

Seafarer health and operational effectiveness

A combination of two or more chronic diseases may pose a high risk of impairing a seafarer's ability to fulfil their role on board. In this article, we look at some specific conditions and the ways these may affect the seafarer's ability to carry out their duties or respond to an emergency situation.



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The Standard Club PEME scheme is designed to facilitate diagnosis of chronic conditions before they become dangerous so that seafarers' health may be improved, and shipowners and managers may be reassured that they are doing all they can to look after their crew and maintain the operational effectiveness of their vessels.

Imagine a notional seafarer who is suffering from three conditions or diseases which have either been untreated or poorly treated for some years.

His profile:

- He is obese – Body Mass Index (BMI) of 33
- He suffers from hypertension (high blood pressure)
- He has type 2 diabetes.

He has not, up to now, had any real problems carrying out his duties.

Why therefore may he be a threat to the safe operation of his ship?

Obesity

Obesity is one of the major causes, not only of hypertension and diabetes, but also of many other conditions, including coronary artery disease.

Obesity itself affects the ability to carry out duties when speed of reaction and agility may be required to use ladders, enter hatches or access confined machinery spaces, particularly in an emergency or bad weather.

Hypertension

Hypertension, if untreated, can quietly damage the body for years before symptoms develop, acting as a 'time-bomb' ticking away. The areas that it can damage include:

- The arteries: Hypertension can increase the pressure of the blood flowing through the arteries, which can damage the cells of the arteries' inner lining. The artery walls may become less elastic, limiting the blood flow and further increasing pressure. This can lead to an aneurism, where a section of the wall forms a bulge which can rupture and bleed, most commonly in the aorta, the body's largest artery.
- The heart: Hypertension can lead to coronary artery disease, enlarged left heart or heart failure. These conditions increase the risk of heart attack and sudden cardiac death.
- The brain: Hypertension can lead to a stroke, where the blood vessels in the brain may narrow, rupture, leak or form an aneurism. In the longer term, it is suspected that hypertension leads to dementia and cognitive impairment when there is reduced blood flow to the brain.



- The kidneys: Hypertension is one of the most common causes of kidney failure, scarring of the blood vessels in the kidney or an aneurism of an artery leading to the kidney. There can be dangerous internal bleeding or significant failure of the kidneys such that dialysis may be required.
- The eyes: High blood pressure can damage blood vessels leading to the retina, cause fluid build-up under the retina or optic nerve damage. In all cases, there can be blurred and impaired vision, or even total loss of vision.
- digestive problems
- kidney disease
- skin problems
- nerve damage
- lack of blood circulation, resulting in:
 - dry skin
 - slow healing of cuts, burns and wounds
 - fungal and bacterial infections
 - loss of feeling in the foot.

The symptoms of diabetes can be quite subtle and seemingly harmless, but if left untreated, can lead to any or all the diabetic complications.

A combination of conditions

To return to our notional seafarer, if his conditions are undetected or he is aware but has not sought treatment, he may be in danger of suffering any one of the following problems:

- heart disease leading to heart failure and heart attack
- stroke involving a brain aneurism or haemorrhage
- fatigue
- kidney failure
- lack of co-ordination
- pain and depression
- degraded ability to use the hands and feet
- poor vision.

Depending on his role on board the ship, any of these problems may affect his ability to carry out his duties to varying degrees and detract from the operational efficiency of the vessel. He could be a bridge watchkeeper with deteriorating eyesight or a boatswain who has lost feeling in one of his hands or feet, or both; an engineer who suffers a heart attack or a stroke whilst the engineer officer of the watch is at standby; or an officer whose fatigue is such that he is unable to keep up with his administrative duties.

Conclusion

The good news is that, if detected early, the conditions of obesity, hypertension and type 2 diabetes can be controlled by a combination of medication, lifestyle changes and regular medical check-ups. This means that many seafarers with such conditions can complete a full seagoing career provided that early diagnosis is coupled with compliance with medication and medical advice.

A seafarer with untreated hypertension is therefore at high risk. As the condition develops, he will clearly become less able to carry out duties and, in the worst case, may fail in his duties in a safety-critical situation. Having fallen seriously ill, the ship may have to divert significantly from the planned voyage to obtain treatment or arrange repatriation.

Diabetes

Type 2 diabetes is becoming more common among seafarers, and is often linked to obesity, but not always. It also contributes to high blood pressure. Prolonged uncontrolled diabetes can lead to:

- problems with the retina of the eye, resulting in poor vision