OPEN PEER REVIEW REPORT 1

Name of journal: Neural Regeneration Research
Manuscript NO: NRR-D-00153
Title: Noise-induced hippocampal damage: potential mechanisms
Reviewer's Name: R M Leão
Reviewer's country: Brazil

COMMENTS TO AUTHORS

The review by Molina and Guelman covers an emerging field on neurology and neuroscience which is the effects of sound stimulation on hippocampal function. It is well written but it lacks references. There are several reports on this subject which are not cited. And there are several statements not followed by a reference, or by a single reference. Some examples below:

Page 1, 2nd paragraph: "According to the literature, exposure to noise intensity higher than 80 dB is considered a stressful event and might produce different noxious effects on living beings (Molina et al. 2016b, 2021)". Needs more references.
Page 2, 2nd paragraph: "In addition, exposure to noise can cause emotional reactions such as annoyance and stress, mental and physical fatigue and changes in behavior, including difficulties in reading comprehension, memory and concentration in children (Molina et al. 2016b)". Needs more references and the second sentence as well.
Page 3, 1st paragraph: "Data from thevliterature have shown that noise can generate oxidative stress in different tissues of the auditory system, including the cochlea and the Corti organ, as well as in extra-auditory areas of the brain such as the prefrontal cortex and HC." References?
Page 3, 1st paragraph: "In these works, it was found that exposure to noise can increase the levels of reactive oxygen species (ROS) and peroxidative damage, as well as decrease the levels and / or activity of antioxidant defenses, generating oxidative stress." References?
Page 3, 1st paragraph: "In most cases, the greater the intensity and exposure sessions, the greater the oxidative stress and the neural damage generated." References?
Page 4, 1st paragraph: "It has been reported that noise can increase extra-cellular glutamate levels, generate changes in glutamine synthetase activity as well as in the expression of NMDA receptors and the glutamate transporter EAAT-1, in different developmental stages." References?
Page 4, 1st paragraph: "In most cases, the greater the intensity and exposure sessions, the greater the oxidative stress and the neural damage generated." References?
Page 5, 1st paragraph: "It has been reported that noise can increase extra-cellular glutamate levels, generate changes in glutamine synthetase activity as well as in the expression of NMDA receptors and the glutamate transporter EAAT-1, in different developmental stages." References?
Page 5, 1st paragraph: "It is important to highlight that there is a reciprocal relationship between excitotoxicity and ROS generation, in which one of the mechanisms favors the presence of the other." References?
Page 5, 1st paragraph: "On the other hand, if increased production of ROS is not counterbalanced by the antioxidant capacity of the endogenous system, ROS-induced overstimulation of glutamate receptor can, in turn, transform glutamatergic neurotransmission in a mediator of intracellular oxidative stress (Molina et al. 2021)". More references.
Page 5, 2nd paragraph: "On the other hand, it has also been postulated that noise can indirectly cause adverse effects in individuals when it interferes with daily activities, communication and disrupts sleep, leading to endocrine and sympathetic systems activation, as well as to cognitive and emotional reactions." References.
Page 6, 1st paragraph. "It is well known that prolonged exposure to glucocorticoids can produce

detrimental effects on HC, affecting its functions." References

And others. There are several self-references, it needs more diverse references to better cover this field.

Some suggestions:
Cui et al., 2009 Effect of Chronic noise exposure on spatial learning and memory... J Occup health 51
Manohar et al., 2020 Blast-induced hearing loss suppresses hippocampal neurogenesis and disrupts long term spatial memory Hear Res 395
Zhang et al., 2018 Remodeling of cholinergic input to the hippocampus after noise exposure and tinnitus induction in Guinea pigs Hippocampus 10.1002/hipo.23058
Fernandez-Quesada et al., 2019 Male rats exhibit higher pro-BDNF, c-Fos and dendritic tree changes after chronic acoustic stress BioScience Trends. 13(6):546-555.
Mzia et al., 2020 Behavioral and neuroanatomical effects on exposure to White noise in rats Neuroscience Letters 728 134898
Kraus et al., 2010 NOISE TRAUMA IMPAIRS NEUROGENESIS IN THE RATHIPPOCAMPUS Neuroscience 167 (2010) 1216-1226
Cheng et al., 2011 Moderate noise induced cognition impairment of mice and itsunderlying mechanisms Physiology & Behavior 104 981-988
Liu et al., 2016 Noise induced hearing loss impairs spatial learning memory and hippocampal neurogenesis in mice Sci Report 6:20374 | DOI: 10.1038/srep20374 mice
Franzili et al., 2017 Loud Noise and Brain Alterations Frontiers in Neuroanatomy
Goble et al., 2009 Acute high-intensity sound exposure alters responses of place cells in hippocampus Hearing Res 253
Kapllowicz and Thompson, 2016 Acute high-intensity noise induces rapid Arc protein expression but fails to rapidly change GAD expression in amygdala and hippocampus of rats Hear Res 342
Angelucci et al., 2007 Investigating the neurobiology of music: brain-derived neurotrophic factor modulation in the hippocampus of young adult mice Behavioral Pharmacology 16
Cunha et al., 2015 Inhibition of long-term potentiation in the schaffer-CA1 pathway by repetitive high-intensity sound stimulation Neuroscience Dec 3;310:114-27.
de Deus et al., 2020 Loss of Brain-Derived Neurotrophic Factor Mediates Inhibition of Hippocampal Long-Term Potentiation by High-Intensity Sound Cell Mol Neurobiol May 22