

Vitamin D in Heart Failure

Anna J. Meredith BSc, [Bruce M. McManus](#) MD, PhD, FRSC 

Received 31 May 2013; received in revised form 28 August 2013; accepted 9 September 2013.

[Abstract](#) [Full Text](#) [PDF](#) [Images](#) [References](#)

Abstract

Evidence linking vitamin D to cardiovascular (CV) health has accumulated in recent years: numerous epidemiologic studies report deficiency as a significant CV risk factor, and rodent models suggest that active vitamin D can modulate critical remodeling processes, including cardiac hypertrophy and extracellular matrix remodeling. The presence of vitamin D signaling machinery within the human heart implies a direct role for this hormone in cardiac physiology and may explain associations between vitamin D status and CV outcomes. Heart failure (HF) represents a growing social and economic burden worldwide. Myocardial remodeling is central to HF development, and in the context of emerging evidence supporting mechanistic involvement of vitamin D, this review provides critical appraisal of scientific literature related to the role of vitamin D in CV disease, including data from epidemiologic and supplementation studies, as well as novel findings from animal models and in vitro work. Although associative data linking vitamin D and CV outcomes and evidence supporting a role for vitamin D in relevant pathogenic processes are both substantial, there are limited mechanistic data to indicate vitamin D supplementation as a viable therapeutic adjunct for the prevention of HF development following myocardial injury.

Key Words: [Vitamin D](#), [heart failure](#), [remodeling](#)

To access this article, please choose from the options below

[Login](#) | [Register](#)

Login to an existing account or Register a new account.

Purchase this article for 31.50 USD (You must login/register to purchase this article)
Online access for 24 hours. The PDF version can be downloaded as your permanent record.[Subscribe to this title](#)

Get unlimited online access to this article and all other articles in this title 24/7 for one year.

[Claim access now](#)

For current subscribers with Society Membership or Account Number.

[Visit ScienceDirect](#) to see if you have access via your institution.

See page 709 for disclosure information.

PII: S1071-9164(13)01098-1

doi:10.1016/j.cardfail.2013.09.002

© 2013 Elsevier Inc. All rights reserved.

Article Tools

-  [Download Images*](#)
-  [Email Abstract](#)
-  [Add to My Reading List](#)
-  [Rights/Permissions](#)
-  [Request Reprints](#)
-  [Related Articles](#)
-  (0) [Cited in Scopus](#)
-  [Export Citation](#)
-  [Create Citation Alert](#)
- [* Image Usage & Resolution](#)