

# Study suggests systemic sclerosis is an independent risk factor for atherosclerosis

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A new study by researchers in Hong Kong suggests that systemic sclerosis is an independent determinant for moderate to severe coronary calcification or atherosclerosis. Conventional cardiovascular risk factors such as age and hypertension predispose patients with systemic sclerosis to plaque build-up in the heart arteries similar to the general population. Details of this study are now available in *Arthritis & Rheumatism*, a journal published by Wiley-Blackwell on behalf of the American College of Rheumatology (ACR).

Systemic sclerosis, also known as scleroderma, is a connective tissue disease which is characterized by sclerodermatous (hardening of tissue due to increased collagen deposits) skin changes, Raynaud's phenomenon, and internal organ fibrosis. The ACR estimates that systemic sclerosis affects 49,000 Americans and a prior U.S. study approximated the prevalence to be 25 per 100,000 individuals. While medical evidence suggests that coronary artery disease (CAD) is increasing in patients with systemic sclerosis, the prevalence of coronary calcification (a measure of coronary artery atherosclerosis) and its [risk factors](#) remain unknown.

In the current study a research team, led by Dr. Mo Yin Mok of the Queen Mary Hospital and the University of Hong Kong, recruited 53 patients with systemic sclerosis (50 female, 3 male) and 106 healthy controls to examine coronary artery calcium scores (CACS) and [cardiovascular risk factors](#). Disease activity score, antiphospholipid antibodies, C-reactive protein, and erythrocyte sedimentation rate were also measured for scleroderma patients.

Researchers found that 57% of patients with systemic sclerosis had moderate to severe coronary calcification (CACS greater than 101) compared to only 29% of controls. Scleroderma patients also had significantly lower LDL-

cholesterol, HDL-cholesterol, and diastolic blood pressure compared to healthy controls. In addition, compared to the control group, roughly one-third of patients had a low body mass index (BMI) and would be considered underweight according to recommended BMI cutoffs for Asian populations.

Regression analysis also showed that systemic sclerosis was an independent risk factor for coronary artery calcification (odds ratio of 10.89), and disease duration was associated with more severe atherosclerosis. The results of this study concur with previous reports of increased atherosclerosis as determined by angiography in patients with systemic sclerosis. "Our findings show that [systemic sclerosis](#) patients have an 11-fold increased risk for developing moderate to severe coronary calcification after adjustment for normal cardiovascular risk factors," concluded Dr. Mok. "CAD is a major global health concern, and further studies should explore modifiable disease-specific risk factors in scleroderma patients that could inhibit coronary calcification in this population."

**More information:** Systemic Sclerosis is an Independent Risk Factor of Increased Coronary Artery Calcium Deposition." Mo Yin Mok, Chak Sing Lau, Sonny Sau Hin Chiu, Annette Wai Kwan Tso, Yi Lo, Lawrence Siu Chun Law, Ka Fung Mak, Woon Sing Wong, Peh Lan Khong, Karen Siu Ling Lam. *Arthritis & Rheumatism*; Published Online: April 28, 2011 ([DOI: 10.1002/art.30283](https://doi.org/10.1002/art.30283)).

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