

Call for the National Boards of Health and the Maritime Administrations to introduce valid screening for type 2 diabetes at the maritime medical examinations

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Worldwide, in 2019 there were approximately 463 million adults (20–79 years) with type 2 diabetes mellitus (T2DM), by 2045 this number will have increased to 700 million adults. In addition, 374 million people have precursors to T2DM, prediabetes.

For seafarers and fishermen, there is great social inequity in relation to health, with an increased risk of obesity, metabolic syndrome, T2DM, and hypertension. There is therefore a great need for early and accurate diagnosis as part of prevention and retention in work.

Like several other occupational groups (including lorry drivers), seafarers and fishermen must undergo mandatory health examinations every or every second year by maritime doctors who are general practitioners authorized to carry out these examinations. While around 1.5 million seafarers there are millions of fishermen with medical examinations annual or biannual.

It is a major health problem that significant medical errors occur in these studies in the form of underestimation of the prevalence of T2DM with up to 80% false negatives due to the use of the current method with urine

sticks. The prediabetes remains unknown, and an important prevention potential is thus not utilised. Ignorance of the prevalence of prediabetes and T2DM is a serious obstacle to establishing relevant prevention [1–3].

The focus on early diagnosis and prevention of T2DM is based on scientific evidence that preliminary stages of T2DM, prediabetes, are reversible and can be normalised with non-pharmacological measures and, moreover, are assessed to be cost-effective. The international guidelines for the diagnosis of T2DM should use laboratory analyses for long-term blood glucose (glycated haemoglobin [HbA1c]) or fasting blood glucose [4]. However, this does not happen in several European and other countries as seen in a random selection from several countries of copies of the forms used to report the results of the maritime medical examinations. Almost all of them use urine dipsticks instead of blood tests with long-term blood glucose or fasting blood glucose as recommended by the American Diabetes Association (ADA) [4].

The overall goal, seen from a medical and scientific perspective, is to establish an early and accurate diagnosis

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of T2DM during the medical examinations as a background for establishing an effective prevention in collaboration with the maritime doctors, the Maritime Authorities, the shipping companies, and other relevant organizations. Probably as the only country, Spain introduced testing of fasting blood glucose for all seafarers many years ago followed up by a HbA1c test where the fasting glucose is abnormal. Initiatives are currently underway to revise the International Labour Organization/International Maritime Organization (ILO/IMO) guidelines for medical examinations in this area.

In conclusion, there is a need for upgrading the routine “fit for duty” medical examinations also for other transport workers including, truck-, taxi- and locomotive drivers, and airline pilots to replace glucose strip test by either HbA1c or fasting blood glucose test (fasting plasma glucose) for diagnosis of T2DM.

This is hereby a call to the National Boards of Health to revise the national guidelines for the medical doctors on using fasting blood glucose or long-term blood glucose at the medical examinations for precise diagnostics of T2DM. Finally, the medical doctors should report all laboratory results with the key variables to the national

occupational/maritime health research centres for analysis on the standard Excel file for use in the research and prevention [5].

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