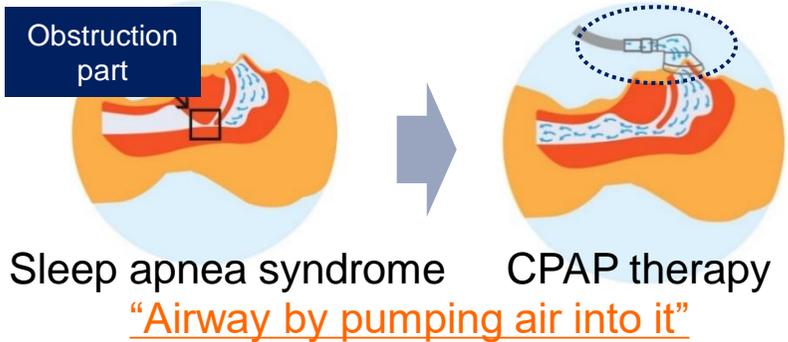




# Comfortable Sound Design for Home Medical Equipment in Consideration of Arousal Due to Synchronization of Respiratory Sound

## Background

### About CPAP



### Noise problem with CPAP



Leak port

Low noise of equipment

Mask airflow noise  
Relatively grating

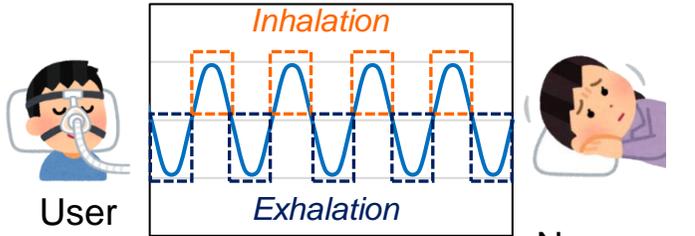


"Decreased quality of sleep"

The effect on the arousal + Frequency band extraction that sleepy sound quality  
**"Reduce discomfort caused by noise in home healthcare spaces"**

## Contents

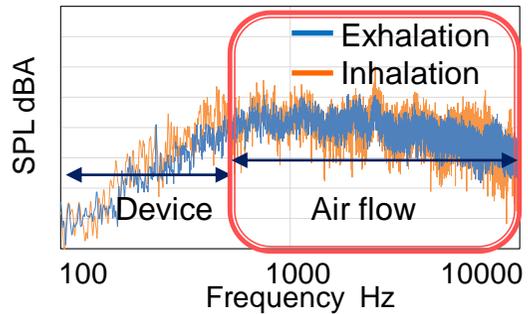
1. The relationship between respiratory synchronization and sleep



### Synchronization

The effect of respiratory synchronization on arousal

2. Focus on the quality of respiratory sound



Frequency band extraction that sleepy sound quality

3. Proposal for a pleasant sound design

- Focus on leak port
- Hole diameter change
- Filter installation

Reduce discomfort