

by Gordon Soon

The Dive

Just off the coast of Vancouver, many years ago,
A diver donned his gear to explore the ocean below.
As he wafted through the water, immersed up to his neck,
The pressure outside his body was greater than atmospheric.
His FRC was cut in half and inspiratory work was much greater
Due to reduced outward recoil and less negative intrapleural pressure.
Less pooling of systemic blood from the finger to the toe
Lead to recruitment, distension and greater pulmonary blood flow.

He grabbed hold of his regulator and began a slow descent
Making sure to equalize inner ear pressure to that of ambient.
As he explored all around thinking he could'nt be happier,
He became aware of an urge to empty his bladder
Reduced pooling of blood in the lower extremities
Increased central blood volume and stretch receptor activity.
ADH secretion was reduced and that of ANP increased
Causing much greater urine flow and pressing need for its release.

So the diver wanted to return, as quickly as could be
But remembered two real problems that can arise easily.
Barotrauma of ascent occurs when gas cannot escape;
Trapped gas expands in the lungs when one forgets to ventilate.
The lungs can rupture and cause the air to race
Into the mediastinum, capillaries, and intrapleural space.
Once the air enters the bloodstream in the form of bubbles,
CNS and coronary air emboli are a real source of trouble.

Decompression illness is the other cause for concern
When nitrogen comes out of solution during very rapid return
Bubbles in body tissues and joints can be a real source of pain:
'the chokes,'the bends',and paralysis if damage to the brain.
So diver returned slowly, according to the decompression table,
To the surface, where he arrived safely and physiologically stable.
He know diving could be a dangerous as well as enjoyable activity
But feared not with a sound understanding of respiratory physiology.