

# Periostin and periodontal disease as modifiers of atherosclerotic coronary artery disease

<b>Submission date</b> 24/04/2015	<b>Recruitment status</b> No longer recruiting	<input checked="" type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
<b>Registration date</b> 23/11/2015	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 20/12/2017	<b>Condition category</b> Circulatory System	<input type="checkbox"/> Individual participant data <input type="checkbox"/> Record updated in last year

## Plain English summary of protocol

### Background and study aims

Atherosclerosis is a serious condition where arteries become clogged up with fatty substances known as plaques. Plaques make the arteries harden and narrow, which restricts blood flow and can cause damage to organs by stopping them from working properly. They can also lead to blood clots which can trigger a stroke or heart attack. Atherosclerosis is the stage before cardiovascular disease, and it does not usually have symptoms until it is advanced and a person's blood circulation is already restricted or blocked. When it is diagnosed at this late stage it is termed cardiovascular disease. Recent studies have shown a link between complications arising from gum disease (periodontal disease) and serious conditions like atherosclerosis. There is some evidence to suggest that preventing gum disease by practicing good oral health, such as regularly brushing your teeth, may help reduce your risk of developing heart disease. Biomarkers (biological markers) are molecules that come from cells which can be found circulating in the blood. Periostin is a biomarker that has been linked to gum disease, among other conditions. The aim of this study is to see if levels of periostin in the blood of patients with atherosclerosis change after the patients receive treatment for gum disease.

### Who can participate?

Adults diagnosed with atherosclerosis and gum disease.

### What does the study involve?

Participants are randomly allocated into one of two groups. Those in group 1 (intervention group) receive surgical dental treatment for gum disease. Those in group 2 (control group) receive non-surgical dental treatment (i.e. scaling and root planing). All participants have blood tests at baseline, then at follow-up 2 weeks, 1 month, 3 months and 6 months after treatment.

### What are the possible benefits and risks of participating?

The results of this study will provide valuable information that could potentially improve treatment for atherosclerotic disease. Also, each participant in this study has free treatment of his/her periodontal disease. Furthermore, the follow-up visits are beneficial because they reinforce oral hygiene techniques.

Where is the study run from?

1. University of Granada (Spain)
2. University Hospital Virgen de las Nieves (Hospital Universitario Virgen de las Nieves) (Spain)

When is the study starting and how long is it expected to run for?

September 2014 to December 2018

Who is funding the study?

1. 7th Framework Programme, Co-funding of Regional, National, and International Programmes (COFUND) - Marie Curie Actions (Spain)
2. Government of Andalucía (Consejería Economía, Innovación, Ciencia y Empleo, Junta de Andalucía) (Spain)

Who is the main contact?

Dr M Padial-Molina

## Contact information

### Type(s)

Public

### Contact name

Dr Miguel Padial-Molina

### ORCID ID

<https://orcid.org/0000-0001-6222-1341>

### Contact details

Facultad de Odontología, Colegio Máximo, Campus Universitario de Cartuja

Granada

Spain

18071

## Additional identifiers

### Protocol serial number

PerioAteroma-2015

## Study information

### Scientific Title

Periostin and periodontal disease as modifiers of atherosclerotic coronary artery disease: a randomised controlled trial

### Study objectives

Periodontal treatment improves systemic biomarkers of atherosclerotic coronary artery disease through a reduction of circulating levels of periostin.

### Ethics approval required

Old ethics approval format

**Ethics approval(s)**

Human Research Ethics Committee, University of Granada, 27/01/2015, ref: 937.

**Study design**

Randomised open-blind controlled interventional single-centre study

**Primary study design**

Interventional

**Study type(s)**

Treatment

**Health condition(s) or problem(s) studied**

Periodontal and atherosclerotic coronary artery disease

**Interventions**

1. Intervention: surgical treatment of periodontal disease by periodontal pocket reduction (modified Widman flap) and bone surgery (to smooth shallow boney craters) if required.
  2. Control: no treatment (oral maintenance by non-surgical therapy (scaling and root planing)).
- Both groups have follow-up at 2 weeks, 1 month, 3 months and 6 months post-intervention.

**Intervention Type**

Procedure/Surgery

**Primary outcome(s)**

Serum markers of atherosclerotic coronary artery disease and periostin.

**Key secondary outcome(s)**

Associated signs and markers of atherosclerosis and periodontal status.

**Completion date**

31/12/2018

**Eligibility****Key inclusion criteria**

1. Aged 18-75
2. Diagnosed atherosclerotic coronary artery disease
3. Diagnosed chronic severe periodontal disease

**Participant type(s)**

Patient

**Healthy volunteers allowed**

No

**Age group**

Mixed

**Lower age limit**

18 years

**Upper age limit**

75 years

**Sex**

All

**Key exclusion criteria**

1. Coronary event less than 6 months before enrolment
2. Renal failure (creatinine>1.5mg/dL)
3. Uncontrolled liver or pulmonary disease
4. Malignant tumour
5. Autoimmune disease
6. Neurologic or psychiatric disorder
7. Uncontrolled diabetes mellitus (HbA1c >8)
8. Presence of infectious disease (aside from periodontal)
9. Antibiotic or periodontal therapy 3 months before start of study
10. Alcoholism or drug abuse
11. Total edentulism
12. Other ongoing oral condition (orthodontic treatment, caries, etc.)
13. Any other contraindication for treatment or unwilling or unable for any reason to provide informed consent and participate in study.

**Exclusion criteria after enrolment:**

1. Periodontal disease progression of more than 2mm at the 3 months re-evaluation, (re)infarction, cardiovascular (re)intervention, or death.

**Date of first enrolment**

01/02/2016

**Date of final enrolment**

30/06/2018

**Locations****Countries of recruitment**

Spain

**Study participating centre**

**University of Granada**

School of Dentistry

University Campus of Cartuja (Colegio Máximo, Campus Universitario de Cartuja, S/N)

Granada

Spain

18071

**Study participating centre**

**University Hospital Virgen de las Nieves (Hospital Universitario Virgen de las Nieves)**

Av. de las Fuerzas Armadas, 2

Granada

Spain

18014

## Sponsor information

**Organisation**

University of Granada

**ROR**

<https://ror.org/04njy449>

## Funder(s)

**Funder type**

Research organisation

**Funder Name**

7th Framework Programme, Co-funding of Regional, National, and International Programmes (COFUND) - Marie Curie Actions (Spain)

**Funder Name**

Government of Andalusia (Consejería Economía, Innovación, Ciencia y Empleo, Junta de Andalusia) (Spain)

## Results and Publications

**Individual participant data (IPD) sharing plan****IPD sharing plan summary**

Available on request