow to meet the increased demand. Muscle that is supplied by one artery can attract additional blood supply from nearby arteries. This double blood supply is called **Collateral Circulation**.

It is especially important in the heart. If one coronary artery has been gradually closing over the years, other arteries can grow and enlarge to make up for the reduced supply of blood. Even if one artery suddenly closes completely (a heart attack), other arteries can supply oxygen and fuel and prevent heart muscle death. Autopsies conducted on elderly, regular exercisers have shown that many had unknowingly suffered prior heart attacks, but survived because of collateral circulation. Over time, clogged arteries can even re-open (for regular exercisers).

Muscle development and strength

Muscle action requires the proper functioning of several muscle cell parts. When stimulated by nerves, muscle fibers pull together causing the muscle to contract, getting their energy from mitochondria. Exercising with heavier weights builds more muscle fiber, increases muscle size and strength. Doing more repetitions with lighter weights stimulates the growth of mitochondria. Repetitions also stimulate the growth of arteries and veins to better supply the muscle with needed blood.

Increasing endurance

Exercising to the point of sweating increases endurance. To increase heart and lung capacity**,** engage in short bursts of intense exercise to get the heart beating rapidly and to become more breathless. These are called **wind sprints or HIIT** (High Intensity Interval Training). As a long-term plan, a mixture of aerobic exercise with some weight training and some HIIT is best.

Joint health

Muscle, heart and bone can function for decades, but many professional athletes have their careers cut short because of painful joint problems. It is important to receive professional instruction on how to exercise safely. Jogging is very bad on the joints, hard on the hips, knees and ankles. As we age, transitioning from sports that strain the joints to less jarring sports is wise. Walking, swimming, hiking, biking and elliptical machines can provide good exercise options even into old age.

Stretching

Tendons cannot stretch but muscles can. Over contracted muscles lengthens when you stretch. Yoga and Pilates are both good stretching and strengthening programs. Make sure to receive instruction from a certified instructor — a trained instructor can watch what you do and make sure the pose is safe and correctly done.

Work out symmetrically

Whatever side or body part you start with**,** always work the opposite side or body part. Many people tend to focus only on their abdominal muscles, with little regard for strengthening the back (which can lead to severe back problems).

General healing and restoration

People that regularly exercise will get injured on occasion. Sometimes we push ourselves to use a higher weight, increase the exercise time, run at a faster pace or improve repetition sets. Even though this is good for building strength and endurance, occasionally, something begins to hurt.

It is important to adjust your program to allow time for healing. After a particularly long hike or strenuous work out, take some time off. All predatory animals spend a fair amount of time just lying around. Rest. It is very important to **get seven to eight hours of sleep daily.** Exercise stresses the adrenal glands and proper rest is needed for restoration. We see many patients with adrenal fatigue or even adrenal failure. This can be from work pressure or family stress, even from too much exercise. Ideally, it's best to get a proper combination of work, exercise, restorative rest and sleep.

The pleasure of movement

Regular exercise will go a long way to stay younger and fit. Don't put added pressure by trying to meet particular goals -- there is no need to count calories (eaten or burned). By eating healthy, genuine food and getting regular exercise, you have built a foundation for long-term health. Enjoy!