

PHYSICAL EXERCISE & OUR BRAINS



Regular physical activity is an important part of a healthy lifestyle. Not only is exercise good for your muscles and bones, but it is also an important part of keeping your brain healthy too. Exercise improves blood flow and memory; it stimulates chemical changes in the brain that enhance learning, mood and thinking.

What is happening in the body and brain during exercise?

As your heart rate increases during exercise, blood flow to the brain increases. As blood flow increases, your brain is exposed to more oxygen and nutrients. Exercise also induces the release of beneficial proteins in the brain. These nourishing proteins keep brain cells (also known as neurons) healthy, and promote the growth of new neurons. Neurons are the working building blocks of the brain. As a result, individual neuron health is important to overall brain health.

Exercise boosts your mood and reduces stress.

When you exercise, your body releases chemicals such as dopamine and endorphins in your brain that make you feel happy. Not only is your brain dumping out feel-good chemicals, but exercise also helps your brain get rid of chemicals that make you feel stressed and anxious. People who exercise tend to be happier and less stressed than those who don't exercise. Regular exercise can also help you control your emotions when you do feel angry or upset.

Overall Exercise Guidelines

- Correct technique is very important
- Safety and good balance are extremely important
- Always have help with starting exercises and/or if you are having problems and or pain
- Check with your health care providers for clearance if you have any medical/physical health issues

Physical Exercise - Keep It Simple

"Falling is never allowed!" - Dr. Rolf Lulloff

Examples of simple low stress exercises to improve balance, flexibility and strength.

1. Aerobic exercises such as walking, swimming, biking, dancing, etc.
2. Standing balance exercises
3. Straight leg raises with quad sets
4. Chair exercises (repetitive sitting/standing) with a sturdy chair

Standing Balance Exercises

- Stand alongside (not facing) a sturdy surface like kitchen or bathroom sink/counter
 - Hold onto the sink/counter with one hand as needed for stability/balance
 - Stand maximally tall (especially straight in the hips, knees, spine)
 - Lift one knee (the one closest to the sink/counter) straight ahead so that the knee is at the hip elevation. Hold for a count of 5 (seconds)
 - Return that knee to the maximally tall posture
- Lift the other knee straight ahead so that the knee is at the hip elevation. Hold for a count of 5 (seconds)
 - Return to the maximally tall position
 - Repeat 5-10 times, each lower extremity/knee lift
 - Remember, hold on for stability (even with another person's assistance if necessary)
- Build up to doing 10 repetitions 2- 3 times daily

Straight Leg Raises with Quad (Quadriceps) Sets

- Tip - do before you get out of bed in the morning and when you go to bed at night
- Lie flat on your back with your hips and knees maximally straight
- Have your feet /legs rotated outward (so that your right foot/toes are pointing to one o'clock (straight upward is twelve o'clock) and the left foot/toes are pointing to eleven o'clock)
- Lock your right knee maximally straight by tightening your quadriceps muscle (the large muscles on the front of your thigh).
- Keeping the knee maximally straight lift the right lower extremity upward so the heel is about 12 inches off the mattress. Hold it there for 5-10 seconds. (Remember to keep your foot/lower extremity externally rotated to one o'clock).
- Return the right lower extremity to the supporting surface and relax the muscles.
- Do the same exercise on the left lower extremity with the foot/lower extremity rotated to eleven o'clock
- Start at 5 repeats each lower extremity and build up to 10 repeats, 2-3 times each day

Chair Exercises - Hip Marches and Arm Raises

- This exercise will strengthen hips and thighs, and improve flexibility.
- Sit upright and do not lean on the back of the chair. Hold on to the sides of the chair.
- Lift your left leg with your knee bent as far as is comfortable. Place your foot down with control.
- Repeat with the opposite leg.
- Do 5 lifts with each leg.
- This exercise builds shoulder strength.
- Sit upright with your arms by your sides.
- With palms forwards, raise both arms out and to the side, and up as far as is comfortable.
- Return to the starting position.
- Keep your shoulders down and arms straight throughout. Breathe out as you raise your arms and breathe in as you lower them. Repeat 5 times.

Visit www.braincentergb.org

for more information about exercise and the brain.

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