Vol 5 Issue 5 June 2015

ISSN No : 2230-7850

International Multidisciplinary Research Journal

Indian Streams Research Journal

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RNI MAHMUL/2011/38595 **ISSN No.2230-7850**

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International Recognized Double-Blind Peer Reviewed Multidisciplinary Research Journal
Indian Streams Research Journal
ISSN 2230-7850 Impact Factor : 3.1560(UIF)
Volume - 5 | Issue - 5 | June - 2015 Available online at www.isrj.org

THE EFFECT OF SELECTED YOGIC PRACTICES AND PRANAYAMA ON SELECTED HEMATOLOGICAL VARIABLES

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Short Profile

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ABSTRACT:
The purpose of the present study was to determine the effects of selected yogic practices and pranayama on selected hematological variables (White Blood cells, Red Blood cells and Platelets). For the purpose of this study, fifteen (N = 15) subjects were selected as a sample. The age of the subjects were ranged from 15-20 years. A selected yogic practice and pranayama was used to determine their effects on selected hematological variables (WBC, RBC, Platelets). Descriptive and t-test (dependent) was used to interpret the results at .05 level of significance. The results of the study revealed that yogic practices and pranayama had positive effects on White Blood cells (WBC), Red Blood cells (RBC) and Platelets.

KEYWORDS
White Blood cells (WBCs), Red Blood cells (RBCs) and Platelets.

INTRODUCTION :

It is very difficult to justify the history of yoga but after review of the books it is found that the word Yoga comes from the Sanskrit root Yuj, which means to unite, bind and join. Join the physical with the psychological part, important to reintegration and rebalancing of being. Further more the history of yoga is divided into four broad categories, Vedic yoga, Pre-classical yoga, Classical yoga and Post classical yoga.

The philosophy of yoga is an ancient art is born in India, there goal is to development, harmonization and unification of human being. Patanjali defined yoga "as the cessation of the change of the mind." The practice of the yoga leads to equanimity, mental stability, concentration, meditation, good health, self-transformation and libration.

Blood consists of formed elements (RBCs, WBCs & Platelets) and plasma. RBCs, also known as erythrocytes, it plays a vital role in the support of tissue metabolism. It contain from hemoglobin, which is active in the transport of O2 and removal of CO2 from tissues. They also maintain acid-base balance of the body. It account for 99.9% of cells. . White blood cells (WBCs), also called leukocytes or leucocytes, are the cells of the immune system. These are primarily responsible for killing of foreign bacteria. Platelets also called thrombocytes, these are specialized blood cells that play central roles in blood clotting, physiologic and pathologic processes of homeostasis, inflammation and host defense.

Some researchers studied on this topic such as Kasundra Thumar, and Mungra (2010) assess the impact of Pranayama training on selected hematological variables. The results of the study showed significant difference on cholesterol, blood glucose, hemoglobin, WBCs, RBCs, platelets. He finally observed that Pranayama training has positive impact on selected components of blood. Yoga, Kiruthiga and Elangovan (2011) find out the effect of Suryanamaskar and physical exercises on selected hematological variables among college women students. He revealed that the above said criterion variables were significantly improved due to the influence of Suryanamaskar and physical exercises on selected hematological variables among college women students. Talukdar, Jain and Majumdar (1996) conducted study on effect of yoga training on plasma lipid profile, R.B.C. membrane lipid per-oxidation and Na+K + ATPase activity in patients of essential hypertension. He concluded that yoga training program decrease the blood pressure and retards the progression of cellular damage due to free radicals. Saravanan, (2010) studied the effect of Yogasana and Pranayama exercises on selected biochemical and physiological variables. The study revealed that combined work of asana and Pranayama significantly improves HDL concentration and decreases BP, cholesterol and triglycerides level. Selvalakshmi and Yogaraj (2009) conducted study on effect of varied yogic practices on hemoglobin and blood sugar among obese women. Results showed significant improvement on hemoglobin and blood sugar.

METHOD AND MATERIALS

Fifteen (n=15) male students were selected as a subjects. The age ranged of the subjects was 14-20 years. For the purpose of the present study WBC, RBC and Platelets (Hematological variables) were selected. Yogasana practices were given to all the selected subjects for six weeks (6 days/week). The selected yogasana such as Halasna, Ardha Matsyendrasana, Bhujangasana, Padmasana, Salabhasana, , Tadasana, Virksasana, Parivrtta Trikonasana, Virabhadrasana, Utrasana,

Utkatasana,Garudasana, Salabhasana, Dhanurasana, Bhujangansana, Matsyasana, Prasaruta, Padottanasana and pranayama such as Kapalabhati, Sheetali , Surya Bhedana, Chandra bhedana were performed by the subjects.

Data was based on pre and post test and WBC, RBC and Platelets counted by Complete Blood Count test (CBC).

Blood sample of the subjects were taken before and after the six weeks of Asanas with the help of pathology expert and sent to diagnostic center for CBC test. The pre test and post test data were statistically analyzed by t-test. The level of significance was fixed at .05 level. All the statistical procedure was done with the help of SPSS16 version.

Results

Table I
Mean comparison of pre-test and post-test data on WBC among the male

Variable	Sample Size (*N*)	Mean Value (*M*)		Standard Deviation (*SD*)		*df*	*t*- value
WBC (10^9/L)	15	Pre-test	7013.33	Pre- test	506.11	14	9.20*
		Post-test	7250.66	Post- test	520.10		

*: significant at .05 level
Tab t.05 (14) = 1.76

Table I shows that pre- test mean value is (M=7013.33) and post-test mean value is (M=7250.66). It is clear from the table that obtain value of t-test ($t._{05}$= 9.20) is higher than the tabulated value of t-test ($t._{05}$ =1.76) at given degree of freedom (df=14). Its mean there is a significant difference ($t._{05}$= 9.20, p < .05) between pre-test and post-test data on W.B.C.

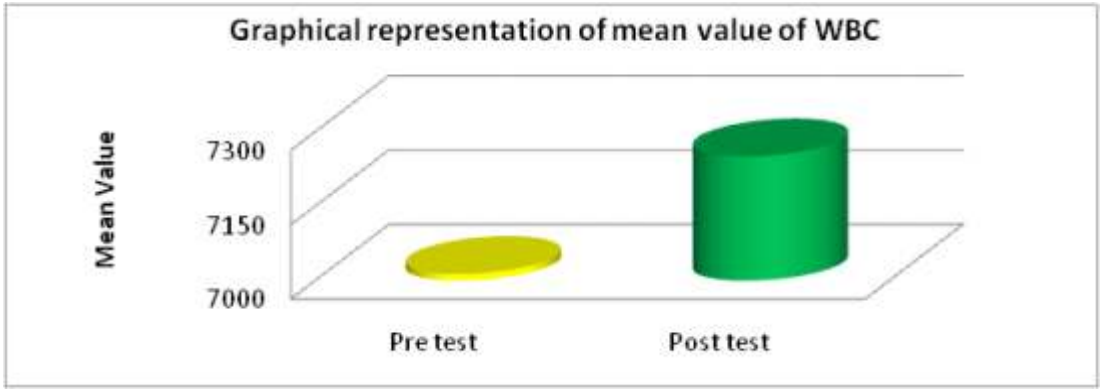


Table II
Mean comparison of pre-test and post -test data on RBC among male

Variable	*N*	*M*		*SD*		*df*	*t*- value
RBC (10^{12}/L)	15	Pre-test	3.67	Pre-test	0.99	14	5.10*
		Post-test	3.95	Post test	0.27		

*: significant at .05 level
Tab $t._{05}$ (14) = 1.76

Table II reveals pre- test mean value of RBC is (M = 3.67) and post-test mean value of RBC is (M=3.95). It is evident from the table that obtain value of t-test ($t._{05}$= 5.10) is higher than the tabulated value of t-test ($t._{05}$=1.76) at given degree of freedom (df = 1.76). Its mean there is a significant difference ($t._{05}$= 5.10, p < 05) between pre-test and post-test data on RBC.

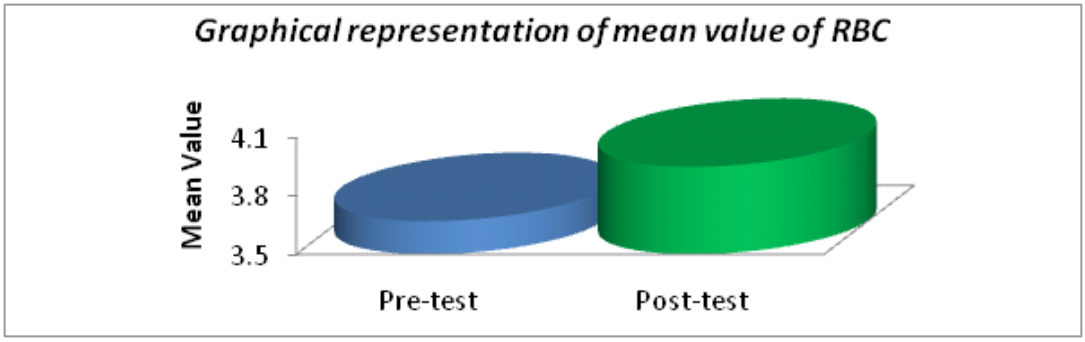
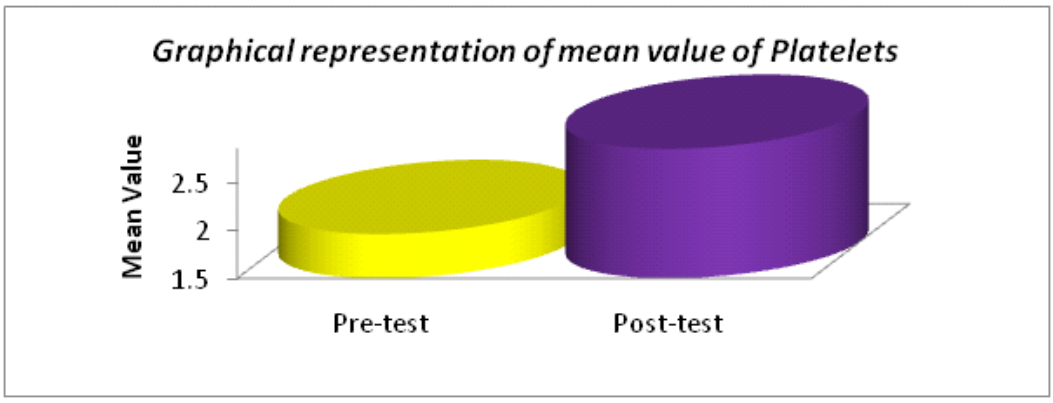


Table III
Mean comparison of pre-test and post- test data on Platelets among male

Variable	N	M		*SD*		*df*	*t*- value
Platelets (g/dl)	15	Pre-test	1.96	Pre-test	0.56	14	2.47*
		Post-test	2.85	Post-test	0.43		

*: significant at .05 level
Tab $t._{05}$ (14) = 1.76

Table III indicates pre- test mean value of platelets is (M = 1.96) and post-test mean value platelets is (M = 2.85). It is clear from the table that obtain value of t-test ($t._{05}$= 2.47) is higher than the tabulated value of t-test ($t._{05}$=1.76) at give degree of freedom (df = 14). Its mean there is a significant difference ($t._{05}$= 2.47, p < 05) between pre-test and post-test data on platelets.



DISCUSSION AND CONCLUSION

The purpose of the present study was to determine the effect of yogic practices on selected hematological variables (WBCs, RBCs & Platelets) among male. It was observed that there was a significant effect of yogic practices and pranayama on WBC, RBC and Platelets among male. It means yogic practices and pranayama (selected) increased the amount of RBCs, WBCs and plates in body.

The out comes of the study with line of the studies of Jothi (2014) he studied the effect of yogic practices and physical activity on selected biochemical variables among sedentary men. The pre-test and post test data were statistically analyzed. Finally he concluded that the selected yogasana practices had positive effects on the WBC and RBC variables. Kasundra, Thumar & Mungra (2010) conducted a study on the topic, "Impact of pranayama on selected components of blood: an analytical study". The objectives of the study were to assess the impact of pranayama training on selected components of blood. 30 subjects are divided into two groups i.e. one experimental and one control group. Experimental group participated in various activities like- yogic exercise, Omkar, Suryabhedan, Chandrabhedan, Bhastrika, Brahmri and Anulom – Vilom. "t- Test" was used to compare pre- value and post- value of the pranayama. On comparing the mean scores of cholesterol, blood glucose, haemoglobin, W.B.C., R.B.C. and Platelets of pre- test and post –test of experimental group , significant difference were found, whereas in control group, no significant difference was found. The pranayama training has an effect on selected blood components.

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