

# Foreword

This special issue of *Industrial Health* has pulled together and synthesized the literature on various aspects of shiftwork, distilling current knowledge into consensus statements and best practices. It was conceived and developed by the officers and executive board of the Working Time Society (WTS; [www.workingtime.org](http://www.workingtime.org)), a not-for-profit organization affiliated with the Scientific Committee on Shiftwork and Working Time (SCSWT) of the International Commission on Occupational Health (ICOH, [www.icohweb.org](http://www.icohweb.org)). ICOH's mission includes to "...foster the scientific progress, knowledge and development of occupational health and related subjects on an international basis." In executing this mission, ICOH and its scientific committees are expected to disseminate information and issue guidance on matters related to occupational health. This special issue is a reflection of this mission, with the intent to inform professional communities on the current state of the science regarding working time and provide useful information to stakeholders (practitioners, policy makers, and workers) on topics that affect the worker community.

The SCSWT was formally established in 1974, with a focus on research and practices pertaining to psychosocial aspects and health problems connected with night and shift work and—more generally—working time arrangements. The WTS was established, as an organization working in conjunction with the SCSWT, in 2001, and incorporated as a not-for-profit organization in 2018. Aiming to include all social actors (e.g., researchers, regulators, psychologists, sociologists, managers, worker advocates, and consultants) interested in working time-related issues, the WTS was established with three objectives:

1. To discuss both basic and applied problems related to working time and schedules;
2. To act as an advisory committee for national and international bodies; and
3. To promote cooperative efforts for the solution of occupational working time-related problems.

The effects of working time have been studied scientifically in relation to medicine (health, disease prevention, acute and chronic illness, mortality), physiology (circadian rhythms, sleep, cardiovascular and hormonal patterns, feeding and digestion, etc.), psychology (alertness, cognition, mood, well-being, mental health, etc.), sociology (working teams, family dynamics, workplace and societal

culture), and safety (fatigue, hazard exposure, risk management, etc.). In recent decades, these areas, along with the fields of public health, economics, and data analytics, have begun to merge and converge on pervasive and growing working time-related concerns. Outcomes of poor working time management, by both employers and employees, as well as non-work-related factors impacting on workplace outcomes, have been well documented in mishap reports in the transportation and medical sectors, for example, in which people have died as a result of uncorrected errors, such as missing a rail signal, mistaking nitrous oxide gas for oxygen in a surgical unit, or other unsafe practices. Working time arrangements may also adversely affect safety outside the workplace (e.g., during the commute to and from work, or at home), and epidemiological evidence is mounting of a relationship between lifetime exposure to night and shift work and risk of chronic diseases such as type 2 diabetes and cancer.

Despite more than half a century working on these problems, the adverse consequences of suboptimal working time arrangements continue, while the number of people exposed to non-diurnal or irregular work schedules is increasing worldwide for a number of reasons, including the demand to recover capital expenditure as well as the increasing pressure for 24 h service. Even so, progress has been made in devising multifaceted solutions, combining technical, psychological, sociological, physiological, pharmacological, economical, and political science. Indeed, the issues of working time are global and not unique to developed or developing nations or a particular country or economic sector. What may differ is the context and culture in which working time operations takes place, requiring tailored remedies and interventions to improve and maintain worker health and safety.

This special issue is meant to provide a foundation of information and concepts for anyone involved in the conversation around working time. It is critical that stakeholders have access to the best information available when developing, adjusting, or negotiating working time arrangements, policies, practices and/or regulations. Our intent and goal is for the available research to become more accessible to those who need or benefit from this information, thereby allowing these stakeholders to focus on evidence-based solutions, and become more educated consumers of researcher and practitioner support. To that

end, we have developed nine review papers, with the purpose of providing a relatively comprehensive picture of the state of the science around working hours. Our plan is for the WTS to periodically update the material in these papers to help ensure the information remains current and relevant, and serves as connection point between researchers, practitioners, and other stakeholders on what is known and what still needs to be understood to improve worker health and safety regarding working time. The consensus statements that accompany each of the review papers provide workers, practitioners, trade organizations and policy makers with concepts to consider when (re)structuring working hours and related responsibilities and protections. By raising awareness on this topic, we hope to ensure that what is being proposed or negotiated regarding working times and associated policies is in line with the science and best practice.

The officers and board of directors of the WTS thanks all of the authors and reviewers for the many hours spent on producing the papers in this special supplement. It was a large effort to understand what are the salient points that need consensus, and then to obtain that consensus. The success of this special issue in achieving its goal, however, is ultimately up to its readers and their willingness to apply its findings to challenges that arise from work scheduling. While it is the intent of ICOH and WTS to assemble and disseminate the best guidance possible, it only becomes real in improving workplace outcomes when the information is applied. We look forward to hearing from you as to how you have used the information contained herein, and your ideas for additional information and communication tools to support your efforts. Together we can improve the lives of the current and future global workforce.

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