

## PRE-PARTICIPATION HEALTH SCREENING (Aerobic Exercise)

**You should be at least 10 weeks following your Stroke Event before Participating**

### **Is it Safe to do Aerobic Exercise if I have other Medical Issues?**

Review the following with your physician, therapist, and if possible someone in your family to determine if you have any of these conditions. Then follow the recommendations.

**What is the Valsalva maneuver?** This is where you forcefully attempt to breath out (expiration) against a partially closed throat. You might do this if you are straining to lift something that is heavy. When you do this it can raise your blood pressure.

**What do the blood pressure numbers referred to below mean?** Your monitor will display a number such as 120/80. The top number “120” represents your systolic blood pressure (BP) which is the highest pressure in your artery (blood vessel) when you heart is pumping blood to your body. The bottom number “80” represents your diastolic blood pressure which is the lowest pressure in your artery when your heart is at rest.

Diagnosis/event	Safe to Start Exercise	Comments
<b>Resting Blood Pressure, upper limits</b>	Safe if Systolic BP is 170 mmHg or less and/or if Diastolic BP is 110 mmHg or less	Depending on the circumstances, lighter exercise may be safe for patients not satisfying this criterion. However, it is not safe to exercise if systolic BP is greater than 200 mmHg and/or a diastolic BP greater than 110 mmHg and you should contact your primary care physician if it is.
<b>Resting Blood Pressure, lower limits</b>	Do not exercise if Systolic BP is less than 90 mmHg and/or if Diastolic BP is less than 50 mmHg	The brain has less protection against low BP (also called hypotension) than high BP (called hypertension) if you have had a stroke. <sup>1-4</sup>  If person commonly has low resting BP with dizziness, light-headedness, and fainting then investigation and possible medication adjustment is required before exercise initiation.
<b>Resting Blood Pressure (Diabetes), upper limits</b>	Safe if Systolic BP is 160 mmHg or less and/or Diastolic BP is 100 mmHg or lower	Depending on the circumstances, lighter exercise may be safe for patients not satisfying this criterion.
<b>Resting Blood Pressure (Diabetes), lower limits</b>	Do not exercise if Systolic BP is less than 100 mmHg and/or if Diastolic BP is less than 60 mmHg	The brain has less protection against low BP (hypotension) in people after stroke and with diabetes. <sup>5, 6 7</sup>
<b>Resting Blood Pressure (retinopathy, aortic aneurysm, kidney disease, ventricular aneurysm)</b>	As close to 120/80 mmHg or less as possible	Depending on the circumstances, lighter exercise may be safe for patients not satisfying this criterion.

<b>Resting Heart Rate, upper and lower limits</b>	Safe if heart rate is less than 100 beats per minute and more than 50 beats per minute	In some circumstances a heart rate below 50 beats per minute may be acceptable (please check with your physician)
<b>Diabetes</b>	No active foot ulcers if lower body exercise planned. Must have controlled blood glucose before initiating exercise.	-----
<b>Anemia, significant electrolyte imbalance, hyperthyroidism, fever</b>	Wait until treated/corrected	-----
<b>Myocardial Infarction (heart attack)</b>	4 to 6 weeks if no complications	Safe at 4 weeks if left ventricular function is normal and there were no complications. Patients are at higher risk if history of cardiac arrest and if ejection fraction is <40%.
<b>Any Cardiac or Blood Vessel Procedure or Surgery (e.g. Coronary Artery Bypass Surgery, Valve surgery, angioplasty/stent etc.)</b>	6 to 8 weeks	6 weeks if no complications
<b>Heart Failure</b>	Clearance from physician and guidance from a health care professional. Stable New York Heart Association Grade I-III	Assessment may be required.
<b>Atrial Fibrillation</b>	As soon as stable INR (clotting times)	Ensure that the heart rate is well controlled.

<b>Peripheral Angioplasty</b>	3 weeks	-----
<b>Pacemaker Implantation</b>	At least 4 weeks	Defer starting until follow up pacemaker check and final settings established
<b>Implanted Cardioverter Defibrillator (ICD)</b>	Clearance from physician and guidance from a health care professional. At least 4 weeks	Defer starting until follow up ICD check and final settings are established
<b>Left Ventricular Thrombus</b>	Clearance from physician and guidance from a health care professional. Wait 6 weeks	Cardiopulmonary assessment when cleared by echo cardiogram result or after 3 months of Coumadin therapy.
<b>Heart Transplant Surgery</b>	Clearance from physician and guidance from a health care professional. 6-8 weeks if no infections. Defer if current severe rejection episode.	-----
<b>Aortic Aneurysm (an abnormal bulge that occurs in the wall of the major blood vessel (aorta) in your body)</b>	Clearance from physician and guidance from a health care professional. Controlled resting BP (target less than 120/80 mmHg is reasonable)	Minimize increase in BP during exercise.
<b>Cervical Artery Dissection (a tear in the lining of a blood vessel in the neck)</b>	Must have clearance from physician and guidance from a health care professional. Must be at least 8 weeks post dissection and have controlled resting BP (target less than 120/80 mmHg is reasonable)	Start with light intensity exercise. Follow guidelines for minimizing increase in BP. Avoid neck flexion.

<b>Significant Carotid Stenosis (blockage in the blood vessels of the neck)</b>	If you have blockages of both carotid arteries (blood vessels in the neck) of 70% or more you should not start aerobic exercise. If the blockage is just less than 70%, then see comment to the right.	Avoid rowing exercise.
<b>Glaucoma (eye condition)</b>	Normal intraocular pressure (~20 mmHg) or approved by ophthalmologist. Must be adherent to anti-glaucoma medication.	Avoid exercise while lying down, rowing exercise, and Valsalva maneuver (see definition above).
<b>Diabetic Retinopathy (eye condition)</b>		Aerobic Training: Avoid rowing exercise or other exercise that may lead to Valsalva maneuver (see definition above).
<b>Patent Foramen Ovale (PFO) A PFO is a hole in the heart that did not close the way it should after birth.</b>	Clearance from physician and guidance from a health care professional.	Avoid Valsalva maneuver (forcefully opens PFO). Avoid rowing exercise. May experience low oxygen in the blood and shortness of breath (monitor oxygen saturation). Manage case by case. Minimize BP increase.
<b>Recent non Cardiac Surgery</b>	Clearance from surgeon (usually 3 weeks)	-----

This document is to be used as a guide to determine safe exercise for people post-stroke. This guide should be used in consultation with a physician. All decisions should be made on a case-by-case basis. These guidelines do not override the responsibility of the healthcare professional to determine when it is safe to initiate exercise depending on the individuals' circumstances.

Note: The time lines are based on a combination of evidence and experience at Toronto Rehab's Cardiac Rehabilitation Program. Medical clearance is necessary and medical history should be reviewed prior to participating in exercise

## References

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