**Supplemental file 1.** Search terms used to identify publications of interest

*Search date: August 2, 2018*

Embase
'thoracic aorta aneurysm'/de **OR** 'Loeys Dietz syndrome'/de **OR** 'Ehlers Danlos syndrome'/de **OR** 'Turner syndrome'/de **OR** 'Marfan syndrome'/de ***OR***'bicuspid aortic valve'/de **OR** 'aneurysm osteoarthritis syndrome'/de **OR** 'Smad3 protein'/de **OR** 'smad3 gene'/de **OR** 'thoracic aortic dissection'/de **OR** 'thoracic aortic aneurysm and dissection'/de **OR** (((thoracic OR thorax) NEAR/3 (aortic OR aorta) NEAR/3 (aneurysm\* OR dilatation\* OR dissect\*)) OR 'Loeys Dietz' OR 'Ehlers Danlos' OR Turner OR Marfan OR ((bicuspid) NEAR/3 (aort\*) NEAR/3 (valve)) OR 'aneurysm osteoarthritis syndrome' OR 'Smad3'):ab,ti

**AND**

'sport'/exp **OR** 'exercise'/exp **OR** 'training'/de **OR** 'athlete'/exp **OR** (sport\* OR exerci\* OR athlet\* OR training):ab,ti

Medline
Aortic Aneurysm, Thoracic/ **OR** Loeys-Dietz Syndrome/ **OR** Ehlers-Danlos Syndrome/ **OR** Turner Syndrome/ **OR** Marfan Syndrome/ **OR** (bicuspid aortic valve).nm. **OR** Smad3 Protein/ **OR** (((thoracic OR thorax) ADJ3 (aortic OR aorta) ADJ3 (aneurysm\* OR dilatation\* OR dissect\*)) OR Loeys Dietz OR Ehlers Danlos OR Turner OR Marfan OR ((bicuspid) ADJ3 (aort\*) ADJ3 (valve)) OR aneurysm osteoarthritis syndrome OR Smad3).ab,ti.**)**

**AND**

exp Sports/ **OR** exp Exercise/ **OR** Athletes/ **OR** (sport\* OR exerci\* OR athlet\* OR training).ab,ti.

Web of Science
**(**(((thoracic OR thorax) NEAR/2 (aortic OR aorta) NEAR/2 (aneurysm\* OR dilatation\* OR dissect\*)) **OR** "Loeys Dietz" **OR** "Ehlers Danlos" **OR** Turner **OR** Marfan **OR** ((bicuspid) NEAR/2 (aort\*) NEAR/2 (valve)) **OR** "aneurysm osteoarthritis syndrome" **OR** "Smad3")**)**

**AND**

sport\* **OR** exerci\* **OR** athlet\* **OR** training

Google Scholar (200 top relevant)
**"**thoracic aortic aneurysm|dilatation|dissection"|"Loeys Dietz"|"Ehlers Danlos"|"Turner syndrome"|Marfan|"bicuspid aortic valve"|"aneurysm osteoarthritis syndrome"|Smad3sport|sports|exercise|athletics|athletes|training