



Physicians Caring for Texans

## ***TexMed 2016 Clinical Abstract***

Please complete all of the following sections:

### **Procedure and Selection Criteria**

- Submissions not directly related to quality improvement or research may be accepted and should follow the standardized format outlined below. Content should enhance knowledge in the field of clinical care and be relevant to a given patient population.

**PROJECT NAME: SALT ADDICTION IN MALE SATISFIED ATHLETE MAY BE EXPLAINED BY THE PREPARATION OF HOME-MADE FOOD LESS SALTY THAN RESTAURANT AND PROCESSED FOOD**

**Institution or Practice Name:** Wayland Baptist University

**Setting of Care:** Wayland Baptist University

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**Secondary Author:** Whitney Philips

**Other Members of Project Team:** Daniela T. B. Pereira-Derderian, Ph.D, Pharm.D.

**Is the Primary Author, Secondary Author or Member of Project Team a TMA member (required)?**

Yes  No

Please provide name(s): Sharon Robinson

**Enhanced Perioperative Recovery/Future of Surgical Care program**

## Clinical

**Background (15 points max):** *Describe the purpose for sharing the content. What caused this subject matter to be approached? Why is this content important to share? What is the potential impact if this content is not shared?*

Food addiction, in particular salt addiction, is a field of research that has received more attention within the past six years. The purpose of sharing this research accomplishment is to bring awareness over human food addiction towards salty foods. Salt addiction has been a neglected topic of research because it does not manifest clinical signs and symptoms by itself; instead, it is associated with disorders of the cardiovascular, gastrointestinal, and renal systems rather than central nervous system. Thus, its importance relays towards understanding the behavioral neuroscience behind long-term changes on sodium sensitization.

**Intended Stakeholders (15 points max):** *Identify those individuals, organizations, or interest groups that could be potentially impacted by this information or benefit by obtaining this information.*

Craving for salt is observed in humans that underwent to repeated episodes of extracellular fluid deprivation such as in females with repeated pregnancies, Bedouins from Israel, and military soldiers. Thus, humans subjected to repeated episodes of sodium depletion (exercise, especially under high temperature; vomiting; diarrhea) or facing homeostatic imbalances (bulimic, anorexic, SIADH, Prader-Willi syndrome, and etc...) would benefit from the awareness of controlling salt addiction and thus, preventing 46.4 billions of dollars in direct and indirect costs of salt addition-induced hypertension, which in turn is a high risk factor for atherosclerosis, coronary artery disease, stroke, and vascular dementia.

**Description of Accomplished Work (25 points max):** *Provide an overview of the work that was accomplished, including any specific methods, tools or techniques. Also, include any milestones or key accomplishments. Note charts, graphs and tables here and send as addendum with abstract form.*

The major impact of our research achievement is that salt addiction is gender specific in satisfied athletes: males displays sign of salt addiction while the female athlete avoids salty foods. The WBU female and male athlete displays similar exercise frequency, subjective sweat degree loss and avoid dehydrating beverages (caffeine and alcohol). However, preparation of home-made food saltier than restaurant processed food may explain avoidance of salty food by female satisfied athletes while lack of proper sodium retention may explain salt addiction in male satisfied athletes.

**Timeframe and Budget (20 points max):** *Provide the start and end dates for the work along with any financial implications that were incurred due to the work accomplished. Note charts, graphs and tables here and send as addendum with abstract form.*

Food survey started in the fall of 2103 and ended in the spring of 2015. There was no financial implications incurred due to the work accomplished.

**Intended Use (25 points max):** *Describe how this information could be used moving forward to impact patient care.*

Male athletes should be vigilant of their ingestion of salty foods to prevent future cardiovascular problems.

### **SALT ADDICTION IN MALE SATISFIED ATHLETE MAY BE EXPLAINED BY THE PREPARATION OF HOME-MADE FOOD LESS SALTY THAN RESTAURANT AND PROCESSED FOOD**

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Previous results from our laboratory showed that female satisfied and hungry athlete avoided salty foods, male satisfied athlete preferred salty foods, and male hungry athlete craved foods rich in polysaccharide, protein, and vitamin C compared to non-athlete. Therefore, salt addiction is gender specific in college students from Wayland Baptist University (WBU): male satisfied athlete displays signs of salt addiction while female satisfied athlete avoids salty foods. However, further analysis of a completed food survey was conducted to investigate dehydration level of WBU athletes versus non-athletes.

Four hundred and sixty four food surveys from healthy college student volunteers were evaluated. Exercise frequency; subjective sweat degree; alcohol and caffeine consumption; enjoyment of fat, sugar, and salt in the food; salt addition to meal before or after tasting it; perceived saltiness of home-made food versus restaurant and processed food; and top five food usually consumed when starving were analyzed.

Female satisfied [n=38] and hungry [n=34] athletes exercise and sweat more than non-athlete counterparts [n=104 for satisfied and n=49 for hungry]. Female satisfied and hungry athletes consume less caffeine than non-athlete within same gender and satiety level. Females in general (satisfied or hungry and athlete or non-athlete) display similar pattern of alcohol consumption; enjoyment of fat, sugar, and salt in food; and addition of table salt before or after tasting a meal. Female satisfied athlete perceives their home-made food saltier than restaurant and processed food compared to non-athlete matching part. However, female hungry athlete and non-athlete do not see any difference in the saltiness of home-made food versus restaurant and processed food.

Male satisfied [n=69] and hungry [n=80] athletes exercise and sweat more than non-athlete counterparts [n=49 for satisfied and n=41 for hungry]. Male satisfied athlete drinks less alcohol but the amount and type of alcoholic drinks intake is similar to non-athlete matching part. Male hungry athlete displays similar patterns of alcohol consumption than non-athlete counterpart. Male satisfied and hungry athletes drink less caffeine than non-athletes matching parts. Male satisfied and hungry athletes display similar enjoyment of fat, sugar, and salt in food; addition of table salt before or after tasting a meal; and perceived saltiness of home-made food versus restaurant and processed food.

In conclusion, female and male satisfied athletes display similar exercise frequency, subjective sweat degree loss, and avoid dehydrating beverages (caffeine and alcohol). However, preparation of home-made food saltier than restaurant processed food may explain avoidance of salty foods by female satisfied athletes while lack of proper sodium repletion at home may explain salt addiction in male satisfied athletes.