



# Study

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Test of the sound level generated by the Frequencer®

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## Abstract

This experiment measured the sound level generated by the Frequencer® model V2x during a normal treatment. With this data it is possible to assess the safety level of the treatment and also to compare it to previous Frequencer®1001.

## Introduction

The Frequencer® V2x is a second generation device following the Frequencer® model 1001. The Frequencer® treatment uses sound waves to move the secretions from the lungs.

Since the sound frequencies that the Frequencer® can generate are the audible range<sup>1</sup>, it is imperative to assess the sound level to avoid any hearing damage that the intensive use in a treatment with a Frequencer® V2x could cause. To measure the Frequencer® device's sound level during a treatment a sonometer was used. The sonometer was bearing a valid calibration scale at the time that the experiment was conducted. The sonometer gives a reading in dB.

## Experiment

For this experiment, the following was used:

Sonometer: AmpProbe SM-70

Calibration date: November 28th 2009

New calibration due date: November 29th 2010

Date of the experiment: June 2nd 2010

## Experiment Setup

The Frequencer® was placed on a bench for testing. The subject was placed at a distance of 12 inches from the Frequencer®. The sound level reading was taken on both left and right ears of the treated subject. The distance to the ears was about 3 inches. The sound level measurement lasted for at least 10 seconds and the highest value was recorded. The Frequencer® generated a constant frequency of 40 hertz at a maximum intensity (100%). The ambient sound level at the time of the test was also measured.

## Results

Position measured	Sound level	
	3 inches from left ear	3 inches from right ear
Ambient sound level	47.3dB	48.2dB
Frequencer® on mute	50dB	51.3dB
Superior left lobe	61.3dB	56.2dB
Inferior left lobe	59.2dB	57.4dB
Superior right lobe	60.2dB	65.5dB
Middle lobe (right)	58.5dB	60.9dB
Inferior right lobe	58.8dB	58.7dB

<sup>1</sup> The range use in the Frequencer® V2x is from 20Hz to 65Hz. In the previous model (Frequencer® 1001) the frequency range was from 20Hz to 100Hz.

## Discussion

Governmental authorities issue safety parameters for sound level exposure. These can be found on government websites such as [Quebec](#) and [Canadian Centre for Occupational Health and Safety](#).

A test was also performed for the Frequencer® 1001. Below is a re-transcription of the Frequencer® 1001 test, performed on April 28, 2003 using a Brüel type 2225 with a valid calibration scale. The test was performed by Ms. Gaston Dufour from CSST.

Position measured	Sound level	
	Frequency	Noise
Superior left lobe (front)	20 to 25 Hz	56 dBa
Superior left lobe (front)	120 Hz	78 dBa
Superior left lobe (front)	70 Hz	74 dBa
Inferior left lobe (front)	70 Hz	67.5 dBa
Superior right lobe (front)	70 Hz	65 dBa
Inferior right lobe (front)	70 Hz	61 dBa

## Conclusion

With these results it is safe to admit that the use of the Frequencer® V2x poses no threat to human hearing. In the light of governmental chart, at the dB level that the Frequencer® produces, the exposure of the Frequencer® device's noise level could be more than 16 hours straight without any hearing damage.