COMPLETE BLOOD CELL COUNT AND RETINAL VESSEL DIAMETERS.

Klein BE, Klein R, Myers CE, Lee KE[1].

OBJECTIVE: To examine the cross-sectional associations of components of the complete blood cell count with retinal vessel diameters.

METHODS: The data are from the baseline examination of the Beaver Dam Eye Study cohort (n = 4730) from March 1, 1988, to September 14, 1990. Blood pressure was measured, a medical history including questions on cigarette smoking was obtained, and fundus photographs centered on the optic disc were taken and digitized. Retinal arteriole and venule diameters were measured using computer-assisted software. The central retinal arteriole equivalent and central retinal venule equivalent were computed. A complete blood cell count was done.

RESULTS: In age- and sex-adjusted analyses, red blood cell count, hemoglobin level, hematocrit, and white blood cell count were all statistically significantly associated with central retinal venule equivalent and central retinal arteriole equivalent, while platelet count was associated only with central retinal venule equivalent. These relationships persisted in more fully adjusted models, except platelet count became statistically significantly associated with both central retinal arteriole equivalent and central retinal venule equivalent.

CONCLUSIONS: Blood components as measured in a complete blood cell count are significant correlates of retinal vessel diameters and should be considered in analyses where retinal blood vessel diameters are outcomes. **[Arch Ophthalmol 2011; 129(4):490-497]**

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EFFECT OF AIR TRAVEL ON EXERCISE-INDUCED COAGULATORY AND FIBRINOLYTIC ACTIVATION IN MARATHON RUNNERS.

Parker B, Augeri A, Capizzi J, Troyanos C, Kriz P, D'Hemecourt P, Thompson P [1]

OBJECTIVE: Air travel and exercise change hemostatic parameters. This study investigated the effect of air travel on exercise-induced coagulation and fibrinolysis in endurance athletes.

PARTICIPANTS: Forty-one adults were divided into travel (T: 23 participants, living >4-hour plane flight from Boston) and nontravel (C: 18 participants, living <2-hour car trip from Boston) groups. INDEPENDENT VARIABLES: Age, anthropometrics, vital signs, training mileage, and finishing time were collected. **SETTING:** The 114th Boston Marathon (April 19, 2010).

MAIN OUTCOME MEASURES: Subjects provided venous blood samples the day before (PRE), immediately after (FINISH), and the day following the marathon after returning home (POST). Blood was analyzed for thrombin-antithrombin complex (TAT), tissue plasminogen activator (t-PA), hematocrit (Hct), and the presence of Factor V Leiden R506Q mutation.

RESULTS: Thrombin-antithrombin complex increased more in T subjects in PRE to FINISH samples (5.0 ± 4.0 to 12.9 ± 15.6 µg/L) than in C subjects (4.0 ± 1.2 to 6.1 ± 1.2 µg/L; P = 0.02 for comparison). The t-PA increased in both the T (5.4 ± 2.3 to 25.1 ± 12.2 ng/mL) and C (5.6 ± 2.0 to 27.7 ± 11.3 ng/mL) groups in PRE to FINISH samples, and this response did not differ between groups (P = 0.23 for comparison). Both groups exhibited similar t-PA and TAT values at POST that were not different than PRE (all P > 0.35). Age was related to the FINISH TAT values in T (r = 0.19; P = 0.04) but not in C (r = 0.03; P = 0.53) subjects.

CONCLUSIONS: Results suggest that the combination of air travel and marathon running induces an acute hypercoaguable state; this hemostatic imbalance is exaggerated with increasing age. [**Clin J Sport Med 2011; 21(2):126-130].**

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