

## **RATIO S/Z, an iOS app that's simple and complete.**

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### **Abstract:**

New iOS 10 app, RATIO S/Z, that assists in the process of voice evaluation. It's initially available in Spanish, English and Catalan. It adapts it's language to the default language of the iPhone or iPad in which it is installed. Future updates will give support to italian, French and more.

Ratio S/Z is an app designed by the speech therapist Andreu Sauca as a help to the evaluation and monitoring of patients undergoing voice rehabilitation.

**Keywords:** Ratio s/z, Expiration, Phonation, Voice

### **Resumen:**

Nueva App para iOS 10, **RATIO S/Z**, que asiste de una forma sencilla al proceso de evaluación de la voz. La versión inicial está disponible en español, catalán e inglés, adaptándose el idioma automáticamente al configurado en el iPhone o iPad en el que se instale. En próximas actualizaciones, estará disponible también en italiano, francés, y otros idiomas.

Ratio S/Z es una aplicación diseñada por el Logofoniatra Andreu Sauca como ayuda a la evaluación y seguimiento de los pacientes en rehabilitación de la voz.

**Palabras Clave:** Ratio s/z, Espiración, Fonación, Voz



Today, april 20th 2017, a new iOS 10 app sees the light, **RATIO S/Z**, compatible both with iPhones and iPads. It assists in the process of voice evaluation in an easy, but thoroughly, way. Initially it is available in Spanish, Catalan and English, adapting itself to the language set in the device it is installed. Future updates will give support to Italian, French and more.

Ratio S/Z is an app designed by the speech therapist Andreu Sauca i Balart as a tool to help in the evaluation and monitoring to the patients undergoing voice rehabilitation.

### Purpose:

The app registers the maximum expiration and phonation time and the calculation of the phonation quotient (or ratio S/Z) by using the highest of the three values in each.

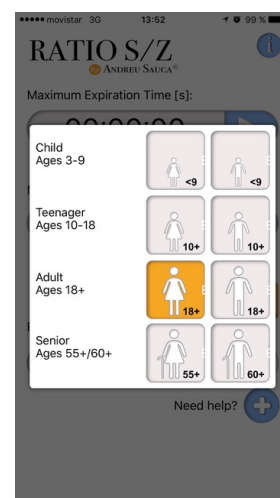


The ratio S/Z test is a crucial part in every protocol of voice exploration. There might be different professional purposes for

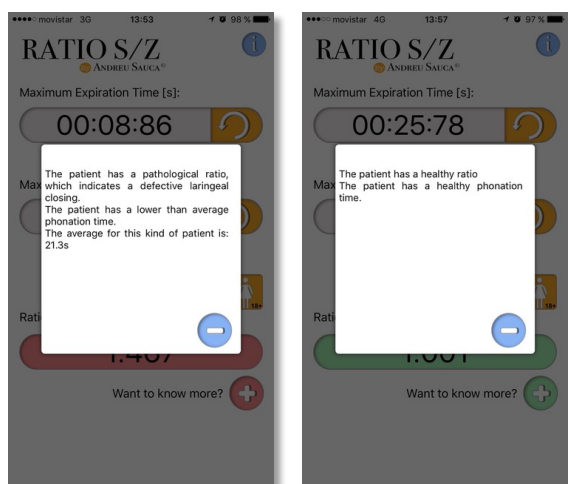
taking the test. In addition to the exploration purpose, the ratio S/Z can be used as a re-evaluation in case of being monitoring or before being discharged. In some cases, it can also be prescribed as a training for different objectives (this app can be used both by the speech therapist and by the patient) or as a screening tool to detect voice problems among some collectives such as teachers.

### Procedure:

With the aid of the chronometers integrated in the ratio S/Z, the professional registers three samples of the highest time taken in the production of the [s] and other three samples on the highest time production of the [z]. Each chronometer shows the obtained values and highlights the highest one in blue. Automatically, the app uses these values to calculate the S/Z quotient, which appears in green or in red to indicate whether it is pathological or not. The interpretation of results varies according to some parameters (age and gender) is accessible through a specific button.



As the age and gender of the patient can vary the interpretation of the results, a button allows the selection of which kind of patient is undergoing the test. This will give us not only a more accurate result, but it will also evaluate the phonation time length, this is a novelty of this app.

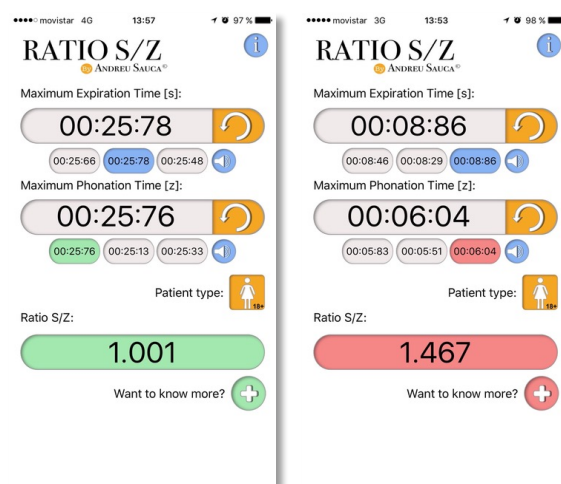


### Characteristics:

- Careful design to enable an easy access and a right understanding of the results.
- Two chronometers with three partial storing boxes each individually resettable.
- Selection of the type of patient according to age and gender.
- Resounding examples of the requested sound.
- Color code to identify the result fields and buttons.
- Start, stop and reset buttons for each chronometer.
- Informative window about the test.
- Help window to ease the interpretation of results, adapted to it.
- Languages: Spanish, Catalan and English. More soon.

### Normative values considered:

To obtain the ratio in a more trustworthy way, we take three measures of the phonation and the phonation times. The app automatically selects the highest values achieved in both items and shows the result. If we take wrongly a measure, we can cancel it by pressing its container bubble.

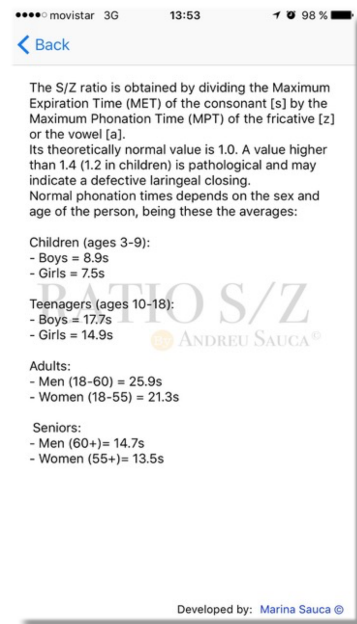


The S/Z ratio is obtained by dividing the maximum expiration time of the consonant [s] between the maximum phonation time of the fricative [z] or the vowel [a]. Due to international standardization, the app only supports measures of [s] and [z].

It's theoretically normal value is 1.0. A value higher than 1.4 (1.2 in children) is considered pathological and may indicate a defective laryngeal closing.

Normal phonation times depend of the sex and age of the person, being these the average values considered in the app:

- children (Ages 3-9):
  - Boys = 8.9s
  - Girls = 7.5s
- Teenagers (Ages 10-18):
  - Boys = 17.7s
  - Girls = 14.9s
- Adults (Ages 18+):
  - Men (18-60) = 25.9s
  - Women (18-55) = 21.3s
- Seniors:
  - Men (60+) = 14.7s
  - Women (55+) = 13.5s



## Conclusions:

Ratio S/Z is a new app for iOS (iPhone and iPad), simple and easy to use, that brings us not only the value of the ratio between the maximum expiration time and the maximum phonation time, but also its interpretation according to the age of the patient and the evaluation of the phonation times according his age and sex.



## Download and Install :

### **Ratio S/Z**

(Andreu y Marina Sauca)



[View in iTunes](#)

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