



# Increase of Body Temperature after Correction of the Glosso-Larynx (CGL) and Expansion of the Vestibular Oris (EVO)

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## Abstract

Temperatures by armpit and by nasal cavity were compared before and one month after CGL and EVO for 114 adults. An electron thermometer was employed for measure armpit temperature. Rectum probe of a bedside monitor was employed for measure the nasal cavity temperature. Armpit and nasal cavity temperatures before and one month after CGL and EVO were 36.5 °C, 36.5 °C and 33.7 °C, 34.2 °C respectively. Although there was no statistical difference observed in the armpit, significant statistical difference observed in those of nasal cavity. The causes of increase of nasal cavity temperature suggested that the inner body temperature increases after surgeries. Mitochondria regulate fundal activities for keeping life. The more metabolize of ATP, the more organism has endurance for stresses. It was concluded that they who received CGL and EVO might be stronger for the stresses.

**Keywords:** Mitochondria; ATP; Stress; Immunity; Body temperature; Ankyloglossia with deviation of the epiglottis and larynx (ATP)

## Introduction

Correction of the Epiglottis and Larynx (CGL) and Expansion of Vestibular Oris (EVO) have been done for whom complained symptoms and signs of Ankyloglossia with Deviation of the Epiglottis and Larynx (ADEL) Just after both surgeries skins of newborn babies changed pink and humid from pale and dry skins. Their extremities changed warmer. In adults they said their body changed warmer [1-15]. Armpit temperatures were measured both babies and adults but significant differences did not observe before and after both surgeries. Outer and inner body temperatures were compared in this study. Armpit was employed for outer temperature and nasal cavity was employed for inner body temperature. Temperature of both places were measured before and one month after CGL and EVO.

Although no significant difference observed in armpit temperatures but that of the nasal cavity was increased after both surgeries with significant differences. This study was done with the consent of the subjects after a full explanation of the aim of the research was provided.

## Subjects

Studied were 114 subjects (57 females and 57 males) with age distribution from 14 years to 72 years (average 43 years, SD; 13.4 years; females, 41 years; males, 45 years). They received CGL and EVO because of complaints related to symptoms and signs of ADEL between from September 24, 2015 to July 21, 2017.

## Materials and Methods

An electron thermometer “Thermo Wakishita ET-C202” was employed for measure armpit temperature. “Dynascope bedside monitor DSL-80011R” was employed for measure the nasal cavity temperature. This bedside monitor records heart rates, pulse oximeter, blood pressure, respirations and body temperature. Nasal temperatures were measured by rectum probe that inserted 5 cm into the nasal cavity. The probe was fixed by the adhesive tape under the nostril. Five minutes after the insertion of the probe, measurement started. Intranasal temperatures were measured in 5 minutes. The temperatures were recorded 10 times in 5 minutes. The median temperature was employed as the subject nasal temperature. Both temperatures were measured before and one month after surgeries. The results of female and male were unified.

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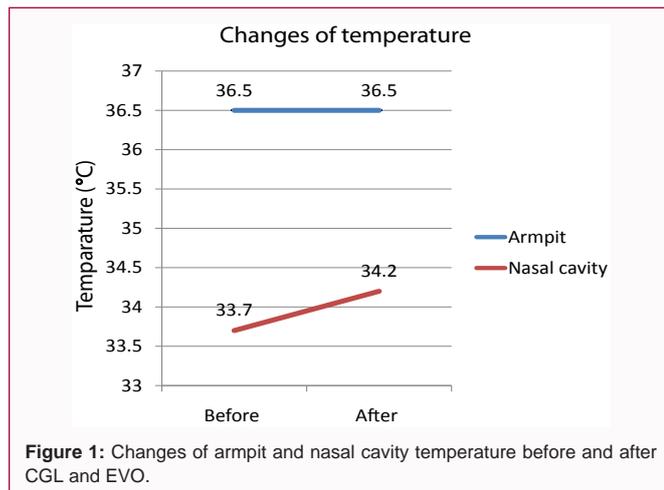
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**Figure 1:** Changes of armpit and nasal cavity temperature before and after CGL and EVO.

Microsoft Excel for Mac 2011 v.14.7.1 was used for statistical analysis.

## Results

Average armpit body temperature before and after CGL and EVO were 36.5 °C (SD: 0.39 °C), 36 °C (SD: 0.36 °C), respectively. No statistical differences were observed between two (Figure 1, blue).

Nasal temperature before and after CGL and EVO were 33.7 °C (SD: 0.36 °C, 34.2 °C (SD: 0.84 °C), respectively. Strong statistical difference was observed between two ( $p < 0.0004$ ).

## Discussion

There exists an organ in the neck that controls respiration and swallowing. It was named Hyoid Bone Complex (HBC). It sorts air to airway and food to alimentary passage strictly. HBC consist with from the hyoid bone to the thyro-cricoid cartilage [16]. CGL is cut the several bundles of the genioglossus muscles and correct the position of the hyoid born from up and forward position to down and ventral place. Not only increase of respiratory rates, Vital Capacity (VC), and forced expiratory volume in one second (FEV 1.0%) were observed but also expansions of the hypopharynx, the trachea were observed after CGL. Symptoms and signs by ADEL were ameliorated too [11,17]. The HBC moved down in half block of one vertebra as well as the hypo pharynx opened wider after CGL in 116 cases. At the top of HBC the tongue occupies not a little area in a hyoid bone. This condition pulls up the HBC upwards and inhibits respiration. Upper strength to HBC inhibits HBC respiration and lower strength to it increases respiration.

The Expansion of the Vestibular Oris (EVO) widens the nasal cavities. Decrease of nasal air resistances and increase of nasal airflow were observed by EVO. The most important role of nasal cavities is thought cooling of the brain [8,12,18]. There was no difference in average armpit temperature between before and after CGL and EVO. On the contrary nasal temperature was 33.7 °C and 34.2 °C respectively. Strong statistical difference was observed between two. The results suggested that inner body temperature rose after surgeries.

The results imply also that the metabolism increased after CGL and EVO. Although body temperature rose there was no difference in armpit temperature between before and after the surgeries suggests that the sweating from the skin decreased skin temperature after the surgeries. Post-operative changes after CGL and EVO are increases

of respiratory activities. Rises of body temperature after surgeries show increases of respiratory activities. Increase of body temperature means activities of ATP rose in the mitochondria of the body cells. Mitochondria charge the fundamental metabolism of the life (Lane N, 2005 #5427; Lane N; Lane N, 2015 #5375; Lane N, 2015 #5428). It is already known that conditions with raised body temperature are stronger against for the infectious diseases and for cancer [19]. Temperature of subjects that received CGL and EVO were higher after the surgeries. These suggest that they resist more against stresses by increased activities of ATP.

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