Examined the effect of maternal sleep disordered breathing (SDB) on neonatal neurological examination and perinatal complications, in 44 pregnant women of singleton uncomplicated pregnancies who completed a sleep questionnaire in the second trimester, and underwent a WatchPAT study, and were categorized as SDB (apnea hypopnea index > 5), or non-SDB.

Maternal and newborn records were reviewed and a neonatal neurologic examination was conducted during the first 48 hours.

RESULTS: All women had full-term infants, 11 (25%) had SDB. Mean maternal age of the SDB and non-SDB women were similar, mean BMI before pregnancy in SDB and non-SDB groups were 25.8 ± 4.7 and 22.0 ± 2.5, respectively (P = 0.028). No differences in birth weight, 5 minute Apgar scores, gestational age or infant neurologic examination scores were found between SDB and non-SDB groups.

CONCLUSION: Preliminary results suggest that maternal mild SDB during pregnancy has no adverse effect on neonatal neurologic examination or on perinatal complications.
Results: Cardiovascular outcomes were measured during, immediately, and filtered air in 29 healthy adults (30.4 ± 8.2 years). Ambient coarse, (164.2 ± 80.4 μg/m3) particulate matter air pollution (PM), versus Compared the cardiovascular effects of 2-hour exposures to concentrated ambient coarse, (164.2 ± 80.4 μg/m3) particulate matter air pollution (PM), versus

**CONCLUSION:** Brief exposure to coarse PM in an urban environment raises arterial BP. These findings add mechanistic support to the contention that coarse PM may be capable of promoting cardiovascular events.

**RESULTS:** Mean platelet 5-HT increased by 107.0%, 84.5% and 39.8%, in tE2, oCEE and PL groups, respectively. Platelet 5-HT positively correlated with estrone in the oCEE group and with 17β - estradiol in the tE2 group. Platelet 5-HT showed a positive association with RHI, but not CIMT, in the PL and oCEE groups. Reduction in mood scores for depression-dejection and anger-hostility was associated with elevations in platelet 5-HT only in the oCEE group (p = 0.02).

**CONCLUSION:** In BC survivors, ET improves cardiopulmonary functional capacity and vascular endothelial function, [RHI], after 12 months. Evaluated the role of traditional and novel or potential nontraditional risk factors in vascular and endothelial dysfunction in a cohort of 42 stable kidney transplant recipients at 8.4 ± 1.8 years after transplantation. Carotid intima-media thickness (IMT), pulse wave velocity (PWV), and EndoPAT-RHI were assessed, and inflammatory markers, oxidative stress and endothelial function surrogate markers, adhesion molecules, and parathormone and osteoprotegerin levels were measured.

**RESULTS:** Age, pre-transplantation diabetes, left ventricular hypertrophy (LVH) and cardiovascular disease (CVD) were related to increased IMT and PWV, whereas RHI values were significantly decreased in diabetics and patients with CVD, and were similar in patients with and without LVH. In multivariate regression analysis, IMT was explained by age, previous CVD episodes, and systemic microinflammation were predictors of vascular injury. RHI was poorly associated with traditional CV risk factors and did not correspond with levels of biochemical markers of endothelial dysfunction in this cohort.

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**CONCLUSION:** Exercise training improves cardiopulmonary and endothelial function in women with breast cancer: findings from the Diana-5 dietary intervention study Investigated whether exercise training (ET) improves cardiopulmonary and endothelial function in 51 women with breast cancer (BC), aged 39-72 years, with primary invasive BC within the previous 5 years and enrolled in the Mediterranean diet-based DIANA (diet and androgens)-5 Trial. Twenty-five followed a formal exercise training (ET) program of moderate intensity until 1-year follow-up, while 26 did not perform any formal ET. At baseline and at 1-year follow-up, patients underwent cardiopulmonary exercise stress test (CPET), and EndoPAT-RHI testing.

**RESULTS:** At baseline there were no significant differences between groups in anthropometrical, BC characteristics, metabolic profile, CPET or RHI parameters. Peak oxygen consumption significantly increased in the ET group (p < 0.001) and compared to the control group (p < 0.001). RHI significantly improved only in the ET group (from 2.1 ± 0.7 to 2.5 ± 0.8, p < 0.001). Changes in peak VO2 were correlated with changes in RHI (r = 0.47, p = 0.017).

**CONCLUSION:** Exercise training improves cardiopulmonary and endothelial function in women with breast cancer.
Examined whether the GLP-1 analog exenatide inhibits postprandial vascular endothelial dysfunction in 17 patients with type 2 diabetes mellitus (T2DM), who underwent a meal tolerance test to examine changes in postprandial natural log EndoPAT-RHI, LnRHI, and in glucose and lipid metabolism, without exenatide (baseline), and after a single subcutaneous injection of 10 μg exenatide. In both cases changes were compared between baseline and 120 mins after the meal.

**RESULTS:** LnRHI was significantly lower after the baseline meal, but not in the exenatide test. Exenatide resulted in a significant decrease in triglycerides. Changes in LnRHI correlated with changes in coefficient of variation (CV) of triglycerides and HDL-cholesterol. Multivariate analysis identified changes in triglyceride CV as the only determinant of changes in LnRHI, contributing to 41% of the observed change.

**CONCLUSION:** Exenatide inhibited postprandial LnRHI reduction after the meal loading test, suggesting that exenatide has a multiphasic anti-atherogenic action involving not only glucose but also lipid metabolism.


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Evaluated the effect of treatment with rosuvastatin 10 mg once daily for 12 weeks in 49 patients with stable COPD (n=49), compared to matched controls receiving placebo (n = 50), on EndoPAT-RHI, pulmonary function, and markers of systemic inflammation, interleukin-6 (IL6) and high-sensitivity C-reactive protein (hsCRP).

**RESULTS:** In the overall study population, no significant between-group difference in change in RHI or pulmonary function was observed. Rosuvastatin treatment was associated with a reduction in hsCRP (−20% vs. 11%, P = 0.017) and an attenuation of the rise in IL6 concentration (8% vs. 30%, P = 0.028) compared with placebo.

In a prespecified subgroup analysis of patients with a supra-median circulating hsCRP concentration, rosuvastatin was associated with improved RHI (P = 0.026).

**CONCLUSION:** In stable COPD patients without the standard indications for statin therapy, rosuvastatin treatment is associated with a significant attenuation of systemic inflammation and improvement in endothelial-dependent vascular function, [RHI], in patients with evidence of systemic inflammation.


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Examined whether low testosterone level is associated with arterial stiffness and endothelial and microvascular dysfunction in 237 healthy men aged 50 years (SD 12y). Endothelial and microvascular function were assessed as brachial artery flow-mediated dilation (FMD) and EndoPAT-RHI, respectively. Arterial stiffness was evaluated by tonometry-derived pulse wave velocity (PWV) and central augmentation index (AIX).

**RESULTS:** Mean total testosterone level was 16.3nmol/L (SD 6.11) and 25% of subjects had low levels (<12.0nmol/L). Testosterone level correlated positively with RHI (r=0.24, p<0.001) and inversely with AIX (r=−0.14, p=0.033) but not with FMD or PWV, indicating impaired microvascular hyperemia and arterial elasticity with lower testosterone levels. After multivariate adjustment for the Framingham Risk Score and weight, testosterone level remained an independent predictor of RHI and AIX (β=0.23, -0.13; p=0.001, 0.04, respectively).

**CONCLUSION:** In men with few co-morbidities, lower serum testosterone level is associated with lower RHI and increased pulse wave reflections. Whether normalization of low testosterone level improves vascular function needs further investigation.


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Examined the differential effect of EndoPAT-LnRHI on clinical outcome after percutaneous coronary intervention (PCI) between chronic kidney disease (CKD), and non-CKD patients.

**RESULTS:** A cardiovascular event occurred in 56 patients. Patients who suffered a cardiovascular event had significantly lower LnRHI than other patients in the non-CKD group (0.46 ± 0.18 versus 0.60 ± 0.25; P = 0.002). Kaplan-Meier analysis demonstrated a significantly higher probability of cardiovascular events in low LnRHI patients in the non-CKD group (P = 0.003). LnRHI was an independent and significant predictor of future cardiovascular events in the non-CKD group (P = 0.004) but not in the CKD group.

**CONCLUSION:** There was a differential effect of LnRHI on clinical outcome after PCI between CKD and non-CKD patients, and LnRHI significantly correlated with subsequent cardiovascular events after PCI in non-CKD patients.

FDA clearance for the new WatchPAT Central Plus!
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NEWS

Professor Amir Lerman MD, FACC

Amir Lerman, MD., is a professor of medicine and a consultant in the cardiovascular division at the Mayo Clinic graduate school of medicine, and serves as associate chair and director for research for the cardiovascular division, director of the Mayo cardiovascular research center, and as director of the chest pain and coronary physiology center at the Mayo Clinic. Prof. Lerman’s research is focused on coronary physiology and imaging, and the role of the endothelium in cardiovascular disease and in regenerative medicine. He is a pioneer in the integration of intra-coronary endothelial function assessment, as well as non-invasive endothelial function assessment into clinical practice for over the past 20 years and has published over 500 manuscripts, book chapters and reviews. Prof. Lerman has been engaged in PAT research since 1999 at the Mayo Clinic where he mentored and made essential contributions to the evolution of the EndoPAT and its scientific basis and clinical acceptance. Prof. Lerman and his group have published over 25 peer reviewed papers with EndoPAT among which are the following cornerstone manuscripts:


