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EYE COLOR AFFINITY TO BLOOD OXYGEN LEVEL

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ABSTRACT

The oxygen level of the blood is determined by the amount of oxygen carried by the red blood cells which is regulated continuously by our body through aerobic respiration and breathing because an appropriate maintenance of saturation of blood oxygen is essential for health. Oxygen saturation means the amount of oxygen bound to hemoglobin out of total amount of hemoglobin present in the blood. Usually there is no need to check the blood oxygen level on daily basis but people suffering from major health disorders must check it regularly because it can be helpful in estimating that either the treatments are effective or not. Eye color is a total inherited characteristic. Mostly European infants have a very light of their iris. When child grows, melanocytes produce the pigment melanin which is responsible for the iris color to become dark. This study was objected in order to figure out any association between color of human eyes and their level of oxygen in blood. The blood oxygen level of all was measured with the help of a device called oximeter. A pulse oximeter helps measuring the level of oxygen in blood via infrared radiations being projected into the blood capillaries through finger, earlobe or even via toe. The reading for all was noted and analyzed further. Non- significant values of T. Test indicate no association between eye color and blood oxygen level.

Key words: *blood oxygen level; eye color; pulse oximeter; T.Test*

INTRODUCTION

The oxygen level of the blood is determined by the amount of oxygen carried by the red blood cells which is regulated continuously by our body through aerobic respiration and breathing because an appropriate maintenance of saturation of blood oxygen is essential for health. Oxygen is gathered in the lungs through metabolism of respiratory system, red blood cells and hemoglobin and is distributed throughout the body via oxygenation of blood. Oxygen saturation means the amount of oxygen bound to hemoglobin out of total amount of hemoglobin present in the blood. Oxygen demand in the body varies according to conditions like during exercise, more oxygen is needed. People living at higher altitudes have more amount of red blood cells in their body because their body require more oxygen as compared to people living on lower altitudes. Usually there is no need to check the blood oxygen level on daily basis but people suffering from major health disorders must check it regularly because it can be helpful in estimating that either the treatments are effective or not. 95 to 100 percent is the normal blood oxygen saturation according to physicians. Below 90 percent indicates hypoxemia. Oxygen level below 80% is considered extremely lethal and it may be a sign of respiratory and cardiac illness. It can be treated by oxygen therapy which raises the oxygen in blood by oxygenation means by adding the oxygen molecules in body tissues. Mostly deoxygenation of hemoglobin

occurs when partial pressure of oxygen is low in the blood. In blood gas analysis, the amount of oxygen and carbon dioxide present in blood because we breath in oxygen and exhale carbon dioxide during respiration. An imbalance between the amount of these gases in blood is an indication about the improper working of the lungs. In addition, this test also measures the ph. i.e. acidic or basic conditions of the blood. The test includes checking the contents of oxygen and carbon dioxide and their partial pressures along with Ph.

It is a perception about color of eyes that it changes with age. Eye color is a total inherited characteristic. However, there is a little reason behind this perception. Mostly European infants have a very light of their iris. When child grows, melanocytes produce the pigment melanin which is responsible for the iris color to become dark. Because melanin is continuously produced, eye color changes. Color of eye usually gets stable by the age of 3 to 6 months.

This study was objected in order to figure out any association between color of human eyes and their level of oxygen in blood.

Material and methods

Measurement of peripheral oxygen saturation in blood:

The subjects were asked first if they are willing to be questioned for this study, then they were asked about their eye color first and it was noted for each.

The blood oxygen level of all was measured with the help of a device called oximeter. A pulse oximeter helps measuring the level of oxygen in blood via infrared radiations being projected into the blood capillaries through finger, earlobe or even via toe. The amount of radiations being reflected by the blood gases is measured. A reading on the oximeter tells about the saturation of gases of the blood. This is an easy and effective method for measuring the blood oxygen level and is preferred often. The reading for all was noted and analyzed further.

Project designing

Total participants for this study were 242. The subjects were pupil studying at Bahauddin Zakariya university Multan, Pakistan.

Statistical analysis

M stat and T. Test were performed with the use of MS excel. p value should be less than 0.05 as it is considered significant.

Results and discussion

The linkage between color of iris and blood oxygen level is described in the given table. With the help of this study, it was estimated that males with black eye color have blood oxygen level with arithmetic mean of 97.63 ± 1.89 and females with black eye color have oxygen level with mean of 96.78 ± 3.03 . 96.92 ± 2.88 was the average oxygen level of all persons with black eye color. No male with grey eye color appeared in the study. 100.35 ± 4.35 was the arithmetic mean of blood oxygen level of all females with grey eye color. Males with brown eye color appeared to have the oxygen level 98.71 ± 0.75 while females with brown eye color had oxygen saturation of 95.63 ± 4.25 with 95.78 ± 4.20 of total and p-value of 7.66. As no p-value of the table is less than 0.05, the results are non-significant, indicating no relation between eye color and blood oxygen level. The p-value for black and grey eye color, when compared was 0.74 and that of grey and brown eye color was 0.93 and that of black and brown was 0.85, all greater than 0.05 signifying about no relation between eye color and blood oxygen level.

Table 1: linkage of normal blood oxygen level (mean \pm SD) with eye color

GENDER	Male	female	Total	p-value
Black eye color	97.63 ± 1.89	96.78 ± 3.03	96.92 ± 2.88	0.12
Grey eye color		100.35 ± 4.35	100.35 ± 4.35	
Brown eye color	98.71 ± 0.75	95.63 ± 4.25	95.78 ± 4.20	7.66

Table 2: p-values for different eye colors (when compared)

	Black and grey eye color	Grey and brown eye color	Black and brown eye color
p-value	0.74	0.93	0.85

Conclusion

Non- significant values of T.Test indicate no association between eye color and blood oxygen level.

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