

**Supplemental Material S2a.** Candidate behaviors relevant to the problem behavior identified in Step 1.

<b>Intervention Aim: Adaptively respond to tinnitus to aid habituation</b>
<b>Intervention designer response</b>
<ul style="list-style-type: none"><li>• Goal setting and monitoring.</li><li>• Increased understanding of tinnitus to adjust reactions to tinnitus.</li><li>• Exercises to encourage deep breathing and lower breathing rate.</li><li>• Reducing muscle tension and arousal by progressive muscle relaxation.</li><li>• Identify maladaptive thoughts resulting in unhelpful behaviors.</li><li>• Cognitively restructuring unhelpful thought patterns for behavioral activation.</li><li>• Engaging in positive imagery to reduce emotional distress and reactions to tinnitus.</li><li>• Reduce avoidance/safety behaviors.</li><li>• Reframing tinnitus-related fears and anxiety.</li><li>• Enhanced problem-solving abilities for relapse prevention.</li><li>• Better attention control to move attention away from tinnitus.</li><li>• Altering behaviors to improve sleep.</li><li>• Ability to listen to tinnitus to reduce tinnitus annoyance.</li><li>• Engaging in monitoring progress through weekly diary keeping.</li></ul>

**Supplemental Material S2b.** Criteria for prioritizing the identified candidate behaviors.

<b>Potential target behaviors relevant to improving management of tinnitus</b>	<b>Impact of behavior change<sup>a</sup></b>	<b>Likelihood of changing behaviors<sup>a</sup></b>	<b>Spill-over score<sup>a</sup> (i.e., impact on other behaviors, such as stress or anxiety)</b>	<b>Measurement score<sup>a</sup> (i.e., monitoring)</b>
Goal setting and monitoring	Promising	Promising	Promising	Promising
Increased understanding of tinnitus to adjust reactions to tinnitus	Promising	Promising	Very promising	Unpromising but worth considering
Exercises to encourage deep breathing and lower breathing rate	Promising	Promising	Very promising	Promising
Reducing muscle tension and arousal by progressive muscle relaxation	Promising	Promising	Very promising	Promising
Identify maladaptive thoughts resulting in unhelpful behaviors	Promising	Promising	Very promising	Promising
Restructuring unhelpful thought patterns for behavioral activation		Promising	Very promising	Promising
Engaging in positive imagery to reduce emotional distress and reactions to tinnitus	Promising	Promising	Very promising	Promising
Reduce avoidance/safety behaviors	Promising	Promising	Very promising	Unpromising but worth considering
Less hindered by fears or anxiety regarding tinnitus	Promising	Promising	Very promising	Unpromising but worth considering
Increase problem solving abilities for relapse prevention	Promising	Promising	Very promising	Unpromising but worth considering
Attention control to move attention away from tinnitus	Promising	Promising	Promising	Unpromising but worth considering
Altering behaviors to improve sleep	Promising	Promising	Promising	Promising
Ability to listen to tinnitus to reduce tinnitus annoyance	Promising	Promising	Promising	Unpromising but worth considering
Writing a weekly diary	Promising	Promising	Promising	Promising

<sup>a</sup> Rate as: unacceptable, unpromising but worth considering, promising, very promising