The article starts with the background that a considerable research and operational experience has documented breakdowns in pilot-automation coordination on modern flight decks. These breakdowns are often considered symptoms of monitoring failures even though, only limited data exist concerning pilot’s monitoring strategies and performance.

The aim of this study was to examine pilot’s automation monitoring strategies and performance on highly automated commercial flight decks. Their methodology included collection of behavioral, mental model, and eye-tracking data from 20 experienced B-747-400 airline pilots who flew a 1-hr scenario involving challenging automation-related events on a full-mission simulator.

The authors confirmed that pilots monitor basic flight parameters to a much greater extent than visual indications of the automation configuration. In specific, they frequently fail to verify manual mode selections or notice automatic mode changes. In other cases, they do not process mode annunciations in sufficient depth to understand their implications for aircraft behavior. Low system observability and gaps in pilot’s understanding of complex automation modes were shown to contribute to these problems.

The authors conclude by stating that monitoring failures are one major contributor to breakdowns in pilot-automation interaction. Finally, the article ends by reinforcing the need for the design of improved training programs and automation interfaces that support more effective system monitoring.

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Stephen A. Brietzke; Controversy in Diagnosis and Management of the Metabolic Syndrome; The Medical Clinics of North America; 91 (2007); 1041-1061

The triad of obesity, Diabetes Mellitus II and Cardiovascular disease is having a devastating effect on healthcare around the world and its incidence is rapidly increasing within the aviator community. Metabolic Syndrome (MetS) is a major link between these entities. Controlling this menace will be one of the biggest challenges of clinical aerospace medicine in times to come. Metabolic syndrome refers to a constellation of interrelated cardiac risk factors that appears to promote the development of Atherosclerotic Cardiovascular Disease. But there still remains enough controversy and disagreement regarding several aspects of this disease amongst clinicians around the world.

This article addresses several aspects of the current controversy surrounding metabolic syndrome: (1) definition of metabolic syndrome; (2) evidence for and against the use of metabolic syndrome as a cardiovascular disease risk predictor; (3) evidence as to underlying pathophysiology; and (4) evidence for treatment of metabolic syndrome (as opposed to components of the syndrome) in a risk reduction strategy to prevent type 2 diabetes mellitus or cardiovascular disease.

There has always been a lingering confusion about the nomenclature of this syndrome since 1988 when Reaven defined a condition he called “Syndrome X”, the confusion stemmed from the fact that there was another “Syndrome X”, a name given by cardiologist to the phenomenon of angina pectoris associated with angiographically normal coronary arteries. Reavens original name gave way to the name Metabolic Syndrome, in 2001 aggressive efforts by the American Association of Clinical Endocrinologists led to the recognition of the Metabolic Syndrome as a diagnostic entity with its own ICD-9 code 277.7

Another ill defined area regarding this syndrome is similar but unique syndrome–defining features, in which most regulatory bodies differ, leading to a distinct lack of legitimacy for regarding MetS as a discrete entity and universally accepted diagnostic criterion. The author gives a good overview of several studies conducted to quantify the ability of MetS to improve the ability to estimate CVS disease risk which also has been a matter of much debate.

This article also gives a good understanding of the pathophysiology of the MetS especially from the molecular point of view. He suggested that the measurement of serum Adiponectin (strong association of Hypoadipinaemia with disease risk) offers a good clinically useful measure of the degree of MetS and in disease monitoring.

The author has reviewed the arguments for and against the present status of MetS as a specific entity as against a group of symptoms. The paper gives a fresh prospective into the entity of Metabolic Syndrome along with its fallacies. In these days of increasing lifestyle influenced diseases, the article implores to think anew on the different aspects of the syndrome and its practicality.

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