Vascular endothelial growth factor (VEGF) is a vaso-
dilator that induces the proliferation of endothelial cells, 
increases vascular permeability, and causes greater pro-
duction of nitrous oxide and prostacyclin. It is believed 
to play a role in the pathogenesis of asthma, emphysema, 
acute respiratory distress syndrome and lung cancer [1].

There has also been interest in defining a role for 
VEGF in obstructive sleep apnea syndrome (OSAS). 
Patients with OSAS are believed to be at increased risk of 
cardiovascular disease [2]. Individuals with OSAS are 1– 
4 times more likely to develop hypertension with increasing 
severity of OSAS [3]. Hypoxia is believed to stimulate 
the production of VEGF [4]. Investigators have sought to 
implicate VEGF as part of the mechanism by which OSAS 
results in greater incidence of cardiovascular disease. 
Reports that VEGF levels were elevated in OSAS also led to 
an effort to explore if VEGF could be a serum marker for 
the presence of OSAS [5].

However, efforts to establish a relationship between 
VEGF and OSAS have yielded mixed results. Many but 
not all studies have found elevated VEGF levels in sub-
jects with OSAS [6]. Some but not all investigations have 
observed a correlation between the severity of OSAS (as 
measured by the apnea/hypopnea index) and VEGF [6]. 
The relationship between OSAS and VEGF may be 
obsurred by a possible correlation between VEGF and age, 
but reports vary as to whether this relationship exists 
[6].

In the current issue of *Respiration*, an investigation of 
100 subjects with OSAS did not find a correlation be-
tween oxygen desaturation or the apnea/hypopnea index 
and VEGF level. Instead, there was a greater correlation 
between subject age and VEGF level [6].

That studies yield differing results as to whether a re-
lationship exists between OSAS and VEGF level should 
not be viewed as surprising. There are differences in sub-
ject ages and severity of the disease in the populations 
studied. If one is to assume that OSAS does increase 
VEGF, duration of the disease, in addition to duration of 
hypoxia during the night, might be important, but has 
not been addressed in this or previous investigations. Clarification of the association between VEGF and age 
awaits determination of VEGF in normal subjects of dif-
ferent ages.

The relationship between OSAS and cardiovascular 
disease is quite complex. The nature of the association 
may be influenced by the confounding variables of obe-
sity, exercise, and altitude [7, 8]. Catecholamines, C-reac-
tive protein, fibrinogen, plasminogen activator inhibi-
tors, and other cytokines such as interleukin 6, are likely 
to be involved [2]. The lesson to be learned from this and 
other studies of the role of VEGF is that a potential con-
nection between OSAS and cardiovascular disease is not 
best understood by the narrow focus on this single cyto-
kine.
References