

## PRE-PARTICIPATION HEALTH SCREENING

### (Resistance/strength Training)

#### **Is it Safe to do Resistance/Strength Training if I have High or Low Blood Pressure, an Eye Condition, Hernia, or other Medical Issue?**

Review the following guidelines 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.

**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. See the document on how to measure your blood pressure.

**Guide to Screening and Precautions for Resistance Training (RT) Participation**  
**(You should be at least 10 Weeks following your Stroke Event to Participate)**

<b>Diagnosis/event</b>	<b>Safe to Start Resistance Training</b>	<b>Comments</b>
<b>Resting Blood Pressure, upper limit*</b>	Safe if less than 160 mmHg (Systolic BP) and less than 100 mmHg (Diastolic BP)	If borderline high: perform resistance training when your BP medication is at peak effect. Follow the guidelines for minimizing increase in blood pressure during RT document.
<b>Resting Blood Pressure, lower limit</b>	Safe if your systolic BP is not lower than 90 mmHg and/or your diastolic BP is not lower than 50 mmHg	If you commonly experience low resting blood pressure with dizziness, light-headedness, and fainting then investigation and possible medication adjustment is required before exercise initiation. Also, follow the instruction in this document:

<p><b>Low Blood Pressure after Exercise.</b></p>		<p>Post exercise hypotension (or very low BP) can occur after exercise.<sup>1</sup> The post-stroke brain has less protection against episodes of hypotension than if your BP increases a lot.<sup>2-5</sup> See document on preventing post exercise hypotension.</p>
<p><b>Resting Blood Pressure Precautions if you have retinopathy (eye condition related to diabetes), aortic aneurysm, kidney disease, ventricular aneurysm.</b></p>	<p>Safe to exercise if your Systolic BP is less than 150 mmHg and your diastolic BP is less than 100 mmHg</p>	<p>Perform resistance training when your BP medication is at peak effect unless there is greater risk of hypotension.</p>
<p><b>Diabetic Retinopathy (eye condition)</b></p>	<p>If you have retinal bleeding or detachment then you should not do any resistance training.</p>	<p>People with proliferative or severe nonproliferative retinopathy or recent laser eye surgery should consult with their ophthalmologist prior to participating in resistance training.</p>

<b>Glaucoma</b> (eye condition)		<p>Must be taking your anti-glaucoma medication as prescribed. Your intraocular pressure should be normal (~20 mmHg) or approved by ophthalmologist. Avoid exercise lying down and Valsalva maneuver (holding your breath and bearing down).</p>
<b>Intracranial Aneurysm</b>	<p>You should not do any resistance training.</p>	<p>No resistance training.</p>
<b>Hernia (unrepaired)</b> <p>A hernia is when part of an organ or tissue bulges through a weak spot in the wall of muscle that surrounds your abdomen.</p>	<p>If you have symptomatic or large abdominal or inguinal hernia (except hiatus) then you should not be resistance training</p>	<p>If you have been approved by a physician for RT, then avoid sit ups or other exercise that strains the abdominal muscles. Wear a binder if prescribed.</p>
<b>Aortic Aneurysm</b> (an abnormal bulge that occurs in the wall of the major blood vessel (aorta) in your body)	<p>You need clearance from your physician and should have controlled resting blood pressure (target &lt;120/80</p>	<p>Follow the document on guidelines for minimizing increase in blood pressure.</p>

	mmHg is reasonable)	
<p><b>Significant Carotid Stenosis</b> (blockage in the blood vessels of the neck)</p>	<p>If you have blockages of both carotid arteries (blood vessels in the neck) of 70% or more you should not start RT. If the blockage is less than 70%, then see comments to the right.</p>	<p>Lift only a light weight load (easy) and follow guidelines for minimizing increase in blood pressure (see document in this section).</p>
<p><b>Patent Foramen Ovale (PFO)</b> A PFO is a hole in the heart that did not close the way it should after birth. It can lead to having a stroke. If this has not been repaired then please following recommendations to get clearance from physician.</p>	<p>Clearance from your physician is required before RT.</p> <p>Light intensity RT.</p>	<p>Avoid Valsalva maneuver when lifting weights as this forcefully opens PFO. Start with a light (easy) weight or lower. May experience a drop in the oxygen in the blood and some shortness of breath (monitor your oxygen saturation if you can). Follow your doctor's recommendations. Follow guidelines for minimizing increase in blood pressure(see document in this section).</p>

Cervical Artery Dissection (a tear in the lining of a blood vessel in the neck)	Must have clearance from physician and guidance from a health care professional. Must be at least 8 weeks post dissection and have controlled resting blood pressure (target less than 120/80 mmHg is reasonable)	Start with light intensity exercise. Follow guidelines for minimizing increase in blood pressure (see document in this section). Avoid neck extension (tilting the head back so the chin is almost pointing to ceiling).
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#### References

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9. Rothwell P, Howard S, Spence J. Relationship between blood pressure and stroke risk in patients with symptomatic carotid occlusive disease. *Stroke*. 2003;34(11):2583-2590.