

Blood Oxygen Level Plays Vital Role in Regulating Skin Texture

Muhammad Imran Qadir and Hira Raheem Akbar*

Institute of Molecular Biology and Biotechnology, Bahauddin Zakariya University, Multan, Pakistan

***Corresponding author:**

Hira Raheem Akbar, Institute of Molecular Biology and Biotechnology, Bahauddin Zakariya University, Multan, Pakistan, E-mail: hiraraheem68@gmail.com

Submitted: 12 Feb 2019; Accepted: 20 Feb 2019; Published: 01 Mar 2019

Abstract

The objective of present study was the assessment of role played by blood oxygen level in skin type. The basic purpose of my project was to investigate relation between blood oxygen level and skin texture. Blood oxygen level can also be termed as Peripheral oxygen saturation (SpO₂) or Oxygen Saturation Level. Peripheral Oxygen saturation is defined as the proportion of oxygen-concentrated hemoglobin corresponds to the total hemoglobin (concentrated + non-concentrated) in the blood. The human body needs and maintains a very proportionate and peculiar balance of oxygen in the blood. 95–100 percent is considered as normal blood oxygen levels in humans Hypoxemia is a condition which occurs when blood oxygen level becomes less than 90 percent. Skin type also known as skin texture, refers to the surface of skin which is either regular or irregular. There are many significant types of skin. Dry skin texture appears to be rough but smooth. Oily skin type is shiny. Normal skin type is healthy and fresh skin and it appears to be very consistent. It was found from results that blood oxygen level plays an important role in determining the skin texture of body. It has become clear that when need of tissues is fulfilled by oxygen, there will be no pigmentation and skin will be fresh, young and healthy.

Keywords: Blood Oxygen Level, Peripheral Oxygen Saturation

Introduction

Blood oxygen level can also be termed as Peripheral oxygen saturation (SpO₂) or Oxygen Saturation Level. Peripheral Oxygen saturation is defined as the proportion of oxygen-concentrated hemoglobin corresponds to the total hemoglobin (concentrated + non-concentrated) in the blood. The human body needs and maintains a very proportionate and peculiar balance of oxygen in the blood. 95–100 percent is considered as normal blood oxygen levels in humans Hypoxemia is a condition which occurs when blood oxygen level becomes less than 90 percent. Symptoms of hypoxemia include reduced heartbeat of breathing problem. Less than 80 percent blood oxygen levels may damage the organ function, such as the brain and heart. Cardiac and respiratory disorders are caused by low blood oxygen levels. Oxygen therapy may be used to aid in elevating blood oxygen levels. Oxygenation is necessary for increasing blood oxygen levels in case of hypoxemia condition. For instance, the oxygenation of blood is done in the lungs, where oxygen molecules enter from air penetrates and into the blood. Oxygenation usually refers to maintain blood oxygen level within its normal range that falls between 80 to 100mm Hg. Blood oxygen level is referred to as how much quantity of oxygen is being taken up by red blood cells.

Skin type also known as skin texture, refers to the surface of skin which is either regular or irregular. There are many significant types of skin. Skin texture changes from person to person. Some have normal skin texture and others have oily. Some have dry skin and others have combination skin type. Dry skin texture appears to be rough but smooth. Persons with dry skin don't have pimples. Oily skin type is shiny. Individual with oily skin texture has to face many skin problems like pimples and blackheads and whiteheads on face. Pores of skin are open and dust particles can easily be trapped. Normal skin type is healthy and fresh skin and it appears to be very consistent. It appears to be very uniform. Combination skin type is a combination of dry and oily skin texture. Healthy skin has a uniform skin texture and looks fresh and young. Unhealthy skin has non-uniform skin texture. Some have wrinkles and scars on their faces which is a texture concerning problem.

The significant topic of this project is to study relationship between normal blood oxygen level and skin type. The major concern is how normal blood oxygen level influence human's skin texture.

Objective

The objective of present study was the assessment of role played by blood oxygen level in skin type. The basic purpose of my project was to investigate relation between blood oxygen level and skin texture.

Materials and Methods

Measurement of Blood Oxygen Level

Blood oxygen level or Peripheral oxygen saturation (SpO₂) is an assessment of concentration of oxygen found in blood which can be calculated through pulse oximeter gadget. It can be measured through pulse oximetry according to the formula below mentioned formula:

$$S_{pO_2} = \frac{HbO_2}{HbO_2 + Hb}$$

Where, HbO₂ stands for oxygenated hemoglobin and Hb stands for deoxygenated hemoglobin. Blood oxygen level was measured by using Oximeter. Oximetry is an advanced and painless test that calculates your blood oxygen level, or the oxygen levels in your blood. It can easily analyze even small variation in how systematically oxygen is being travelled to the legs and arms. The pulse oximeter is a small, clip-like gadget that can be attached to index finger or earlobe. It works on the basic principle that a beam of light is passed through an index finger and how much quantity of light is being absorbed by oxygenated or deoxygenated blood. In this way, it tells blood oxygen level in reference with pulse rate. Blood oxygen level of 155 subjects was calculated and arranged in data form [1-12].

Project Designing

First, the project was designed to analyze the role of blood oxygen level in skin texture. The first step concerning with project was the calculation of blood oxygen level of subjects. Firstly, the approval of participants was taken for participating in my project. The age of participants ranged from 19 to 23. Participants of this project were the students of Bahauddin Zakariya University, Multan, Pakistan. Total 155 students took part in this project. Total of 155 students, 100 were female students and 55 were male students.

Statistical Analysis

Statistical analysis was manipulated by using M-Stat software. STDEV and arithmetic mean of data was measured and t- test was used to analyze the results.

Results and Discussion

Blood oxygen level of subjects was first measured to monitor the role of blood oxygen level in skin texture of human beings. Average and Standard deviation of dataset was calculated. *t*-test was utilized to interpret the results. Mean ± SD of 20 males with oily skin texture was calculated as 96.75 ± 2.95. Mean ± SD of and 25 males with normal skin texture was calculated 97.56 ± 3.95. Mean ± SD of 10 males with dry skin texture as calculated 97.8 ± 1.22. Mean ± SD of 40 females with oily skin texture was calculated 92.77 ± 7.31. Mean ± SD of 50 females with normal skin texture was measured 97.22 ± 2.77. Mean ± SD of 10 females with dry skin texture was measured 97.3 ± 6.21. Mean ± SD of combined male and females with oily skin texture came out as 94.1 ± 6.46. Mean ± SD of combined male and female with normal skin texture was 97.33 ± 3.18. Mean ± SD of combined male and female with dry skin texture was 95.75 ± 4.84. No one has worked on this project except me ever before.

Table 1: Role of normal blood oxygen level (Mean ± SD) with Oily and Normal skin type

Subjects	Oily	Normal	<i>p</i> -value
1- Male	96.75 ± 2.95	97.56 ± 3.95	0.43
2- Female	92.77 ± 7.31	97.22 ± 2.77	0.00066*
3- Total	94.1 ± 6.46	97.33 ± 3.18	0.00064*

Results were significant as *p*-value is less than 0.05 e.g, *p*<0.05.

Table 2: Role of normal blood oxygen level (Mean ± SD) with Oily and Dry skin type

Subjects	Oily	Normal	<i>p</i> -value
1- Male	96.75 ± 2.95	97.8 ± 1.22	0.18
2- Female	92.77 ± 7.31	97.3 ± 6.21	0.69
3- Total	94.1 ± 6.46	95.75 ± 4.84	0.85

Table 3: Role of normal blood oxygen level (Mean ± SD) with Normal and Dry skin type

Subjects	Oily	Normal	<i>p</i> -value
1- Male	97.56 ± 3.95	97.8 ± 1.22	0.78
2- Female	97.8 ± 1.22	97.3 ± 6.21	0.11
3- Total	97.33 ± 3.18	95.75 ± 4.84	0.17

Conclusion

Elevated blood oxygen level is linked with endurance and physical fitness. On the other hand, diminished blood oxygen level causes hypoxemia condition which is associated with discoloration of skin and ultimately leads to tint the skin. Hence, it was found from results that blood oxygen level plays an important role in determining the skin texture of body. It has become clear that when need of tissues is fulfilled by oxygen, there will be no pigmentation and skin will be fresh, young and healthy.

References

1. Stephen ID, Coetzee V, Law Smith M, Perrett DI (2009) Skin blood perfusion and oxygenation color affect perceived human health. *PLoS One* 4: e5083.
2. Appleton KM, McGrath AJ, McKinley MC, Draffin CR, Hamill LL, et al. (2018) The value of facial attractiveness for encouraging fruit and vegetable consumption: analyses from a randomized controlled trial. *BMC public health* 18: 298.
3. Bhogal AS, Mani AR (2017) Pattern analysis of oxygen saturation variability in healthy individuals: Entropy of pulse oximetry signals carries information about mean oxygen saturation. *Frontiers in physiology* 8: 555.
4. Cowburn AS, Macias D, Summers C, Chilvers ER, Johnson RS (2017) Cardiovascular adaptation to hypoxia and the role of peripheral resistance. *eLife* 6: e28755.
5. Qadir MI, Malik SA (2010) Comparison of alterations in red blood cell count and alterations in hemoglobin concentration in patients suffering from rectal carcinoma undergoing 5-fluorouracil and folic acid therapy. *Pharmacologyonline*, NL 3: 240-243.
6. Qadir MI, Noor A (2018) *Anemias Rare & Uncommon Diseases*. Cambridge Scholars Publishing. Newcastle, England ISBN: 978-1-5275-1807-0.
7. Qadir MI, Javid A (2018) Awareness about Crohn's Disease in biotechnology students. *Glo Adv Res J Med Medical Sci* 7: 062-064.
8. Qadir MI, Saleem A (2018) Awareness about ischemic heart disease in university biotechnology students. *Glo Adv Res J Med Medical Sci* 7: 059-061.
9. Qadir MI, Ishfaq S (2018) Awareness about hypertension in biology students. *Int J Mod Pharma Res* 7: 08-10.
10. Qadir MI, Mehwish (2018) Awareness about psoriasis disease.

-
- Int J Mod Pharma Res 7: 17-18.
11. Qadir MI, Shahzad R (2018) Awareness about obesity in postgraduate students of biotechnology. Int J Mod Pharma Res 7: 14-16.
 12. Qadir MI, Rizvi M (2018) Awareness about thalassemia in post graduate students. MOJ Lymphology & Phlebology 2: 14-16.

Copyright: ©2019 Hira Raheem Akbar. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.