

# Hormonal Fingerprint and Taste Perception

P2.17

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## Introduction

Research confirms the impact of hormones on human physical and personality traits. Can this *Hormonal Fingerprint* also explain the different sensory representations of a same taste stimulus? To what extent does the *Hormonal Fingerprint* influence a vocation? Is there a link between vocation and taste? The answer to these critical questions would help to identify, understand, and predict human perception and behavior.

**Business and Medical Applications** include:

- *Segmenting* individuals into groups based on their perception,
- Designing the *right sensory mix* for each group,
- Adapting *health prevention* plans for each group,
- Identifying and reaching individuals more exposed to *chronic food-related diseases*.

## Methodology

This research was conducted between June 2008 and June 2009 on **580 individuals from over 25 countries**, with different genders, ethnicities, ages, vocations, hobbies, and preferences.

**Measurements** performed included:

- *Hormonal Fingerprint*: Length of the index and ring fingers of the right hand, with the help of a digital Vernier Calliper
- *Sensitivity to bitterness*: Tasting of a PTC (Phenylthiocarbamide) strip

**Observations** performed included:

- *Preferences*: For food and beverages
- The poster focuses on a segment of 18 Caucasian women in their thirties— nurses, housewives and entrepreneurs.

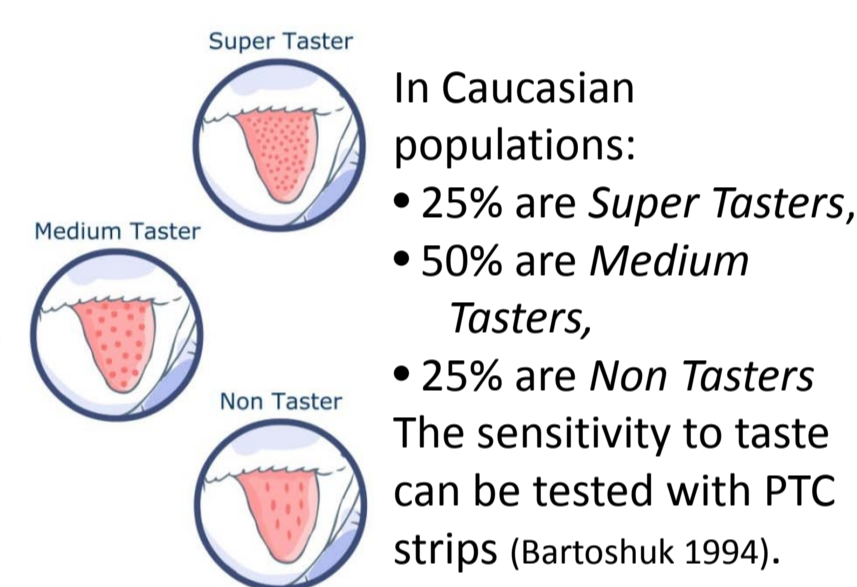
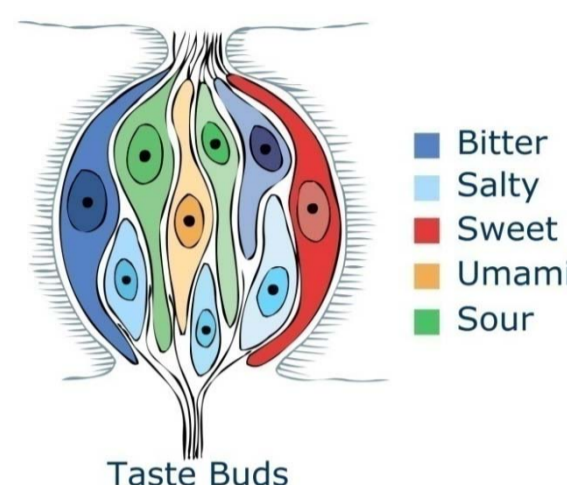
## About Hormonal Fingerprint

Sports and musical abilities, as well as other traits—including the ratio between the length of the index and ring fingers of the right hand—are set before a fetus enters its 14<sup>th</sup> week. A **shorter index** indicates a greater influence of **testosterone**; a **shorter ring finger** a greater influence of **estrogene** (Manning 2002).



## About Taste Perception

Depending on their gender, ethnicity and age, the number of taste buds individuals will host on each square centimeter of their tongue might vary between eleven [11] to eleven hundred [1,100]. Each bud helps with perceiving bitter, salty, sweet, umami, and sour taste.

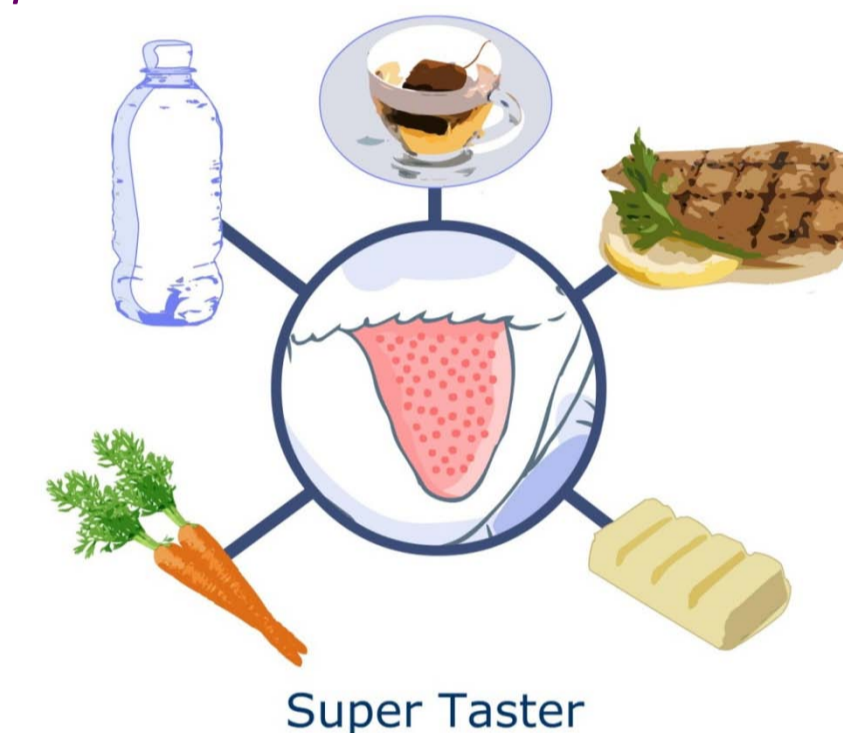


## 1 Vocation and Taste Perception

Among the 102 Caucasian women considered, 18% were revealed to be *Super Tasters*, 43% were *Medium Tasters*, and 39% were *Non Tasters*. Their vocation and hobbies appeared to be the main variable explaining how the same taste stimulus—a PTC strip—was perceived as bitter or as a simple piece of paper by the different individuals.

### Entrepreneurs are Super Tasters

Among the women entrepreneurs (n=7), 100% were *Super Tasters*. They were picky with food, avoiding bitter beverages and vegetables—or mitigating them with dairy—or too fatty or too sweet food.



### Nurses are Non Tasters

Among the nurses (n=3), 100% were *Non Tasters*. They could eat and drink almost anything—fatty and spicy meals as well as very sweet and bitter beverages.



## 2 Hormonal Fingerprint and Vocation

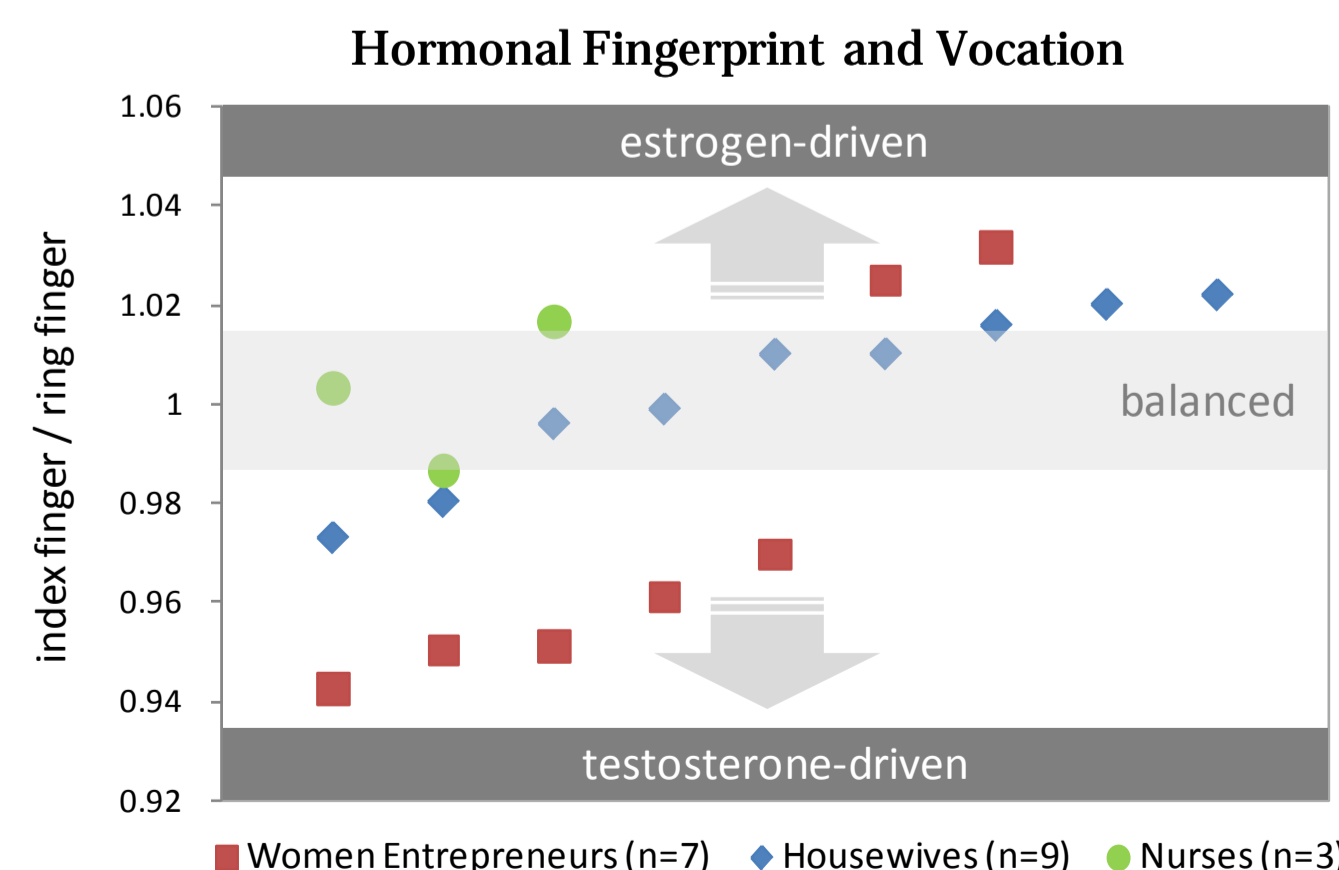
The average *Hormonal Fingerprint* among the 102 Caucasian women considered was 0.98 (length of the index finger divided by the length of the ring finger), with a minimum of 0.88 and a maximum of 1.06. Women with the same vocation presented a similar *Hormonal Fingerprint*.

### Entrepreneurs are Extreme

Women entrepreneurs were testosterone-driven, with a *Hormonal Fingerprint* in the range **[0.94, 0.97]**, or estrogen-driven with a *Hormonal Fingerprint* in the range **[1.02, 1.04]**.

### Nurses are Balanced

Nurses were balanced, with a *Hormonal Fingerprint* in the range **[0.98, 1.02]**.



## Conclusion

This research **confirms the impact of hormones on human perception of taste, and vocation**:

- Acting as a predictor, the *Hormonal Fingerprint* overrides gender, ethnicity, and age in explaining the different sensory representations of a same taste stimulus.
- The value range of the *Hormonal Fingerprint* is linked to the vocation, independent of the gender.
- Food preferences are linked to the vocation. This is explained by the fact that the vocation itself is linked to the *Hormonal Fingerprint*.

Further research:

- Individuals presenting a *Hormonal Fingerprint* testosterone or estrogen-driven seemed to have a weaker **immune system** (presence of allergies, auto-immune diseases, fertility issues) whereas individuals with a balanced *Hormonal Fingerprint* were fitter and involved in contact activities (team sports, team work).
- A link between the *Hormonal Fingerprint* and the **perception of colors, shapes, sounds, and textures** was identified.
- **Other hormones** might influence traits and perception.