

# OralChroma™

## Halitosis Measuring Device

CHM-2



<http://www.fisinc.co.jp/en/products/oralchroma.html>

# Halitosis as popular problem

- Halitosis is estimated to be the third most frequent reason for people to seek dental care, following tooth decay and gum disease; and about 20% of the general population are reported to suffer from it to some degree.

From Wikipedia <https://en.wikipedia.org/wiki/Halitosis>

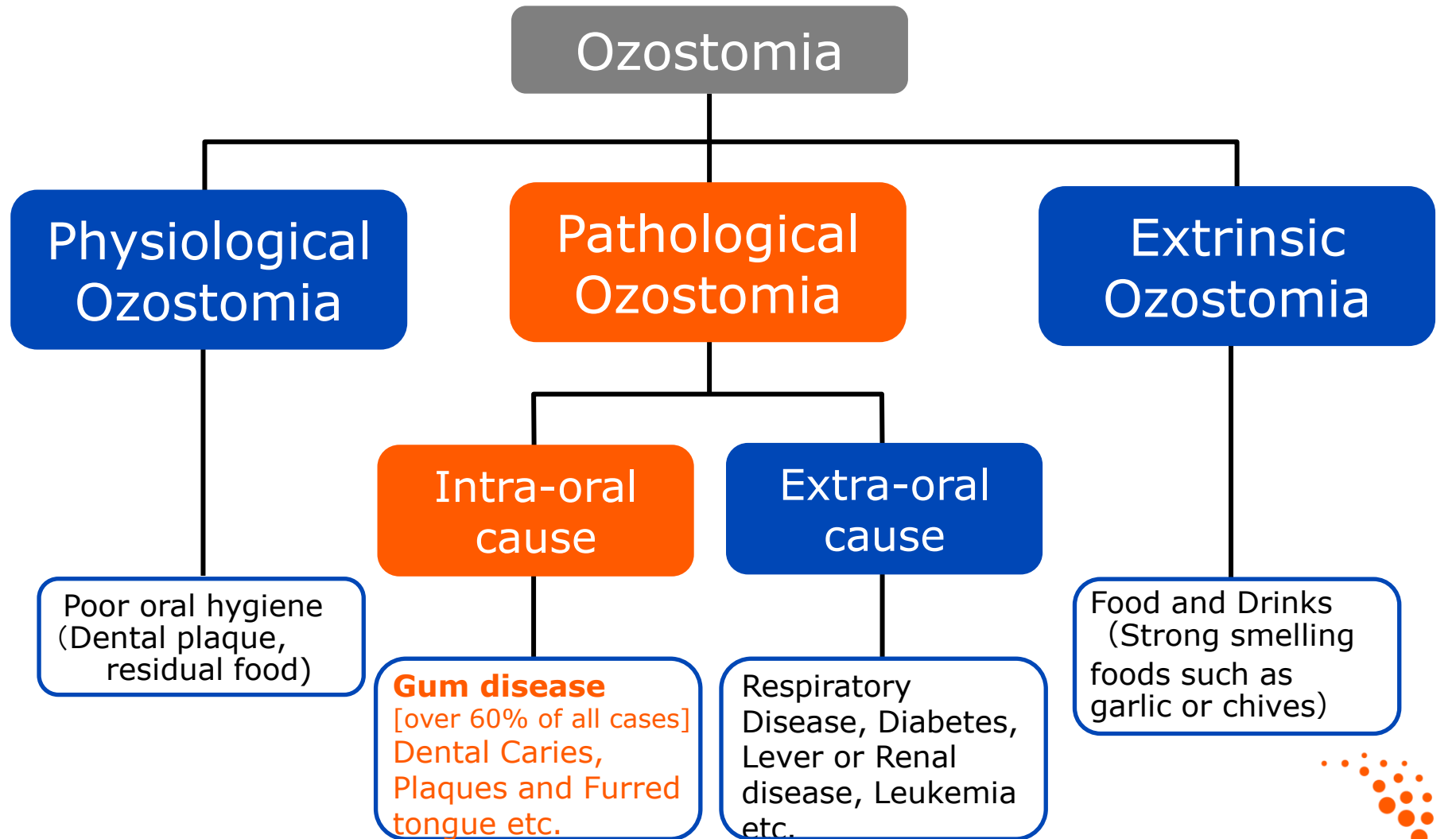
- In Brazil, approximately 30% of population (ca. 50Mil people) are suffering from bad breath.

From Associacao Brasileira de Halitose

- Also in Japan, 70% of population (ca. 84Mil people) have a problem of bad breath.

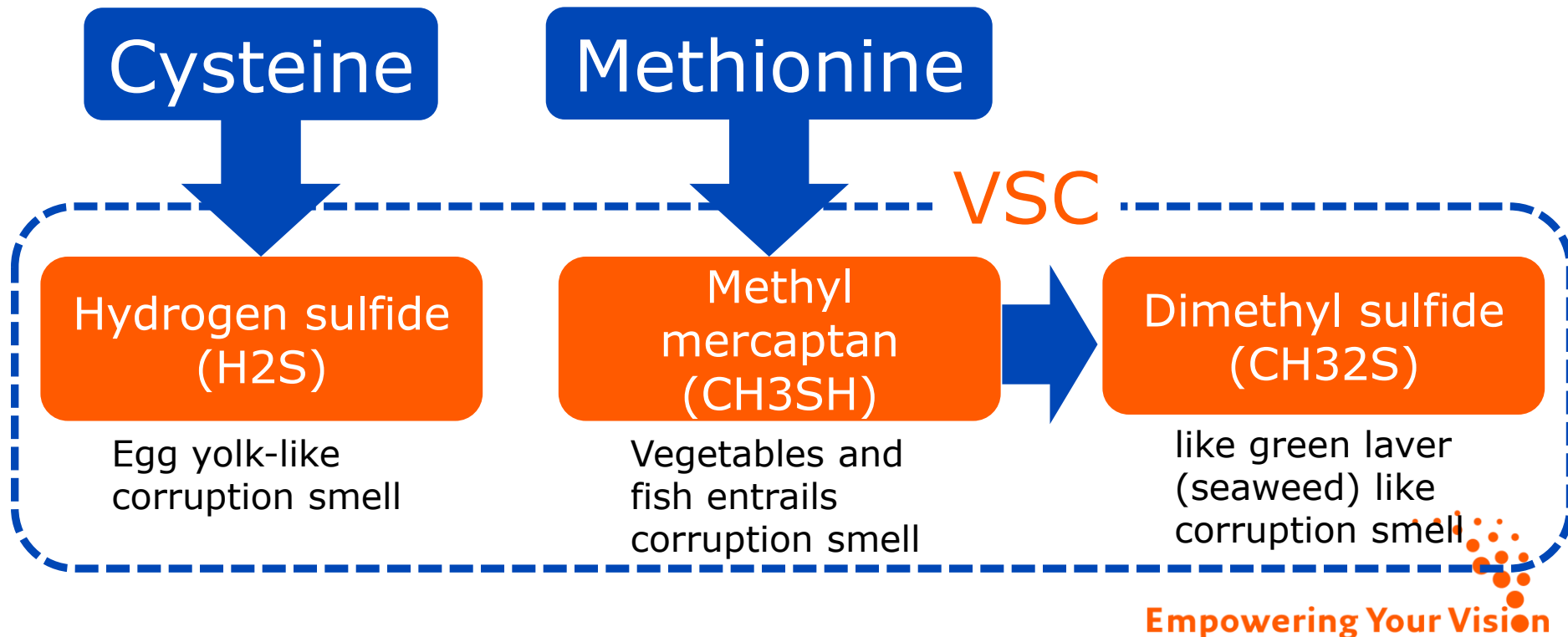
From the Japanese Academy of Malodor Syndrome

# Causes of Ozostomia (Halitosis)



# Origin of Bad Breath

**Cysteine** and **Methionine**, which are contained in Oral mucosal sloughing epithelium cell (Keratin etc. ), Protein in saliva or residual food etc, cause bad smell causative agent (**VSC = Volatile Sulfur Compounds**) metabolizing with intraorally indigenous bacterium.



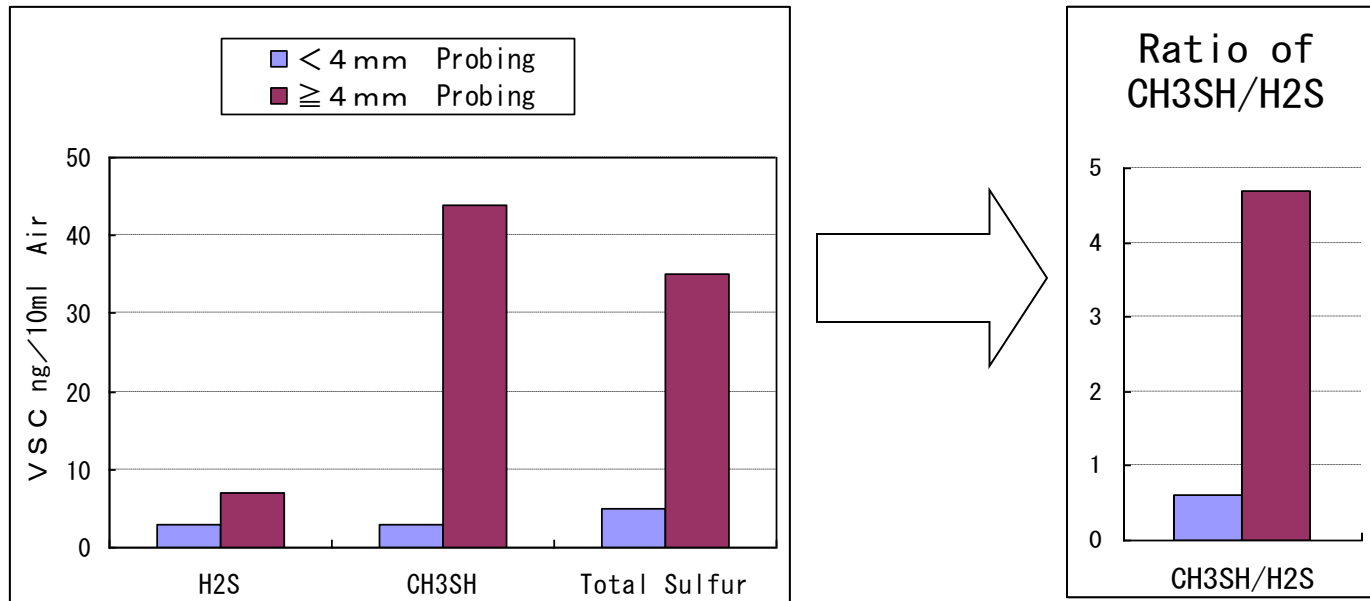
# OralChroma™ works ...

Measuring concentration of 3 component gases of VSC (Volatile Sulfur Compounds) in the breath.



# Why 3 gases?

Correlation with each of VSC gases concentration between 2 patients. One has more than 4mm of Periodontal pocket (indicating the moderate above-mentioned disease), and other has less than 4mm.



The result indicates;

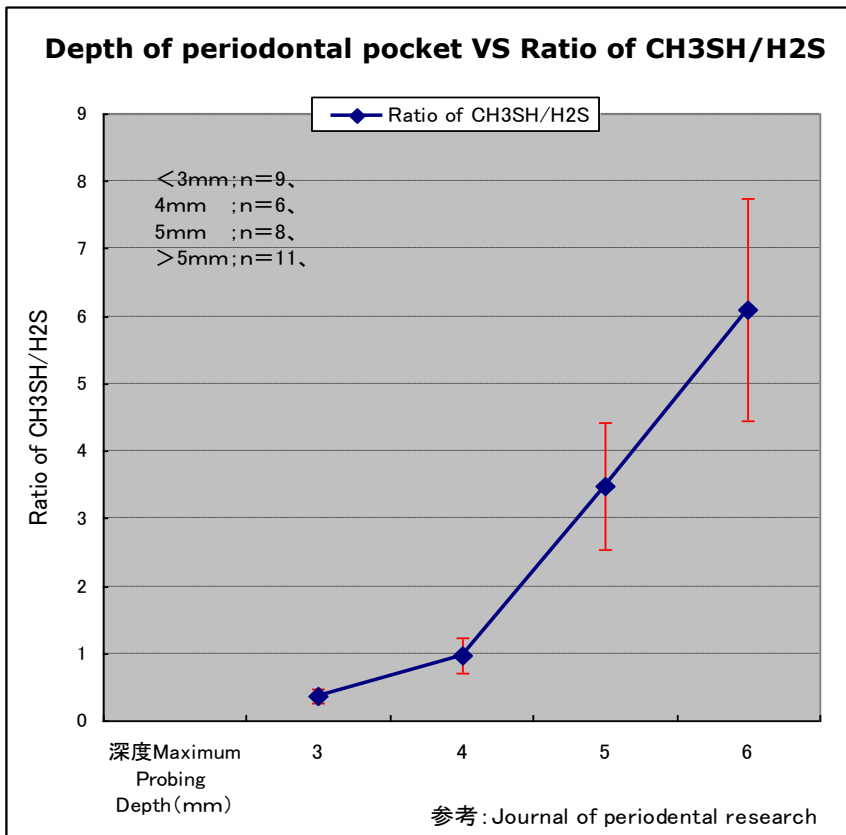
1. Concentration of Methyl mercaptan indicates higher at the patient who has more than 4mm of periodontal packet (44.0ng : 2.6ng).
2. The ratio of CH<sub>3</sub>SH/H<sub>2</sub>S indicates also higher (4.64 : 0.58)

Excerpted from the paper which reports concentration of CH<sub>3</sub>SH is the key component of periodontal disease.



# Why 3 gases?

Correlation with the depth of periodontal pocket and the ratio of CH<sub>3</sub>SH/H<sub>2</sub>S



CH<sub>3</sub>SH/H<sub>2</sub>S ratio by depth of periodontal pocket;

Less than 3mm	0.37	+/-0.10	n=9
4mm	0.96	+/-0.23	n=6
5mm	3.49	+/-1.48	n=8
More than 6mm	6.10	+/-1.71	n=11



**Result:**  
The ratio of CH<sub>3</sub>SH/H<sub>2</sub>S rises with periodontal disease severity.

Excerpted from the paper which reports concentration of CH<sub>3</sub>SH is the key component of periodontal disease.

**Empowering Your Vision**

# Why OralChroma is necessary?

1. **Sensory inspection only** is hard to get the agreement or patient by lack of objectivity.
2. **Professional Gas Chromatograph machine** is not reasonable to set up at general clinic because of;
  1. Operability
  2. Problem of the space
  3. Cost of introduction and maintenance
3. **The device which measures only total amount of VSC** is unable to identify the root cause of bad breath.





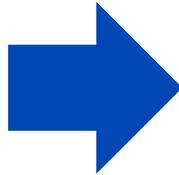
# Characteristics of OralChroma™

- Detailed analysis is available
- Simple and easy method of exhaled breath collection using a syringe
- Automatic measurement after insert of syringe
- Simple User Interface to show the breath odor level and store the history by patient



# Sampling method

Secure the syringe  
with the front teeth



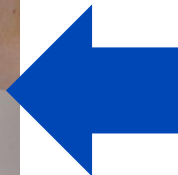
Keep the lips closed  
Collect intraoral gas breathing  
through the nose for 30 sec.



Slowly pull  
and push the  
plunger,  
pull it again  
and then  
leave from  
the mouth.



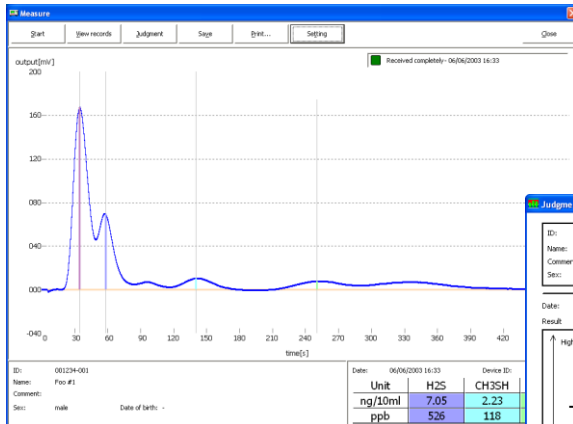
Insert it into OralChroma  
It start **measuring  
automatically**



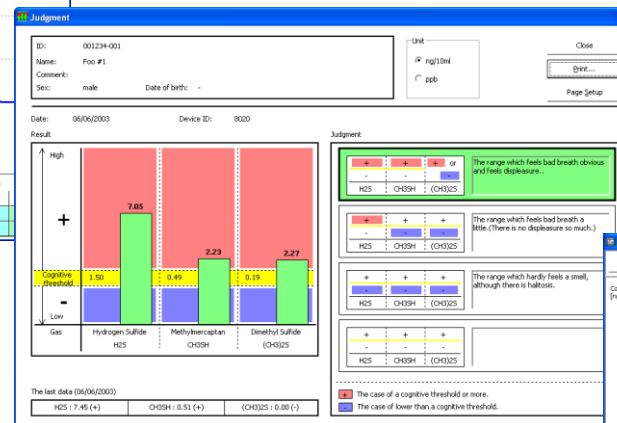
Wipe the syringe  
and  
adjust to 1.0ml



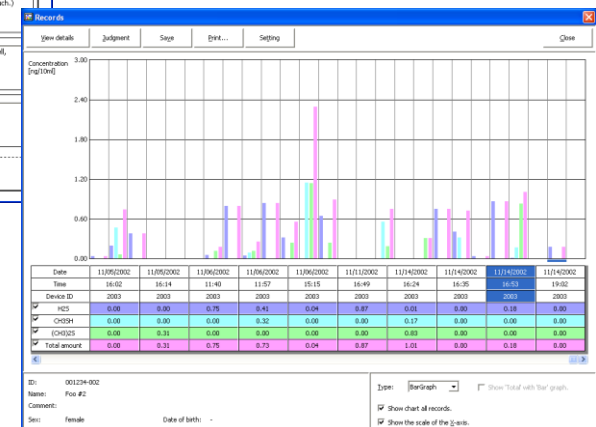
# Indications Measure



## Judgement

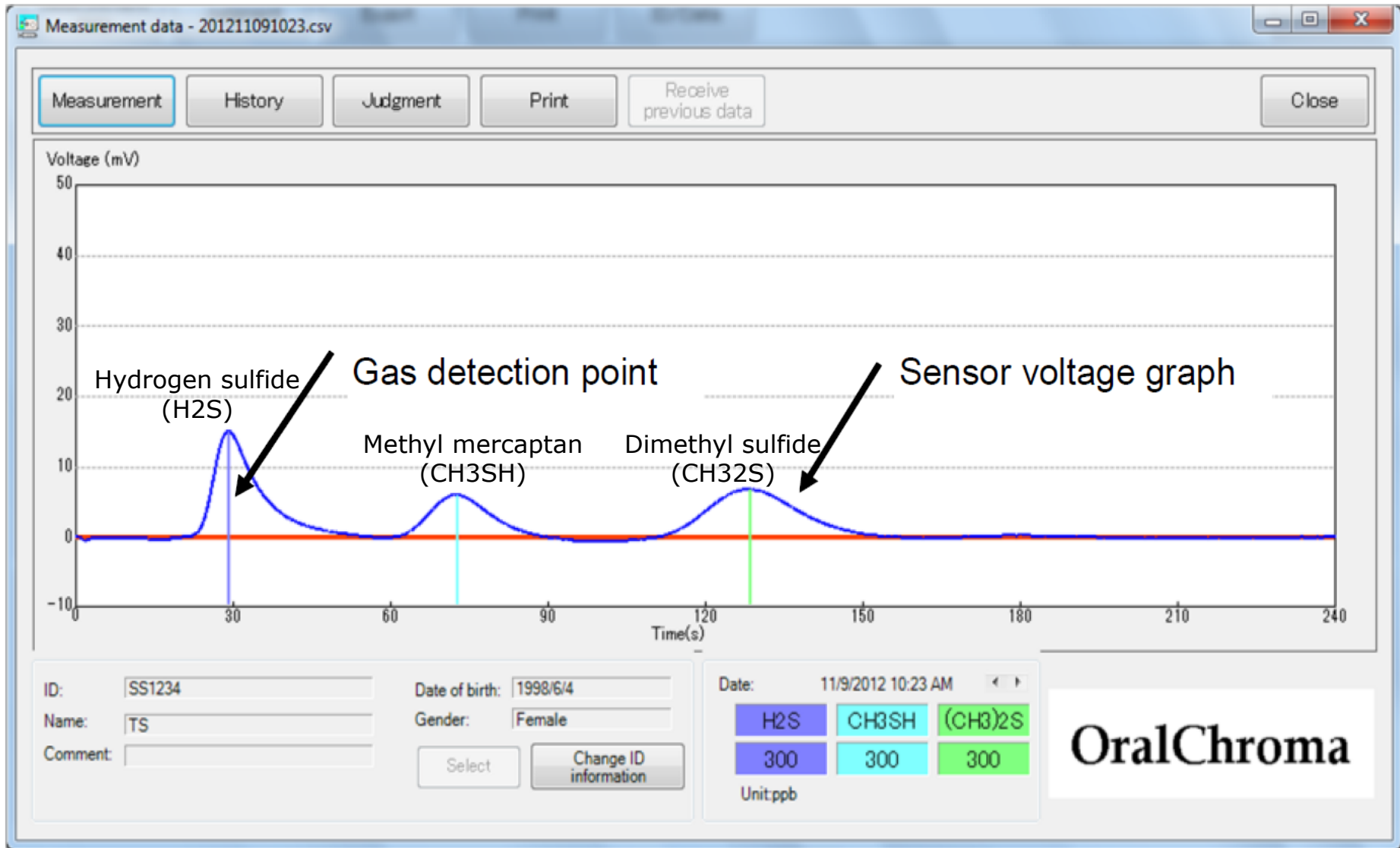


## Records of patients

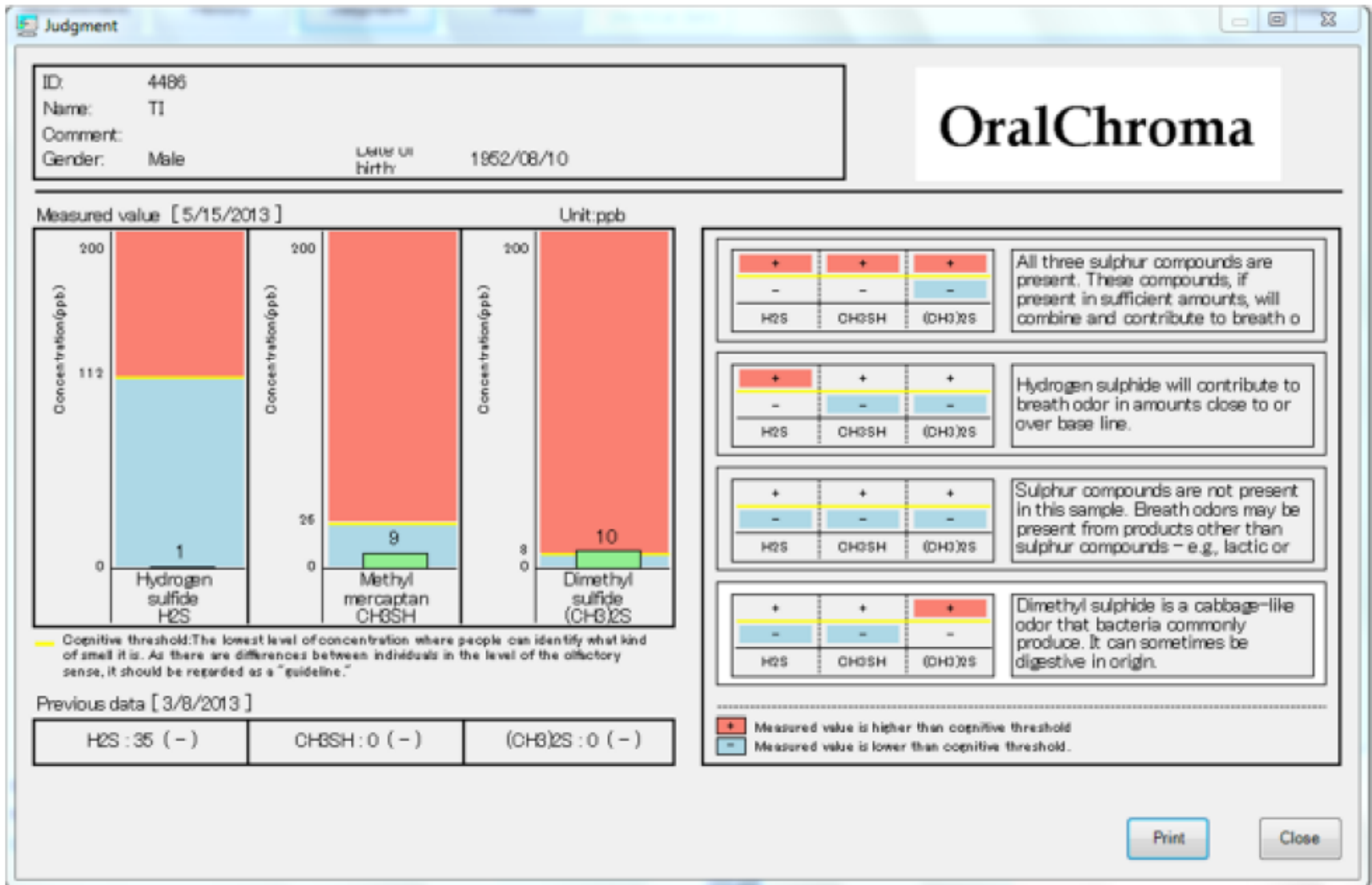


For further information, please visit  
<http://www.fisinc.co.jp/en/common/pdf/CHM-2%20Manual%20E.pdf>

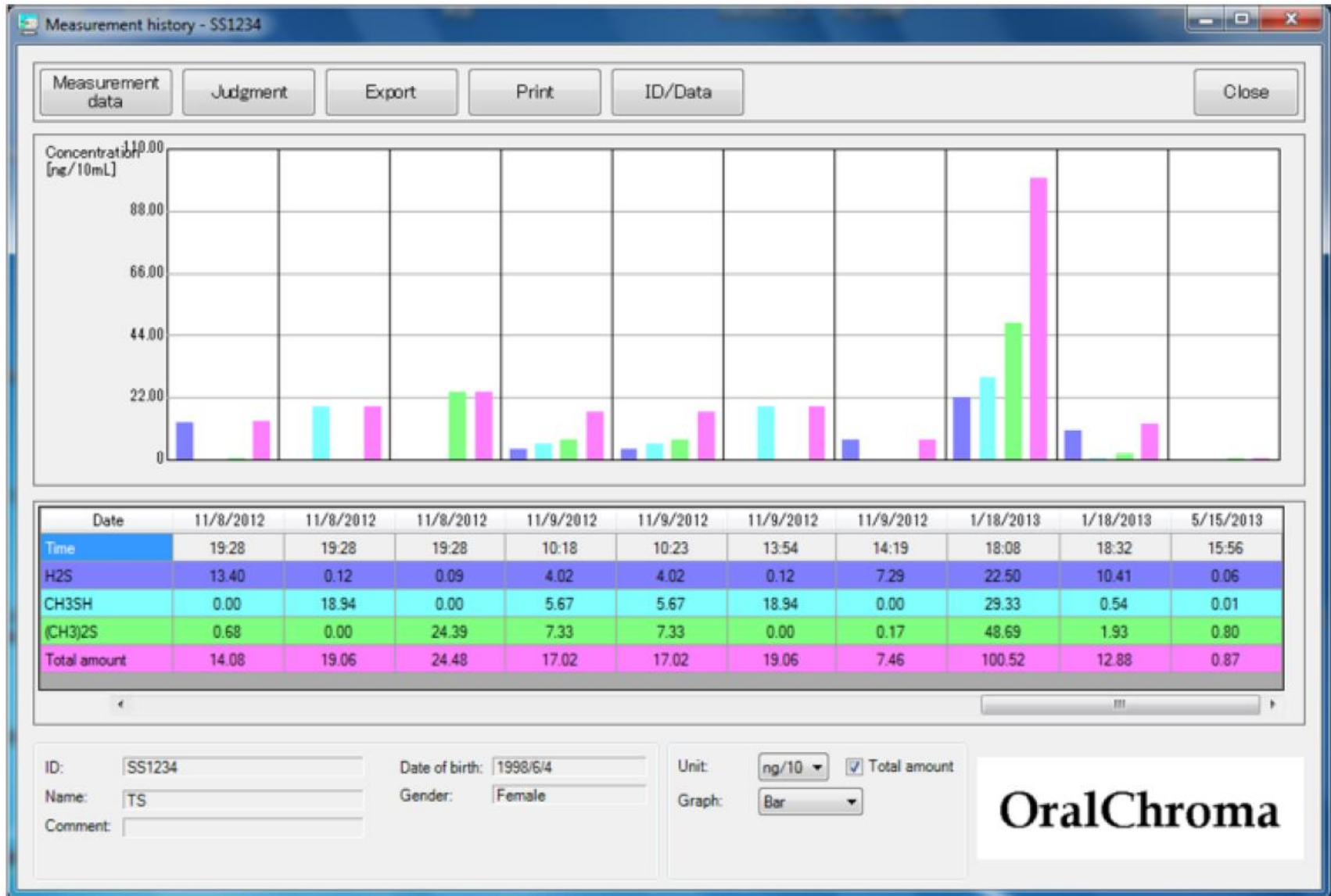
# Measurement



# Judgement



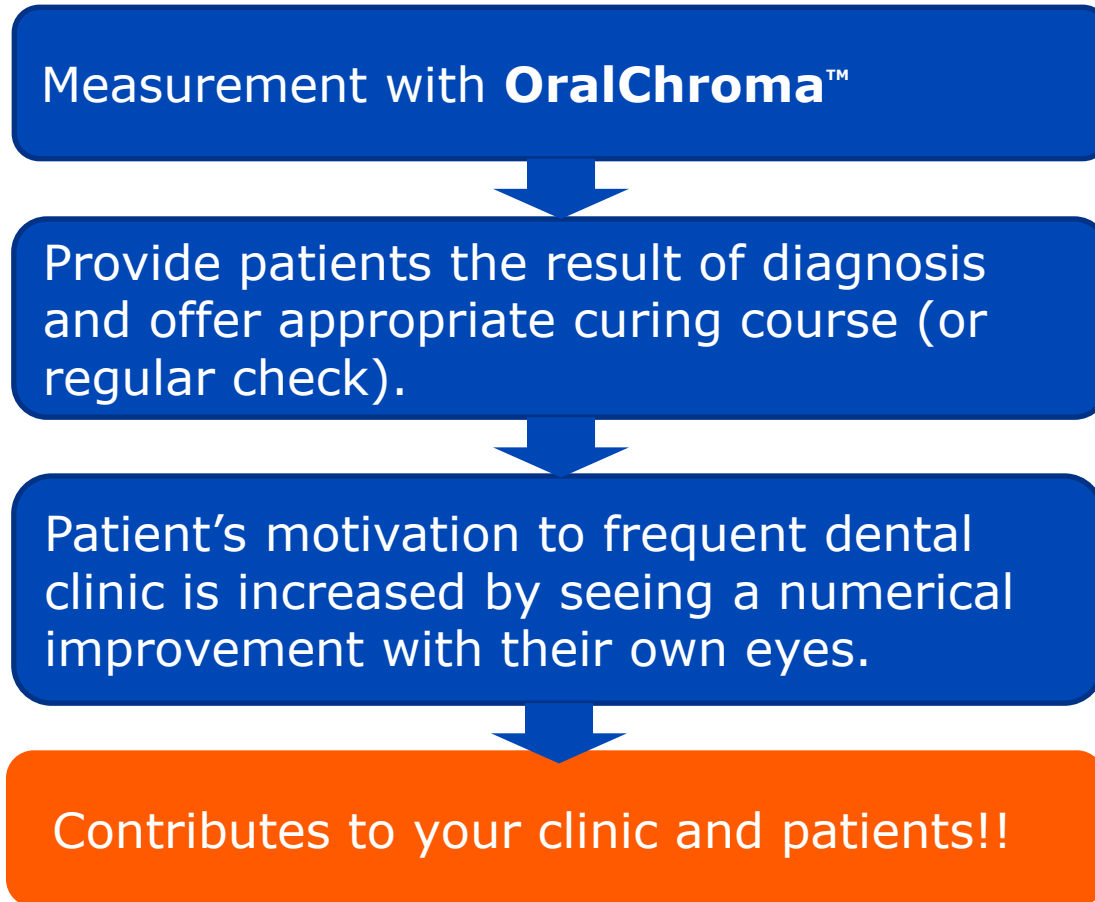
# Record of Patients



OralChroma

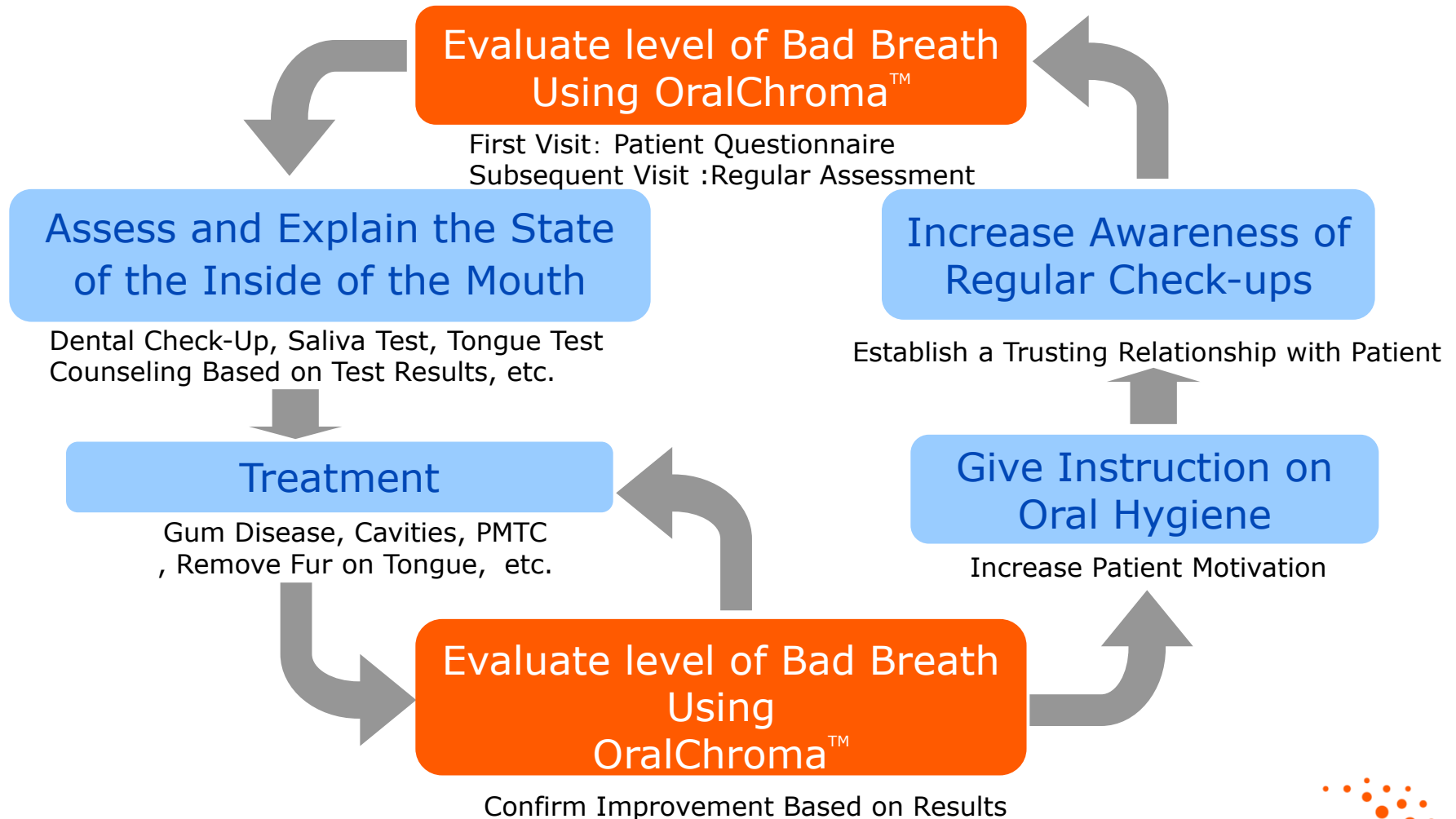
empowering real vision

# Efficacy of OralChroma



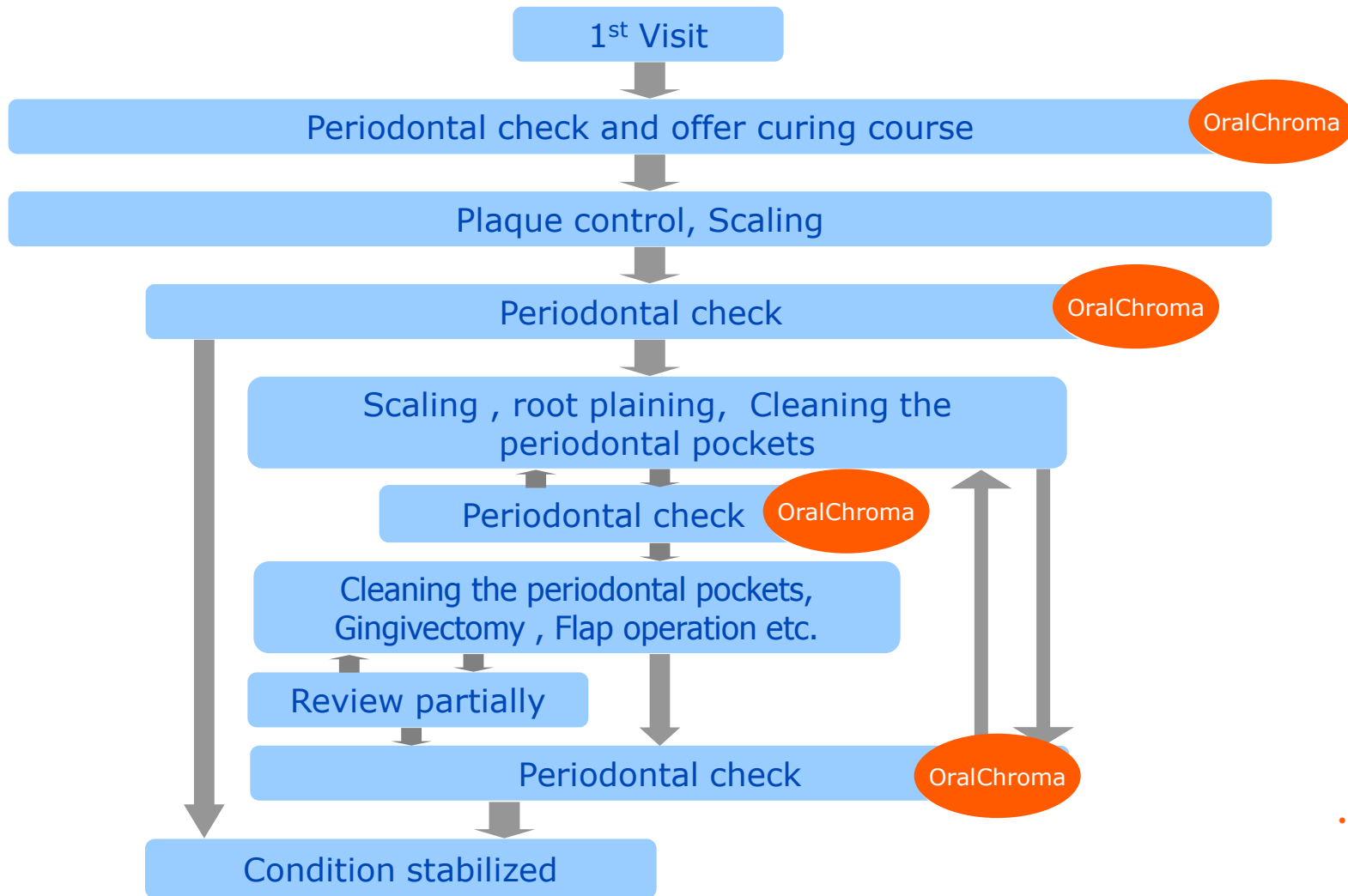
- Effective as diagnostic indicator for the root cause of breath odor, such as gum disease or furry tongue etc.
- Good for diagnosis of gum disease, referring the ratio of methyl metcaptan / Hydrogen sulfide as a diagnostic indicator

# Example of OralChroma Usage





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## Ex. Preventive dentistry program

1. Interview
2. Examination of tongue
3. Bad breath check (using OralChroma)
4. Carious check
5. Microscopic examination
6. Wisdom tooth check
7. Decayed tooth check on dental prosthesis
8. PMTC (including tongue cleaning)
9. Bad breath check (using OralChroma)

EUR 35.0-40.0/30min. By Dental Hygienist



# Patient Questionnaire (Example)

1. When did you start becoming concerned about your breath? And what made you become concerned?
2. When in the day do you feel bad breath?
3. Have you ever had treated your bad breath?
4. Does your bad breath make you annoyed?
5. Are you doing anything to improve your bad breath?
6. Is there anyone you can discuss about your bad breath with?
7. For example a friend or relative?
8. Do you Smoke, Drink alcohol or coffee etc.
9. Do you currently have any illness?
10. Are you taking any medication? If so what kind of medicine?
11. Do you brush your teeth every day?
12. Do you have a well balanced lifestyle?
13. Do your gums bleed when you brush your teeth?
14. Does your mouth often feel dry?
15. Have you ever noticed the surface of your tongue being white?
16. Did you use a mouthwash before coming here today?
17. Or, did you use any other oral hygiene products?
18. What time was your last meal?



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