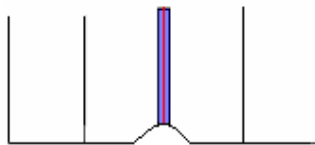




- (17) The centre top of ellipse becomes wider(higher).

The shape of ellipse changes after the meals.

Looking myself in a mirror, I changed the shape of the ellipse by a file to check the tone quality.



#### Result

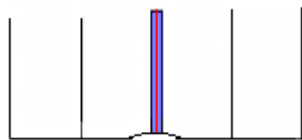
When the centre top of ellipse becomes wider(higher),the tone becomes stuffy and the good trombone sound cannot come out at the middle register.

The height and width of ellipse affects the tone quality very much.

The ideal size and shape of ellipse seems to depend on the whole disposition of mouth and teeth.

I lowered the centre top of ellipse to make a smooth shape.

Checking the sound of trombone, I scraped the teeth at both sides as if I describe a curve.



#### Result

To make a proper ellipse shape requires a subtle work as if to scrape woodwind instruments reed.

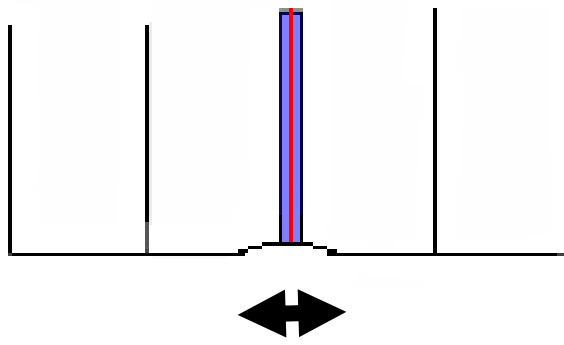
I had my teeth adjusted while playing trombone in an operation room.

When it comes to higher sounds above B sound, the adjustment is in 0.01 millimeter level.

Repeated adjustments were made until the good sound was made by chance.

Consequently, it was sporadic to make D, Es, F sounds and high-tone.





5 millimeters

5 millimeters is best for me.

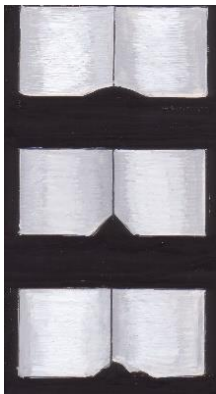


As teeth shape was affected by having meals, I did not use front teeth for nearly half a year when eating.

This may have some effect to the brain. I felt uneasy bodily condition.

I realized that the front teeth and the brain are heavily connected.

### 例 Example



Perfect shape (able to cover wide register without using much strength. good tone quality)

Common shape (can improve by practice)

Bad shape (noise inevitable. maneuvering necessary)

## Changes of the teeth shape



1992



1997



2005



2012



Sept. 2017

The shape of lips changes after teeth treatments. To bring back the old vibration, three months are necessary at least. Uneasy feeling vanishes after half a year. These length of time differ by age and practice.

Before I started to practice trombone, upper front teeth protruded a little, but after the long practice they came inward.

The picture of 2017 shows not-the-perfect pattern of the teeth as I did not care them for some years. Noise comes at G sound.

The same teeth pattern may differ by the lips movement.



As I have not looked after the teeth for some years, I cannot keep the perfect ellipse. Though, I could make a good ellipse by adjusting *embouchure*.

Next, about *aperture* and the disposition of teeth.