

## Hot Flashes in Men

This article was published in the following Scient Open Access Journal:

Women's Health & Gynecology

Received August 08, 2016; Accepted September 01, 2016; Published September 06, 2016;

### Robert R Freedman\*

Wayne State University School of Medicine, Detroit,  
MI 48201, USA

Menopause is coincident with ovarian failure in women, resulting in a relatively rapid fall in levels of estrogens. Although there is no comparable hormonal event in men, some do have hot flashes. In Sweden, it was found that 33.1% of noncastrated men reported hot flashes [1]. The underlying mechanisms for this are not known.

In women, hot flashes are the most common symptom of menopause and are experienced by the vast majority of women in Western societies. They are triggered by small elevations in core body temperature acting within a greatly reduced thermoneutral zone [2]. This reduction is due, in part, to estrogen depletion and is mediated through a  $\alpha_2$ -adrenergic mechanism. Hot flashes can be detected objectively using sterna skin conductance, an electrical measure of sweating. There is a circadian rhythm of hot flashes, peaking at 1825h [2].

The most common cause of hot flashes in men is androgen deprivation therapy for prostate cancer. These hot flashes are similar in some ways to those in women perhaps due to the abruptness of hormonal change. They can be detected by sternal skin conductance level which has reasonable correspondence with patient self-reports [3]. Increases in core body temperature preceded all hot flashes in a single male patient recorded in the laboratory [4]. There is a circadian rhythm of male hot flashes recorded objectively and subjectively, which peaks in the early afternoon [5].

Although the studies cited above suggest several similarities between hot flashes in women and castrated men, there are several differences with those found in healthy aging men. These hot flashes are not accompanied by increases in skin temperature or conductance or by elevations in calcitonin gene-related peptide (CGRP) [6]. The reasons for these differences are completely unknown and would be of great interest in future research.

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Citation: Robert R Freedman (2016). Hot Flashes in Men

\*Corresponding author: : Robert R Freedman,  
Wayne State University School of Medicine, Detroit,  
MI 48201, USA, Email: aa2613@wayne.edu

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