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Acoustic stress induces long term severe intestinal inflammation in the mouse

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Highlights

- AS can trigger a severe intestinal inflammatory process in healthy mice
- IL-17 tissue expression predominates during the acute response to AS, followed by that of IL-22
- TNF-α tissue expression mainly increases during the late and chronic response to AS.
- AS induces damage and proliferative foci (CCL25+Ki67+) in the intestinal lining
- Noise might be harmful to humans by generating or aggravating inflammatory bowel diseases.

Abstract

The influence of noise on the presentation and progression of inflammatory bowel diseases has been poorly analyzed. We designed this study to investigate immediate and late effects of acoustic stress (AS) on small intestine. To this aim, CBA/J, BALB/c and DBA/2 mice were divided into AS and control groups. AS mice were exposed to noise (300Hz-70dB) during 24hs and randomized into: A) Acute effects group: mice were killed after AS; L) Late effects group: mice were killed 3 weeks after AS and O) Over-exposed effects group: mice were submitted to AS once a week during a month and killed. Small intestine sections were histologically examined. The expression of