

Informasjon til Sikkerhetsforum. Oppfølging etter møte 3. februar 2016.
**Sikkerhet- og helserisiko fra trøtthet i skiftarbeid og avspasering.
Om behov for etablering a systemer for håndtering av trøtthet
(Fatigue risk management systems)**



Utarbeidet av
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Hva sier forskning om helse– og sikkerhetsrisiko ved økning av skiftlengde?

- 12 timers skift gir kortere tid til restitusjon
- Lengre skift kan gi større problemer for eldre arbeidstakere
- Lengre skift vil gi mindre mulighet til søvn mellom skiftene
- Økt trøtthet (søvnunderskudd) øker sannsynlighet for feilhandlinger
- Økt trøtthet gir større sannsynlighet for feilhandlinger i trafikken
- Økt trøtthet kan gi effekter på kjøreferdighet som kan sammenlignes med alkoholpåvirkning
- Trafikkulykker som kan tilskrives trøtthet medfører straffeansvar og kan i ytterste konsekvens gi ubetinget fengsel
- Det er et absolutt behov for «fatigue risk management systems»



Fatigue

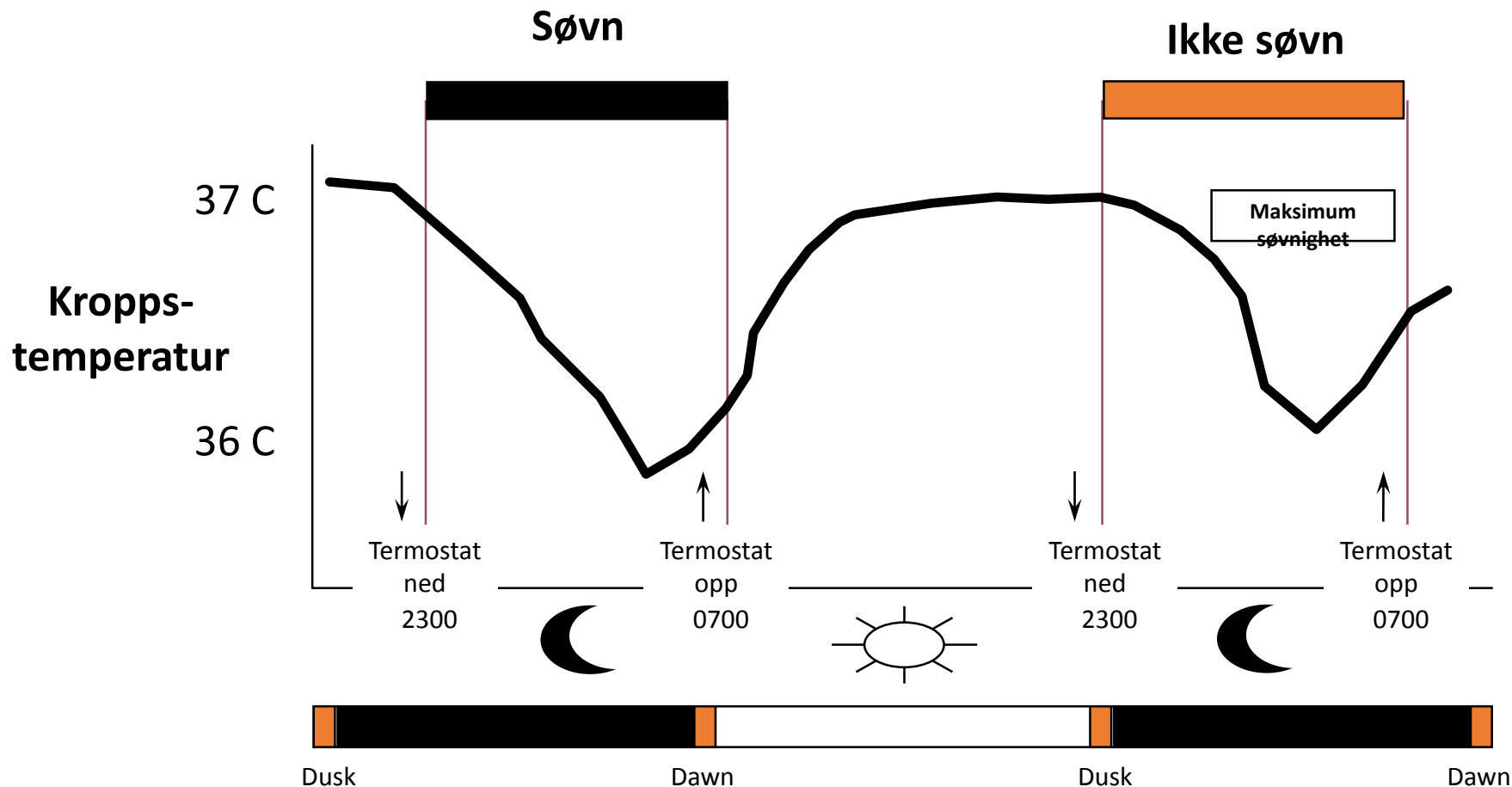
- Det engelske ordet "fatigue" brukes til å beskrive trøtthet som skyldes kombinasjonen av søvnunderskudd og arbeid på tider hvor kroppen helst vil sove.
- Fatigue regnes som en av de aller viktigste faktorene ved ulykker.

Cirkadisk rytme

- Cirkadisk (omtrent en dag) rytme er fellesbetegnelsen for den rekke av fysiologiske prosesser som har en periodisitet som ikke skyldes vekslingen mellom dag og natt, men som er styrt av egenskaper i organismen, og viser seg selv om vi lever i eksempelvis konstant lys eller mørke.
- Kroppens temperaturendring på omkring en grad Celsius i løpet av et døgn, er et eksempel på denne rytmen. Det samme gjelder våkenhet-trøtthetsperioder og mange hormonelle sekvenser. Derfor sier man at prosesser med periodisitet på omkring 24 timer har en cirkadisk rytme.



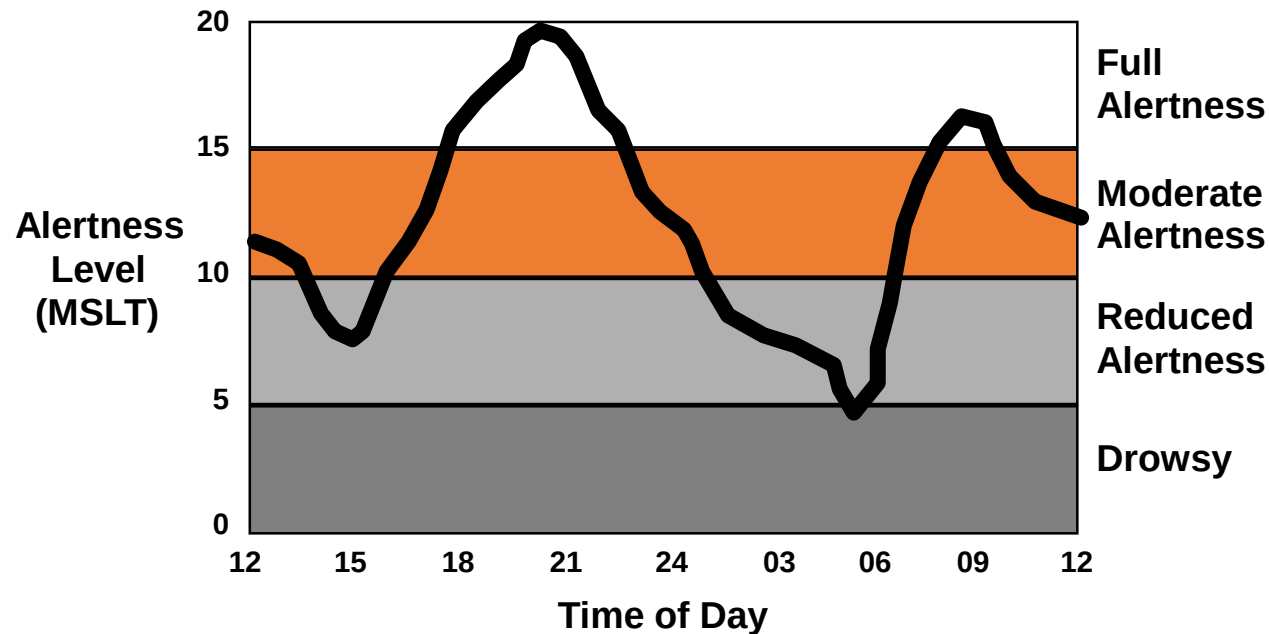
Menneskene er underlagt en cirkadisk rytme



Uansett om vi er våken eller sover, kroppstemperaturen følger den circadiske rytmen

Circadian Rhythm of Human Alertness

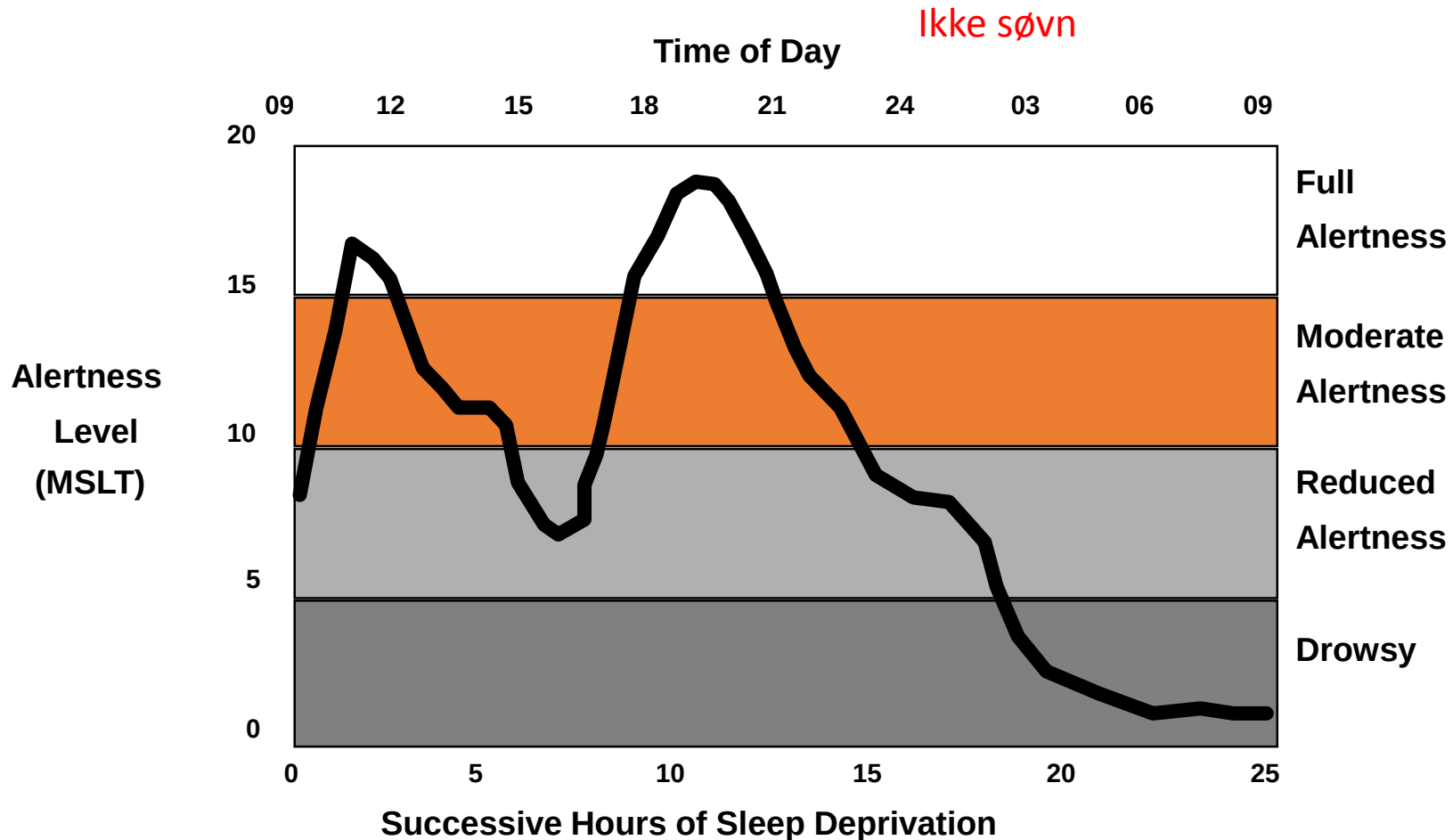
(With Normal Quantity / Quality of Sleep)



Source: Circadian Technologies, Inc. (1993)

MSLT: Multiple Sleep Latency Test

Naturlov; Årvåkenhet er avhengig av søvnmengde og søvnkvalitet. Den er ikke et holdningsspørsmål



Hvordan reguleres søvnen?

- Søvnlength og -dybde reguleres av et samspill mellom ulike faktorer. Sentralt i dette samspillet står søvnbehov (homeostatisk faktor), døgnrytme (cirkadian faktor) og vaner/atferdsfaktorer.
- Søvnlengthen er ikke bestemt av hvor lenge det er siden man sov sist. Det er døgnrytmen (cirkadian faktor) som har avgjørende betydning for hvor mange timer man sover, og hvor trett man er når man legger seg.
- Dette medfører at søvnlengthen varierer betydelig etter når på døgnet man legger seg, nesten helt uavhengig av hvor lenge man har vært våken.

(Utdrag fra artikkelen **Normal søvn** av prof. Bjørn Bjorvatne,

www.helse-bergen.no/no/OmOss/Avdelinger/sovno/sovn-og-sovnsykdommer/Sider/normal-sovn.aspx)

Homeostatisk faktor

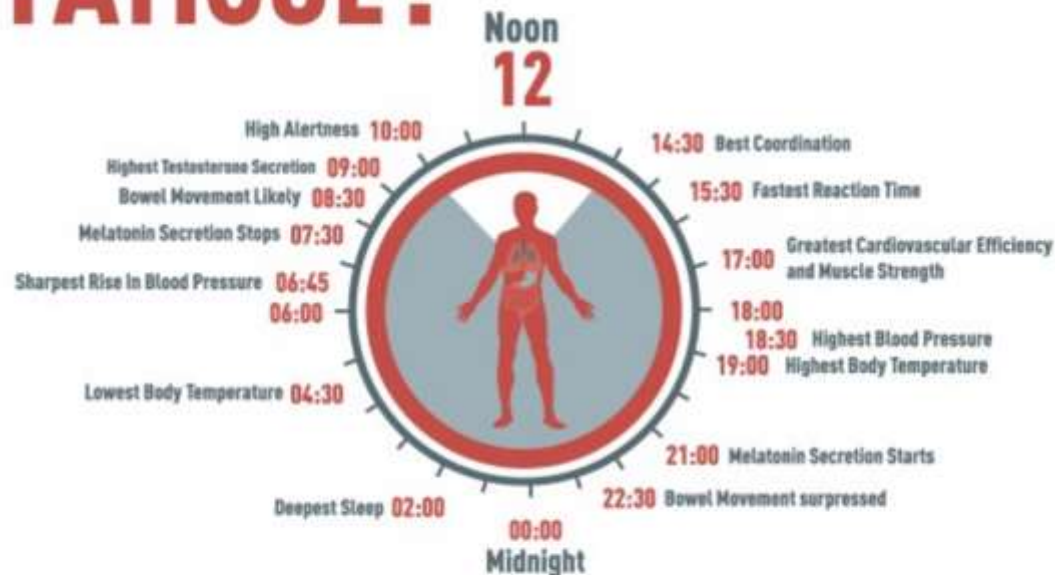
- Hvilken rolle har så homeostatisk faktor? Jo, antall timer i våken tilstand bestemmer hvor dypt man sover.
- Søvnbehovet bygger seg opp mens man er våken, og søvnen blir dypere (mer langsomme deltabølger) jo lenger det er siden man sov sist.
- Samspillet mellom den homeostatiske og cirkadiane faktoren er derfor vesentlig for hvordan søvnen reguleres, og denne forståelsen benyttes i moderne behandling av søvnproblemer.»

(Utdrag fra artikkelen **Normal søvn** av prof. Bjørn Bjorvatne,

www.helse-bergen.no/no/OmOss/Avdelinger/sovno/sovn-og-sovnssykdommer/Sider/normal-sovn.aspx)

WHAT IS FATIGUE?

'Fatigue' is a general term used to describe the feeling of being tired, drained or exhausted. Fatigue is a cumulative and gradual process that manifests in the form of tiredness, lack of energy, exhaustion and reductions in performance capacity. It is said to be a "common, almost universal feature of modern life," but when it is in excess is clearly an industrial and public safety issue.'



The circadian rhythm acts as a body's internal "alarm clock"; telling the body when to sleep, when to wake up and when to eat. On average, an adult requires 8 hours of sleep in a 24-hour period. Disrupted circadian rhythms can impact on the quality and quantity of sleep, task performance and create a perceived sense of personal imbalance.

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ABSTRACT RELATERTE SAKER

Skiftarbeid og søvn

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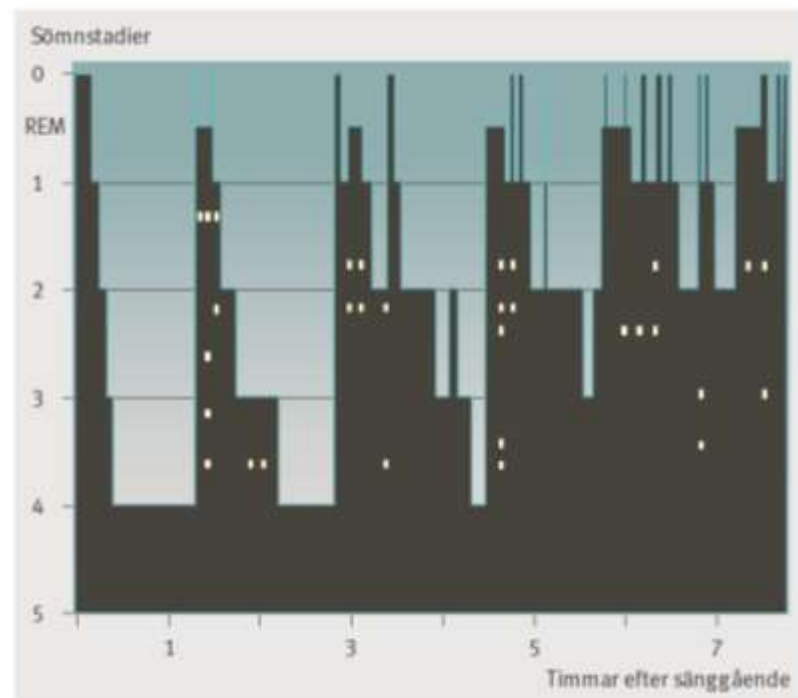
Utbredelsen av skiftarbeid har økt dramatisk de siste tiår. Dette kan ha konsekvenser for søvn og helse.

Innledning

Søvn er viktig for kroppens gjenoppbygging, og mangel på søvn kan påvirke immunforsvar og kognitive funksjoner som hukommelse og læring (Ursin, 1996). Det er imidlertid stor variasjon i søvnbehov. Gjennomsnittlig søvnlengde er 7 til 7,5 timer, og de fleste mennesker sover mellom 6 og 9 timer (Ursin, 1996). Som hovedregel regnes det at man har fått tilstrekkelig med søvn dersom man føler seg uthvilt på dagtid. Søvn reguleres i hovedsak av tre faktorer: 1) hvor lenge vi har vært våkne (homeostatisk faktor), 2) døgnrytmen (circadian faktor) og 3) vaner/atferd (Bjorvatn & Holsten, 1997; Bjorvatn & Pallesen, 2004). Det er døgnrytmen som har størst betydning for hvor mange timer man sover og hvor søvnnig

LIVSSTILEN PÅVERKAR SÖMNMEN – PÅ GOTT OCH ONT

Sömn är en bas för långsiktig hälsa. Olika livsstilsfaktorer kan påverka sömnen både negativt och positivt. Lågintensiv motion, stresshantering, tid för nedvarvning, stabila sovmönster och svalt sovrum är knep för att vårda sömnen.



Figur 1. Sömlös i stadsnatten ... Hypnogram beskriver sömnstadiernas mönster över tid.

»De långsiktiga hälsoeffekterna av kort eller störd sömn inkluderar diabetes, hjärt-kärlsjukdom, depression, utmattningssyndrom ...«

Stor forskjell på hvordan yngre og eldre arbeidstakere takler skiftarbeid

Comparing performance on a simulated 12 hour shift rotation in young and older subjects

K Reid, D Dawson

Abstract

Objectives—To simulate a 12 hour shift rotation and measure the difference in performance if any, between older and younger subjects. Significant reductions in neurobehavioural performance during shift work and particularly night work have long been recognised. There are conflicting reports of the effects of 12 hour shifts on performance, alertness, and safety. Furthermore, research suggests that older shift workers have more sleep disruption and maladaptation to shift work. When this is combined with longer hours at work there may be considerable reductions in performance for older compared with younger workers.

Notable reductions in neurobehavioural performance during shift work and particularly night work have long been recognised.^{1 2} These reductions in performance are thought to be the result of both the sleep disruption associated with shift work³ and the circadian rhythm of performance.^{4 5} Research has linked the increase in sleepiness and reductions in performance associated with night work with an increase in accidents that are estimated to cost industry and the community billions of dollars each year.^{6 7}

As the demands of industry increase the importance of shift work schedules and the variety of different schedules is increasing. For some industries a popular alternative to the typical 8 hour rotating working week is the 12 hour shift rotation.^{8 9} The benefits resulting from this type of schedule include a reduction



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Skiftarbeid kan gi
mange helse- og
sikkerhetsmessige
konsekvenser

Sleep Loss and Fatigue in Shift Work and Shift Work Disorder

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Abstract

Shift work is highly prevalent in industrialized societies (>20%) but, when it includes night work, it has pronounced negative effects on sleep, subjective and physiological sleepiness, performance, accident risk, as well as on health outcomes such as cardiovascular disease and certain forms of cancer. The reason is the conflict between the day oriented circadian physiology and the requirement for work and sleep at the “wrong” biological time of day. Other factors that negatively impact work shift sleepiness and accident risk include long duration shifts greater than 12 hours and individual vulnerability for phase intolerance that may lead to a diagnosis of shift work disorder; i.e., those shift workers with the greatest sleepiness and performance impairment during the biological night and insomnia during the biological day. Whereas some countermeasures may be used to ameliorate the negative impact of shift work on nighttime sleepiness and daytime insomnia (combined countermeasures may be the best available), there seems at present to be no way to eliminate most of the negative effects of shift work on human physiology and cognition.

www.ncbi.nlm.nih.gov/pmc/articles/PMC2904525/pdf/nihms215779.pdf

Foredrag på SAFE
HMS konferanse
«Hvor går grensen?»
5. mai 2009



Arbeidstid, helse og sikkerhet

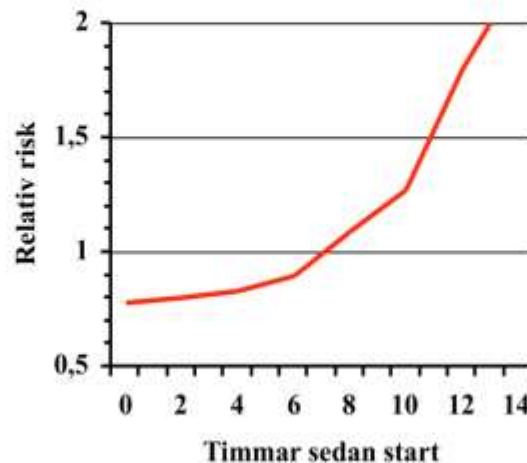
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Ulykkesrisiko øker med økende skiftlengde



Långa arbetspass innebär ökad risk för olycka



Hva er fatigue risk management?



Fatigue risk management

- Syftet är att undvika säkerhetsrisiker som beror på trötthet och pressade arbetstider
- Minimera sömnbrist, lång vaka och besvärliga skiftkombinationer
- Utbilda personalen (öka deras medvetenhet) - även chefer och administrativ personal
- Utveckla system för att övervaka arbetstider och trötthet (t ex när olyckor/tillbud inträffar) för att förebygga olyckor/felhandlingar

Søvn og sikkerhet

Sleep Medicine Reviews (2005) 9, 305–320



SLEEP
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THEORETICAL REVIEW

Managing fatigue: It's about sleep

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KEYWORDS

Fatigue;
Prior sleep;
Wakefulness;
Safety;
Management;
Prescriptive rules;
Hours of service

Summary Fatigue has increasingly been viewed by society as a safety hazard. This has led to increased regulation of fatigue by governments. The most common control process has been compliance with prescriptive hours of service (HOS) rule sets. Despite the frequent use of prescriptive rule sets, there is an emerging consensus that they are an ineffective hazard control, based on poor scientific defensibility and lack of operational flexibility. In exploring potential alternatives, we propose a shift from prescriptive HOS limitations toward a broader Safety management system (SMS) approach. Rather than limiting HOS, this approach provides multiple layers of defence, whereby fatigue-related incidents are the final layer of many in an error trajectory.

This review presents a conceptual basis for managing the first two levels of an error trajectory for fatigue. The concept is based upon a prior sleep/wake model, which determines fatigue-risk thresholds by the amount of sleep individuals have acquired in the prior 24 and 48 h. In doing so, managing level 1 of the error trajectory involves the implementation of systems that determine probabilistic sleep opportunity, such as prescriptive HOS rules or fatigue modelling. Managing level 2, requires individuals to be responsible for monitoring their own prior sleep and wake to determine individual fitness for duty. Existing subjective, neurobehavioral and electrophysiological research is reviewed to make preliminary recommendations for sleep and wake thresholds. However, given the lack of task- and industry-specific data, any definitive conclusions will rely in post-implementation research to refine the thresholds.

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<http://www.ncbi.nlm.nih.gov/pubmed/16099184>

REVIEW

Vehicle accidents related to sleep: a review

Jim Horne, Louise Reyner

Abstract

Falling asleep while driving accounts for a considerable proportion of vehicle accidents under monotonous driving conditions. Many of these accidents are related to work—for example, drivers of lorries, goods vehicles, and company cars. Time of day (circadian) effects are profound, with sleepiness being particularly evident during night shift work, and driving home afterwards. Circadian factors are as important in determining driver sleepiness as is the duration of the drive, but only duration of the drive is built into legislation protecting professional drivers. Older drivers are also vulnerable to sleepiness in the mid-afternoon. Possible pathological causes of driver sleepiness are discussed, but there is little evidence that this factor contributes greatly to the accident statistics. Sleep does not occur spontaneously without warning. Drivers falling asleep are unlikely to recollect having done so, but will be aware of the precursory state of increasing sleepiness; probably reaching a state of fighting off sleep before an accident. Self awareness of sleepiness is a better method for alerting the driver than automatic sleepiness detectors in the

but are more liable to result in death and serious injury owing to the relatively high speed of the vehicles on impact.^{1,2} Apart from the human misery caused, the financial cost of these accidents can be considerable,^{3,4} especially if lorries are involved. Many SRVAs occur while the drivers are at work^{4,5}—for example, driving company cars⁶ or lorries.⁷ Night work makes drivers particularly vulnerable—such as doctors on call,⁸ and those people driving home in the early morning after night shifts.^{9,10}

In the United Kingdom, fatal road accidents involving lorries, per 100 million vehicle kilometres, is almost double that for cars (averaging 2.1 v 1.1 over the past 5 years¹¹). Many of these deaths are of car drivers and passengers after impact by the lorry. However, the extent to which these accidents are SRVAs is still not clear (see later). In the United States, the Department of Transportation now considers that there is a high likelihood that every lorry will be involved in at least one sleep related crash during the lifetime of the vehicle.¹² Present European legislation (and United Kingdom law) prescribes that within any 6 day period a lorry driver can drive up to 56 hours (with prescribed breaks and rest periods, see later). If hours on duty are included (waiting in

Søvn-underskudd gir stor økning i trafikkrisiko

Er det ansvarlig å sette opp en skiftplan uten å ta hensyn til transport mellom arbeidssted og hjemmet?



40 prosent av deltagerne i det nye forskningsprosjektet havnet i en nestenulykke. (Foto: Shutterstock)

Så farlig er det å kjøre etter nattarbeid

En stor andel av deltagerne i forskningsprosjektet opplevde nesten-krasj.



Lasse Bjørnstad
journalist



Publisert i går, kl. 5.00

Nattarbeid har et dårlig rykte, i hvert fall ifølge forskningen på temaet. En dansk studie viste at det kan ta flere dager å komme seg etter en våkenatt, og effektene kan ligne på bakrus.

Nattarbeid kan også øke risikoen for brystkreft, i hvert fall for kvinner som jobber store deler av livet sitt om natten.

ANNONSE



Ledige stillinger



Kunnskap Oslo
premierer
**Oslo-
forskning**

Vi er opptatt av
biltrafikk og rus, men
mangler å ta hensyn til
trøtthet og bilkjøring

Klinikk og vitenskap

P-O Haraldsson, docent, institutionen för öron-, näs- och halssjukdomar, Karolinska institutet (*per-olle.haraldsson@ks.se*) eller (*po@haraldsson.nu*)

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Vakenhetsstörning – en större trafikfara än alkohol

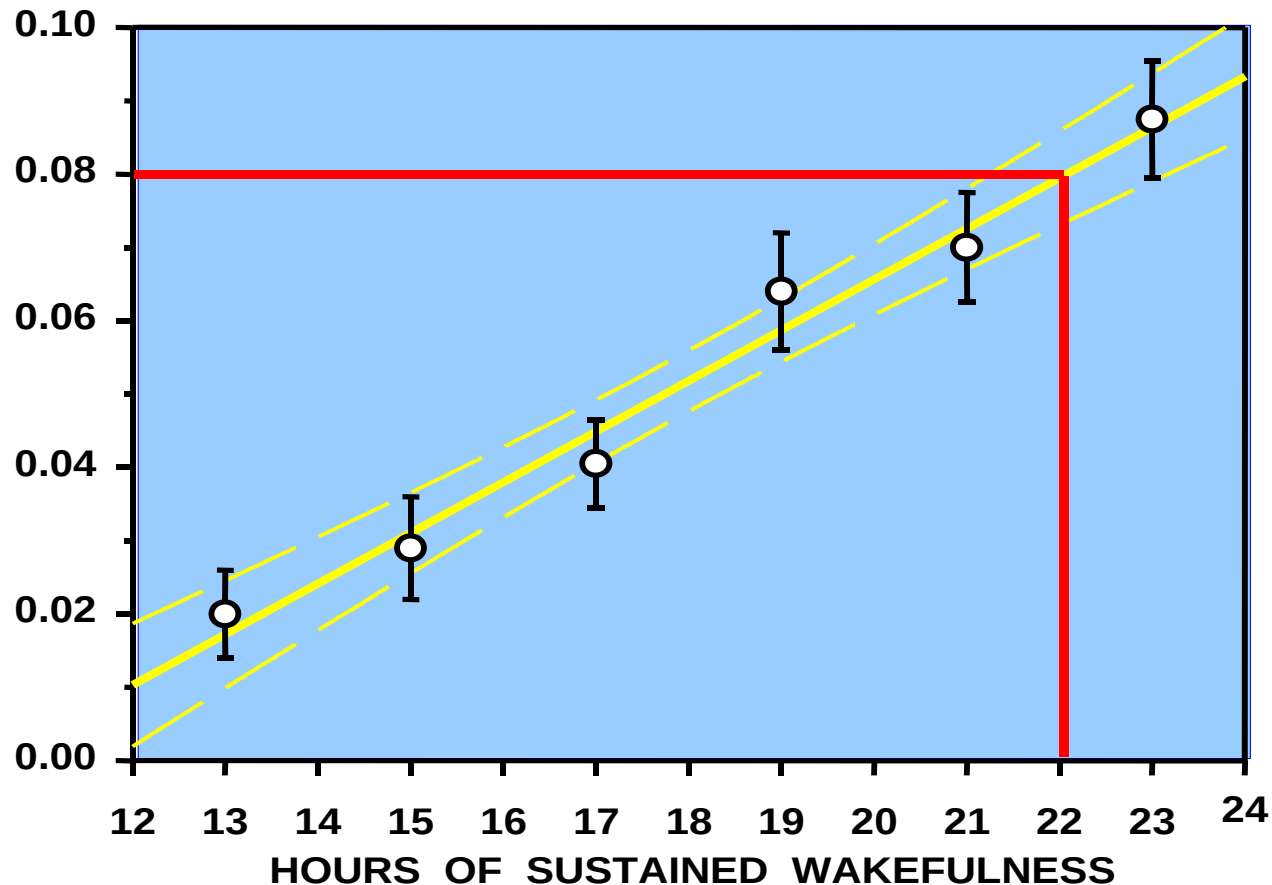
Orsaker, risiko og behandling

I Västerlänningen sover allt mindre. Nattvilan är nu en till två timmar kortare än vid förra sekelskiftet. Datatekniken har suddat ut gränserna mellan arbeid og fritid, dag og natt, og tidzoner. Globalisering og anpassning till de internationella marknadskräfterna utsätter många för en press som tenderar att tynas den mänskliga organismens ritm. Vaken

SAMMANFATTAT

Vakenhetsstörning kan bero på sömndeprivation, ständigt dygnens, som vid skiftarbete/et i.a. mentala

Naturlov; Mangel på søvn kan gi reaksjonsmønstre som kan sammenlignes med alkoholpåvirkning. Slike reaksjoner er ikke viljestyrte (holdningsbaserte)



Adapted from Dawson and Reid, 1997

Lov om vegtrafikk Kap. IV. Fører av kjøretøy m.m.

- **§ 21. Alminnelige plikter.**
- Ingen må føre eller forsøke å føre kjøretøy når han er i en slik tilstand at han ikke kan anses skikket til å kjøre på trygg måte, hva enten dette har sin årsak i at han er påvirket av alkohol eller annet berusende eller bedøvende middel, eller i at han er syk, svekket, sliten eller trett, eller skyldes andre omstendigheter.

10 måneders fengsel for sovning ved rattet

1991-05-31. . Norges Høyesterett - dom.

Kilde: Rettsavgjørelser > Høyesterett

Gyldendal Rettsdata | www.rechtsdata.no | Skrevet ut 05-02-2013



1991-05-31. . Norges Høyesterett - dom.

Stikkord: Uaktsomt drap ved bilkjøring. Straffutmåling.

Sammendrag: 22-årig, tidligere bøtelagt mann ble i byretten idømt ubetinget fengsel i ett år og to måneder for overtredelse av strl. [§ 239](#) og vegtrafikkloven §§ [3](#) og [21](#), [1.](#) ledd. Domfelte som ikke hadde sovet om natten kjørte bil etter arbeidstidens slutt den påfølgende ettermiddag. Han sovnet ved rattet, og i en svak høyrekurve kom bilen over i motsatt kjørebane og kolliderte med to møtende biler. Føreren av den siste bilen døde umiddelbart. Etter domfeltes anke ble straffen redusert til ubetinget fengsel i 10 måneder under henvisning til det nivå som har dannet seg for overtredelse av strl. [§ 239](#) etter lovendringen av 8. juli 1988.

Dom 31. mai 1991 i l.nr. 82/1991.

Arbeidsmiljøloven §1

- § 1-1. Lovens formål
- a) å sikre et arbeidsmiljø som gir grunnlag for en helsefremmende og meningsfylt arbeidssituasjon, som gir full trygghet mot fysiske og psykiske skadevirkninger, og med en velferdsmessig standard som til enhver tid er i samsvar med den teknologiske og sosiale utvikling i samfunnet,
- b) å sikre trygge ansettelsesforhold og likebehandling i arbeidslivet,
- c) å legge til rette for tilpasninger i arbeidsforholdet knyttet til den enkelte arbeidstakers forutsetninger og livssituasjon,
- d) å gi grunnlag for at arbeidsgiver og arbeidstakerne i virksomhetene selv kan ivareta og utvikle sitt arbeidsmiljø i samarbeid med arbeidslivets parter og med nødvendig veiledning og kontroll fra offentlig myndighet,
- e) å bidra til et inkluderende arbeidsliv.

I vår industri har det så langt vært lettere å snakke om for mye restitusjon (for mye fritid), enn helse- og sikkerhetsrisiko fra trøtthet (fatigue) i arbeid og avspaseringsperioder



For mye restitusjon? «feriegroggy»



2-4-ORDNINGEN PÅ SOKKELEN

I dag har de åtte måneder fri i året. Det kan det bli slutt på

Hageringen måler støy av rapportert støy og tilbake til oljearbeidernes friperioder.

Av: Peder Gunde @petroleum.no - Lars Tønnessen @LarsTønnessen

feriegroggy

- Som en sommerferie

Oskar Grimstad, som er en av Fremskrittspartiets to representanter i energi- og miljøkomiteen på Stortinget, sier at det er liten tvil om at rotasjonsordningen på norsk sokkel er en viktig del av kostnadsbildet.

Han mener friperioden er sammenlignbar med en sommerferie.

– Jeg har hørt at det på plattformer ved turnusskifte, oppleves som å få folk tilbake fra sommerferie. Jeg mener dette er sammenlignbart, og tror nok at man kan være litt feriegroggy når man går på igjen, sier Grimstad.

Dette vil i så fall si at offshore-arbeidere med 2-4-rotasjon vil ha omkring åtte sommerferier i året.

Grimstad understreker at han på nåværende tidspunkt ikke kan utelukke at man vil se nærmere på 2-4-ordningen. Men dette må i så fall gjøres i samarbeid med fagforeninger, mener han.

– På det vurderingsstadiet vi er i nå, vil jeg ikke utelukke at man går inn og ser på denne ordningen. Men det må være i nær dialog med fagforeninger, sier Grimstad til Teknisk Ukeblad.

– Når vi ser på britisk sokkel og norsk sokkel, er det liten tvil om at dette er en av de tunge faktorene som gjør at vi har det kostnadsnivået vi har, sier han.

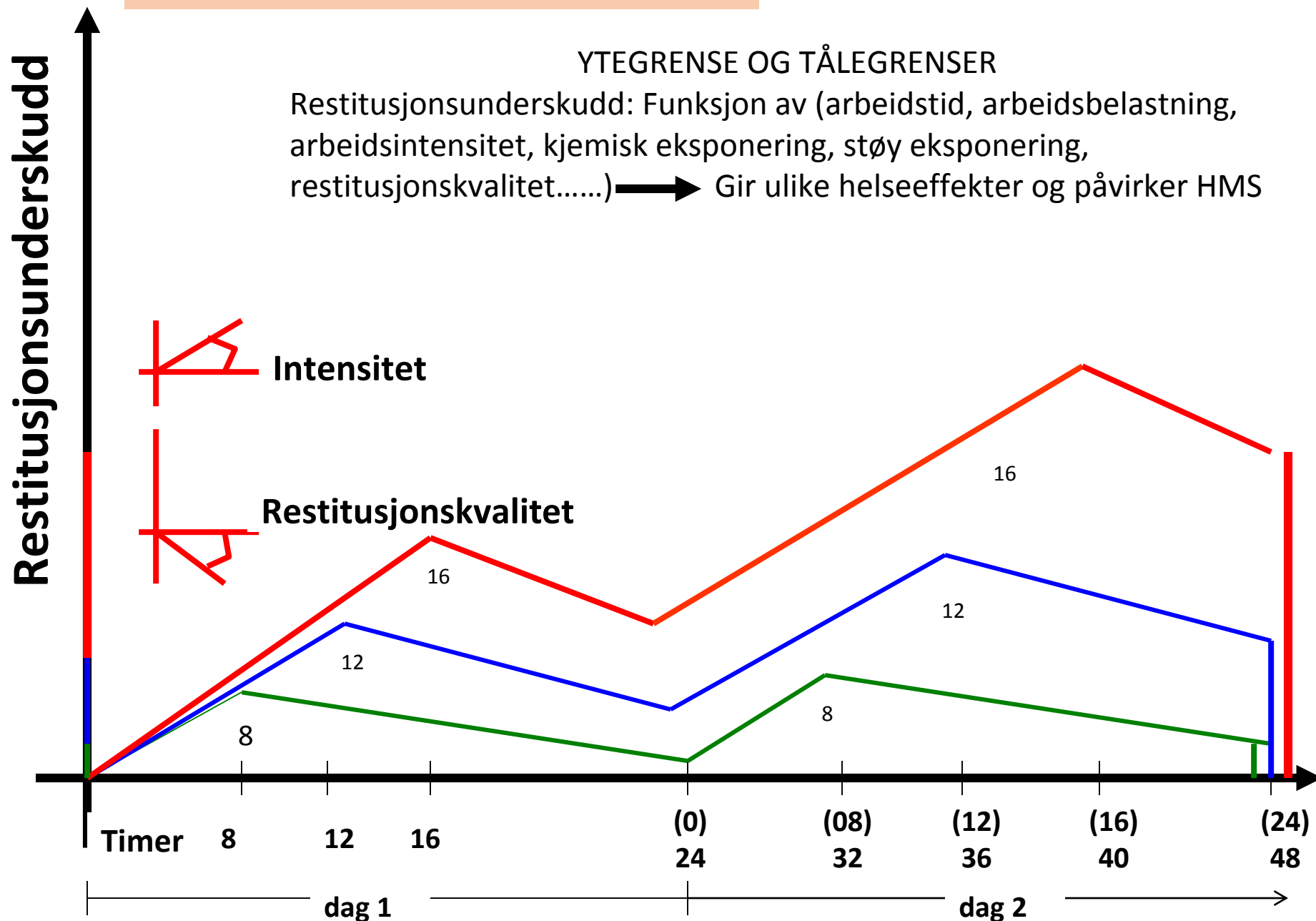
På spørsmål om han personlig, og isolert sett, skulle ønske det ble gjort noe med ordningen, vil han ikke være kontant.

– Jeg har både naboer og venner som jobber slik, og skal være forsiktig med å uttale meg for mye om dette, sier Grimstad.

VURDERING AV BELASTNING

YTEGRENSE OG TÅLEGRENSER

Restitusjonsunderskudd: Funksjon av (arbeidstid, arbeidsbelastning, arbeidsintensitet, kjemisk eksponering, støy eksponering, restitusjonskvalitet.....) → Gir ulike helseeffekter og påvirker HMS



Microsleep (mikrosøvn)

automotive
FLEET THE CAR AND TRUCK FLEET AND LEASING
MANAGEMENT MAGAZINE

SEARCH

Leasing Safety Remarketing Fuel Uplifting Global Green Fleet Telematics Operations Maintenance Vans Vehicle Research

Safety & Accident

Drowsy Driving and the Risk of Microsleep

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Sleepy Drivers Can Dose Unknowingly



Posted on February 10, 2014 | 2969 views

Drowsy driving is the second leading cause of fatal crashes. Still, many drivers get behind the wheel when they're feeling fatigued. Here is a report on the dangers of drowsy driving from ABC News' Nightline. For tips on how to improve your sleep hygiene, [click here](#).

Tags:

Drowsy Driving

PROOF WHEN IT'S
NEEDED MOST.
LEARN HOW TECHNOLOGY
SAVES LIVES AND MONEY >



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Microsleeps are brief, unintended episodes of loss of attention associated with events such as blank stare, head snapping, and prolonged eye closure which may occur when a person is fatigued but trying to stay awake to perform a monotonous task like driving a car or watching a computer screen.

<http://www.sleepdex.org/microsleep.htm>

Bilførere oppfordres til å ta en høneblund, dupp, power nap, nøkkelknippe søvn, MEN: få norske bedrifter har lagt til rette for dette tiltaket

The screenshot shows the website of Statens vegvesen (Norwegian Road Directorate). The main navigation bar includes links to Hovedside, Trafikkinformasjon, Kjøretøy, Feriekort, Vegprosjekter, Fag, Jobb, and Om Statens vegvesen. The page title is 'Trafikkinformasjon'. The main content area is titled 'Statens vegvesens Stopp og sov-kampanje'. It features a large red heart graphic with the number '15' inside, surrounded by the text 'Søvnig bak rattet?' and 'Stopp og sov i 15 minutter'. The text on the page explains that sleepy drivers try various tricks to stay awake, but the best solution is to stop and sleep for 15 minutes. A sidebar on the left lists various topics related to the campaign, and a sidebar on the right suggests related content.

Statens vegvesen

Trafikkinformasjon

Hovedside Trafikkinformasjon Kjøretøy Feriekort Vegprosjekter Fag Jobb Om Statens vegvesen

Hovedside / Trafikkinformasjon / Trafikksikkerhets-kampanjer / Stopp og sov

Lytt til teksten Skriv ut

Statens vegvesens Stopp og sov-kampanje

Søvnige bilister prøver mange knep for å holde seg våkne bak rattet. De holder hodet ut av vinduet, kjører fortere, spiller høy musikk eller bruker andre triks, som ikke virker fordi man fort blir like trøtt igjen.

Det eneste som hjelper er å stoppe og sove! En 15 minutters "powernap" er nok til at kroppen henter seg inn igjen slik at du kan kjøre videre en stund til før neste hvil.

15

Søvnig bak rattet? Stopp og sov i 15 minutter

Les også

- Heder og ære til Stopp og sov-film
- En av fire stopper og sover
- Omfattende utbygging av hvileplasser for tungtransport
- Menn sovner oftest bak rattet

Start





Waking up to the effects of fatigue ***An interview with Drew Dawson***



Dr Drew Dawson
Director of the Centre
for Sleep Research

Dr Drew Dawson is Dean of Research in the Division of Education Arts and Social Sciences, Professor of Psychology at the University of South Australia and Director of the internationally recognized Centre for Sleep Research, Australia's largest sleep research facility. An international authority in sleep, fatigue, biological rhythms and hours of work, he has worked extensively with key rail, road and aviation organizations around the world. Drew has helped develop policy for some of the world's largest transport networks. He has produced over 60 industry reports, published nearly 200 articles and papers and attracted over \$8M (AU) in research grants. Drew has been a consultant to over 100 major Australian companies such as BHP and Qantas.

Can you describe fatigue?

The fatigue we research is what most people understand as sleepiness, or lack of alertness. Some confuse this with physical fatigue (physical exhaustion), or the medical fatigue of conditions such as chronic fatigue syndrome or fibromyalgia. It is a difficult term because it means many things to many people. The fatigue that we are particularly interested in is primarily thought of as sleepiness.

What causes this type of fatigue?

There are several causes of sleepiness, such as lack of sleep or excessive wakefulness. It can arise from: reduced sleep efficiency associated with conditions such as sleep apnea; type 2 diabetes; or a neurological condition. Certain drugs increase sleepiness.

What about stress?

Stress can indirectly contribute to sleepiness by interrupting sleep. Stressed people tend to sleep less well and therefore tend to be sleepier, but typically the direct experience of stress is to make you alert rather than sleepy.

What are the symptoms of fatigue?

The effects are on three broad levels—physical, mental function and emotional.

Physical effects include yawning, rubbing eyes, slumped posture and increased likelihood of falling asleep.

The effect on mental function is to slow responses, so people take longer to do mental work and are more likely to make mistakes. They experience cognitive disengagement (engaging less with cognitive tasks) which increases the frequency of certain types of errors.

Emotionally, people become grumpy and unaffectionate. They are typically irritable, short-tempered, terse and uncommunicative.

Who is prone to becoming fatigued?

People who don't get enough sleep or whose sleep is disrupted will become fatigued—people with sleep apnea are a good example. People who are taking certain medication or have other medical complications also experience fatigue.

There are times in our lives when the need for sleep increases. Examples are children undergoing the growth spurt at puberty, and women after they give birth, particularly during breastfeeding. There are significant emotional and physical demands on a new mother, so they need more sleep. Our studies indicate the amount of sleep loss experienced by new mothers is not as much as everyone believes, but their need for sleep increases quite significantly. We now believe that continual tiredness is a combination of a slight decrease in the amount of actual sleep, and a significant increase in the amount of required sleep.

What are some of the impacts or effects of fatigue?

The mental effect of fatigue is to impair people's thought processes. They are more inclined to make errors or use poor judgment, increasing the likelihood of mistakes, accidents and incidents. Tired people put themselves and others at risk. On a personal level, fatigue reduces libido.

New literature suggests sleep disruption and sleep loss impair carbohydrate metabolism and exacerbate the weight gain associated with type 2 diabetes. This increases the likelihood of sleep apnea, which decreases sleep quality—a vicious cycle. There is some indication that sleep loss has long-term impacts on immune function, susceptibility to infections or illness and

Professor Drew Dawson er sammen med den svenske professoren Torbjørn Åkerstedt en av de mest anerkjente forskerne som har sett på helse- og sikkerhetsmessige konsekvenser av skiftarbeid. De jobber også med å finne systemer som reduserer risiko

Fatigue Risk Management

**A safety management
systems approach**



Professor Drew Dawson

**Criterion Conferences
February, 2012**

Managing Fatigue-related Risk: A Safety Management Systems Approach

Drew Dawson
Centre for Sleep Research
University of South Australia





COVER STORY

DEAD TIRED

How you can win the war against fatigue.

ON 14 JUNE 2001, just north of Albany on the Hume Highway, a convoy of six semi-trailers was involved in an accident that scattered wreckage over 200 metres and closed the highway for hours.

The convoy was "slipstreaming", a common practice in motor racing and trucking, which involves the lead vehicle effectively teasing those behind in its wake. The Transport Workers Union claimed the practice was used to save fuel and even to keep the vehicles going if the driver fell asleep. It was just one example, they said, of the measures drivers must take to meet unrealistic deadlines.

Extraordinarily, no one was killed, but the message is clear: the commercial pressures on drivers often outstrip their all-too-human limitations, and the resulting fatigue presents an enormous threat to safety.

For the aviation industry, the threat of fatigue is just as real, but the consequences of fatigue-induced errors are far greater.

Regulations: Originally drafted in 1953, Civil Aviation Order (CAO) 68 was designed to provide limitations on flight and duty times in an effort to minimise fatigue.

However, many operators argued CAO 68 placed unfair restrictions on their businesses and did not reflect changes to the aviation industry including longer flight sectors and increased numbers of transmeridian flights. Through industry consultation, a set of standard exemptions were provided on a trial basis. Some continued to argue these were insufficient, and over time non-standard exemptions were approved, allowing duty times to be lengthened.

As CASA continues to reform its regulations, and as new research on the dangers of fatigue

comes to light, significant changes have been made to the way CAO 68 is administered. An operator who wants to work outside the limits of CAO 68 must now introduce a fatigue management system and demonstrate that the safety of their operation will not suffer.

Obviously, the long hours associated with aviation cannot be completely eliminated, particularly with flight and cabin crews facing the introduction of ultra-long-haul routes in the near future. A shortage of skilled labour and the move to permanent night shifts place maintenance personnel under similar pressures, increasing the chance that human error in the hangar could cause an accident.

Preventing fatigue from affecting safety is the responsibility of both the employer and employees under Occupational Health and Safety (OH&S) legislation, and can be readily achieved through the use of an effective fatigue management system.

Administered correctly, such a system can improve productivity, morale, absenteeism, safety, and the bottom line.

Fatigue management: A fatigue management system is a comprehensive set of procedures and work practices designed to reduce fatigue and mitigate its effects on safety and performance.

CASA can be contacted for assistance in drafting your fatigue management system, but as a guide here are some of the points you will need to consider.

Seven major domains should be addressed in an integrated program to manage fatigue in operational settings:

- Management commitment.
- Hazard identification and defences.
- Restors.

- Education.
- Fatigue measurement and consultation.
- Review.
- Contingency plans.

Management commitment: In many organisations excessive fatigue is regarded as a badge of honour. Staff are rewarded for "putting in extra hours" and punished for admitting to being tired.

The first step in implementing any fatigue management system is reversing this culture. This change must come from senior management.

If staff perceive that senior managers are not serious about fatigue management this will filter down through the organisation very quickly. If a fatigue management system is introduced simply to gain an exemption from CAO 68 it will fail.

There are numerous reasons for management to embrace a fatigue management system. Fatigue reduces vigilance, and impairs judgement and communication. It therefore reduces productivity and increases the probability of errors that could lead to incidents or accidents. For these reasons alone fatigue management systems offer significant benefits to shareholders and management.

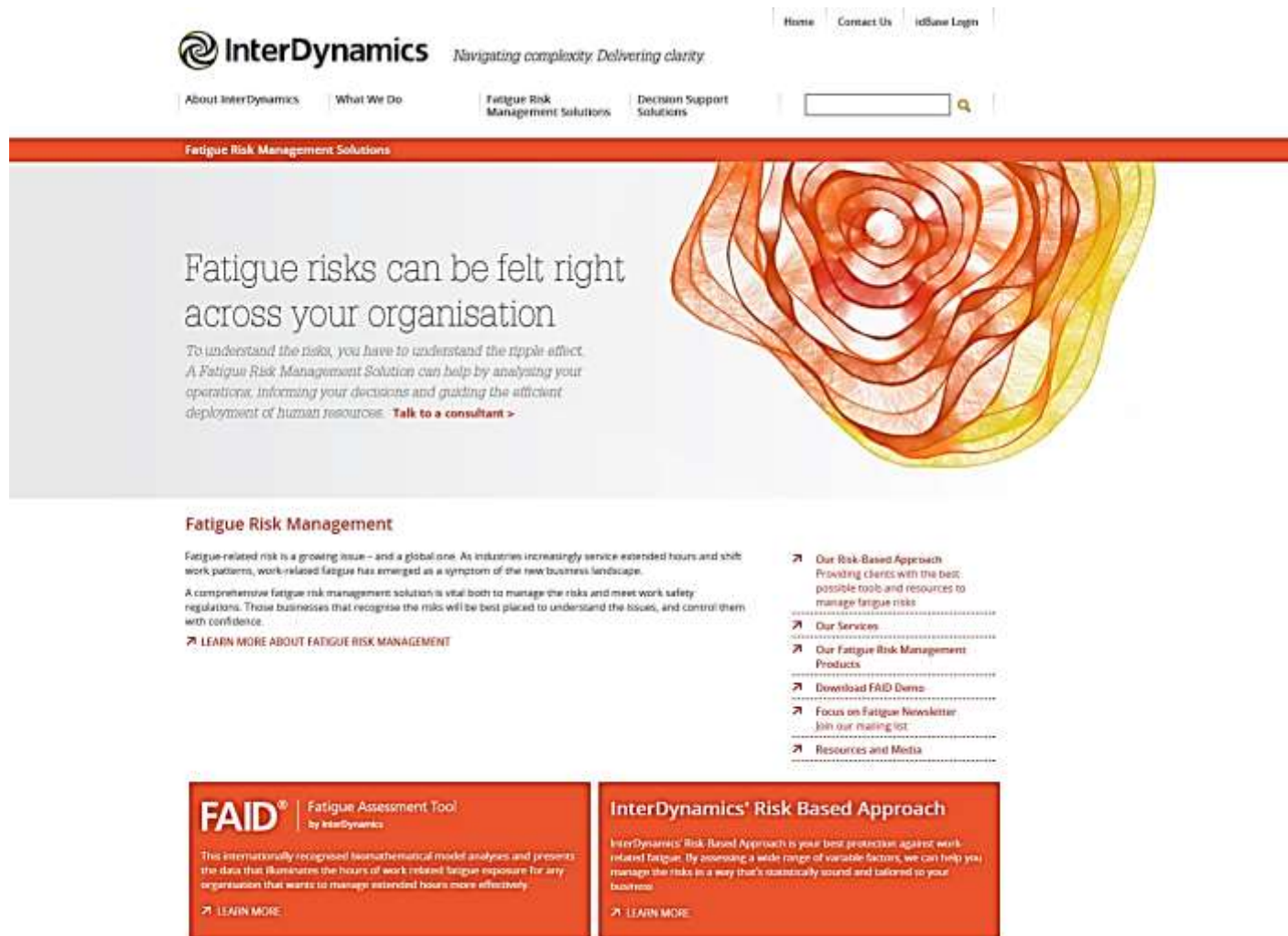
Staff must be encouraged to report events where fatigue has adversely affected performance.

Also, it should be made clear that deliberate breaches of the company's fatigue policy will be treated in the same way as any other deliberate violation.

Hazard identification and defences: It is important to identify and address those areas of your operations where fatigue is most likely to have a negative impact on safety. Things to

Omtale av fatigue management program som beregner kritiske fatigue prioder

Eksempel på dataverktøy for fatigue management



The screenshot displays the InterDynamics website's 'Fatigue Risk Management Solutions' page. The header includes the InterDynamics logo with the tagline 'Navigating complexity. Delivering clarity.' and navigation links for Home, Contact Us, and idBase Login. A secondary navigation bar lists 'About InterDynamics', 'What We Do', 'Fatigue Risk Management Solutions', and 'Decision Support Solutions', accompanied by a search bar. The main content area features a large graphic of concentric, wavy lines in orange and yellow, resembling a ripple effect. The text on this page states: 'Fatigue risks can be felt right across your organisation. To understand the risks, you have to understand the ripple effect. A Fatigue Risk Management Solution can help by analyzing your operations, informing your decisions and guiding the efficient deployment of human resources. [Talk to a consultant >](#)'.

Fatigue Risk Management

Fatigue-related risk is a growing issue – and a global one. As industries increasingly service extended hours and shift work patterns, work-related fatigue has emerged as a symptom of the new business landscape.

A comprehensive fatigue risk management solution is vital both to manage the risks and meet work safety regulations. Those businesses that recognise the risks will be best placed to understand the issues, and control them with confidence.

[➤ LEARN MORE ABOUT FATIGUE RISK MANAGEMENT](#)

- **Our Risk-Based Approach**
Providing clients with the best possible tools and resources to manage fatigue risks
- **Our Services**
- **Our Fatigue Risk Management Products**
- **Download FAID Demo**
- **Focus on Fatigue Newsletter**
Join our mailing list
- **Resources and Media**

FAID® | Fatigue Assessment Tool
by InterDynamics

This internationally recognised biomechanical model analyses and presents the data that illuminates the hours of work related fatigue exposure for any organisation that wants to manage extended hours more effectively.

[➤ LEARN MORE](#)

InterDynamics' Risk Based Approach

InterDynamics' Risk Based Approach is your best protection against work-related fatigue. By assessing a wide range of variable factors, we can help you manage the risks in a way that's statistically sound and tailored to your business.

[➤ LEARN MORE](#)

Pilot fatigue 'one of the biggest threats to air safety'

By Keith Moore
BBC News

11 October 2012 | Health



It was a cold winter night on 12 February 2009 when Continental flight 3407 took off from Liberty International Airport in Newark, New Jersey, on what should have been a fairly routine flight.

But five miles north-west of its intended destination in Buffalo, New York, the plane stalled before plunging into a house below, killing both the pilots, as well as two flight attendants, all 45 passengers and a man on the ground.

The pilots had failed to properly respond to cockpit warnings that the plane was moving too slowly through the air, with captain Martin Renslow raising the plane's nose, slowing it even further.

Nyttig
artikkel om
trøtthet og
sikkerhet i
luftfarten

<http://www.bbc.com/news/health-19837178>



CASA Safety Video - Importance of fatigue management

OVERVIEW CASABriefing

<https://www.youtube.com/watch?v=ELkJcp1CuYQ>



Europeisk
kampanje for
håndtering av
fatigue blant
piloter

Dead-Tired.eu

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Pilot Fatigue

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Pictures

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The EU has scientific evidence showing that its current pilot fatigue law is potentially unsafe.

Yet this evidence is **not reflected** in the proposal for new EU flight time limits for pilots and cabin crew, issued on 25 July 2013 by the European Commission. Instead, the proposal reflects the **commercial interest** of airlines which lobbied strongly for lax fatigue rules.

If not changed, the new rules will reduce safety levels in several EU countries, e.g. by **allowing a pilot to land a plane after having been awake for over 22 hours**.

The EU Parliament must stop this. MEPs must request the Commission to change its proposal, base it on scientific evidence and **make your safety as a passenger their Number One Priority!**



ECA
Piloting Safety



3.5k

About Pilot Fatigue

The Problem

EU fails to protect your safety as a passenger

The Facts

Fatal accidents show a tired pilot can be dangerous. Yet, fatigue is a reality today.

The Solution

Science-based EU rules can make flying safer. What's holding up the EU?

[Read more](#)

Safety Petition

More than **114 000** have supported our call for safe flight duty times. Join us!



Latest News

- 11/10/2013 - Flight Safety Compromised
- 07/10/2013 - Pilots respond to EU Commission statement on Flight Times
- 30/09/2013 - Breakthrough for aviation safety: EU Parliament rejects flawed flight time rules

[See all news](#)

[Stay updated on pilot fatigue](#)

<http://dead-tired.eu/>



Pilot Fatigue

Pilot + Fatigue = Danger

It is no longer questioned that pilot fatigue is a threat to flight safety.

A tired pilot is a dangerous pilot, as many accidents have shown.

Ever since the 1944 Chicago Convention, it is recognised that fatigue (due to long duty hours, insufficient rest/sleep opportunities etc.) can pose a risk to the safety of air operations. The best way to limit this risk is by adequate Flight Time Limitations.

Reality is, however, that authorities often need a fatal wake-up call before they introduce adequate FTL rules. In the USA, it wasn't until after the 2009 crash of a Colgan Air plane that the issue of pilot fatigue came under scrutiny and new safety rules were adopted.

Fatigue reduces the physical and mental ability to operate safely. A fatigued person may lose 80% of his/her attention capabilities and 70% of responsiveness. It is estimated that pilot fatigue contributes to 15-20% of all fatal air accidents related to human error. It is precisely at the moment when most people would feel 'dead tired' at the end of a long working day, that pilots must be fully alert to make critical decisions, concentrate and ensure a safe landing.

Scientists have warned that effects of severe fatigue are comparable to those provoked by alcohol. However, whilst alcohol is forbidden in transport, **fatigue in the cockpit is tolerated.**

Fatigue is already a reality in Europe's cockpits today. Surveys among pilots show that 71-90% of pilots said they made errors due to fatigue, with 50-54% saying they dozed off in the cockpit without notifying their colleague.

In May 2012, an Air Berlin plane requested an emergency landing in Munich, due to the pilots being severely fatigued. In 2007, an aircraft with 288 passengers on board comes off the runway in Iceland when landing. The investigation shows: fatigue was to blame.

This is why Europe needs strict, scientifically based rules to prevent fatigue from posing a risk to the safety of passengers, crew and people living under the flight-paths.

Downloads

News

Videos

About Pilot Fatigue

The Problem

[Fatigue in the Cockpit](#)

The Facts

[Pilot + Fatigue = Danger](#)

[What is Fatigue?](#)

[Why is Fatigue a Threat to Safety?](#)

[Surveys on Pilot Fatigue](#)

[Accidents Involving Fatigue](#)

[Scientific Evidence](#)

The Solution

[Science-based rules](#)

Pilot Fatigue

'Pilot Fatigue' is the story of the multi billion dollar global aviation industry transporting people around the world 24 hours every day. There is a very real and growing problem of pilot fatigue along with the all too real consequences when something does go wrong.

'Pilot Fatigue' explores the lives and hidden pressures of today's commercial airline pilots and looks at the industry's conflicting responses to an issue which if ignored can ultimately lead to catastrophic consequences that could affect anyone travelling by air today. The continued growth of the aviation industry to meet the demands of 21st century air travel cannot afford to ignore when a pilot is too tired to fly, make decisions and land your plane. While pilots globally are speaking out and demanding change, many in industry cannot see a problem. The consequences of disregarding this problem cannot be ignored.

Through unique interviews in the aviation industry and other safety critical industries like Nuclear and ATC; high quality 3D animation and archive footage, 'Pilot Fatigue' reveals the facts everyone should know. 'Pilot Fatigue' lets you relive the consequences of a flight that was impacted by pilot fatigue. An experience you will never forget.

Watch the trailer

Buy the DVD



Svært bra dokumentar som viser konsekvenser av fatigue i luftfarten

<http://www.factnotfictionfilms.com/documentary-films/pilot-fatigue/>

Systemer for håndtering av fatigue – Fatigue risk management

Application of fatigue management systems: small mines and low technology solutions

by B.M. Eiter, L. Steiner and A. Kelhart

Abstract The impact of fatigue is seen not only in its effect on job performance of haul truck operators but also on the health of the operator and the productivity at the mine site. Its impact can even extend outside of the mine site to the health and well-being of the surrounding community (Fourie et al., 2010). In this paper, a case study of a small surface mining organization is presented. The goal is to highlight the fatigue risk management system implemented at the studied mine site. Mine safety personnel who were interviewed discuss the changes made to the infrastructure of the mine, to administrative areas such as the number of shifts and the use of vacation time, as well as the implementation of new technology into haulage vehicles. This paper reviews how these changes are supported in the research literature.

Introduction

Historically, mining has been one of the most hazardous work environments around the world. The number of fatal and nonfatal injuries is especially high for those in positions working in and around trucks. Md-Nor et al. (2008) reported 516 fatal injuries in the United States between 1995 and 2006 attributed to the general category of equipment. Of those fatal injuries, 113 (21.8%) were truck-related. A more recent review of data from the U.S.



Mine Safety and Health Administration (MSHA, 2010) by Sun et al. (2010) reveals an additional 15 fatal injuries attributed to trucks from 2007 to 2009. There are many factors that contribute to the number of haul truck-related fatal and nonfatal injuries; some of these factors include lack of visibility, road conditions, truck driver behavior and operational conditions, as well as weather conditions (Groves et al., 2007). While the causes for truck related incidents and accidents can rarely be attributed to a single factor, they often involve a significant human performance component (Patterson and Shappell, 2010; Randolph, 1998). Driver fatigue, in particular, has been identified as a major factor contributing to crashes in haul truck traffic (Orchansky et al., 2010; Santos et al., 2010; Schutte and Maldonado, 2003).

One way to define fatigue is as the transitory period between awake and asleep; if fatigue goes uninterrupted, it can lead to sleep (Lal and Craig, 2001). A number of factors contribute to fatigue, including the amount and quality of sleep (Stutts et al., 2003), the disruption of circadian rhythms (Akerstedt

and Wright, 2009) and sleep-related disorders (Connor et al., 2001). Driving for prolonged periods of time can also result in impaired concentration and reduced alertness, feelings of fatigue or drowsiness, and longer reaction time (Hakkanen and Summala, 2001; McDonald, 1984). As a consequence, drivers fall asleep with some regularity during a work shift, especially during the late night/early morning hours (Mitler et al., 1997).

The effect of fatigue extends beyond the driving behavior of the operator into areas such as the health and well-being of the operator and the functionality of the mining organization, as well as the productivity of the surrounding community (Fourie et al., 2010). Chronic sleep loss has been identified as a contributing factor to several health-related issues, including obesity and diabetes (Knutson and Van Cauter, 2003) and gastrointestinal problems (Monk and Folkard, 1992). Organizations with overly fatigued mine employees can be affected by reduced productivity and morale and may even see an increase in accident rates (Dawson et al., 2000). Fatigue can also

The International Association of Oil & Gas Producers (IOGP) - Norsk olje og gass er tilsluttet IOGP



Managing fatigue in the workplace

*A guide for oil and gas industry
supervisors and occupational
health practitioners*



<http://www.ogp.org.uk/pubs/392.pdf>

Managing fatigue using a fatigue risk management plan (FRMP)

ENERGY Institute
har utviklet Fatigue
Management Risk
Management Plan
(FMRP) for
oljeindustrien



FOREWORD

Employee fatigue can present risks to health, safety and productivity. In 2006, the Energy Institute's (EI) Human and organisational factors committee (HOFCOM) developed and published *Improving alertness through effective fatigue management*, which explored strategies to manage fatigue. Traditional strategies for managing fatigue, such as limits on hours of work or fatigue awareness training, are – if used in isolation – now recognised as providing limited protection against fatigue risk. Consequently, many stakeholders now recommend a more comprehensive approach to fatigue management. This approach involves the implementation of a fatigue risk management plan (FRMP), which manages fatigue in a risk-based and systematic manner, and fosters shared responsibility between the organisation and its employees.

Reflecting current good practice, *Managing fatigue using a fatigue risk management plan (FRMP)* (1st edition) supersedes *Improving alertness through effective fatigue management*, and:

- Provides a source of reference for site-level managers directly responsible for managing fatigue in the energy and allied industries.
- Defines and describes the general elements that can be expected in an FRMP that complies with industry good practice.
- Provides managers with practical step-by-step guidance on how to build, implement and maintain an FRMP.

Managing fatigue using a fatigue risk management plan (FRMP) is composed of two parts. Part I provides introductory information on the causes of fatigue and its management. Part II provides guidance to managers on the design and implementation of an FRMP. A number of supporting resources are provided in the annexes.

This guidance is particularly directed at organisations that are in the early stages of FRMP implementation. However, operators who already have an FRMP in place should also find the document useful as a summary of good practice against which to compare their existing FRMP. The document is relevant for all major hazard industries, including onshore and offshore operations. Due to the nature of offshore work, where practical, additional guidance for offshore and remote operations has been provided.

The information contained in this document is provided for general information purposes only. Whilst the EI and the contributors have applied reasonable care in developing this publication, no representations or warranties, expressed or implied, are made by the EI or any of the contributors concerning the applicability, suitability, accuracy or completeness of the information contained herein and the EI and the contributors accept no responsibility whatsoever for the use of this information. Neither the EI nor any of the contributors shall be liable in any way for any liability, loss, cost or damage incurred as a result of the receipt or use of the information contained herein.

The EI welcomes feedback on its publications. Feedback or suggested revisions should be submitted to:

Technical Department
Energy Institute
61 New Cavendish Street
London, W1G 7AR
e: technical@energyinst.org

De fleste oljeselskapene har bidratt til utviklingen av Fatigue Risk Management Plan (FRMP).

For further information, please visit <http://www.energyinst.org>

The EI gratefully acknowledges the financial contributions towards the scientific and technical programme from the following companies

BG Group
BP Exploration Operating Co Ltd
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Performance indicators for fatigue risk management systems

Guidance document for the oil and gas industry

Health
2012



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Publication type:



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Performance indicators for fatigue risk management systems

March 2013

This IPIECA-OGP Health Committee publication provides an approach to developing performance indicators for a fatigue risk management system (FRMS). Historically, the risk associated with fatigue was largely managed by limiting the number of hours worked. However, there is increasing understanding that hours-of-service limits by themselves may not achieve the objective of managing risk from fatigue. This, together with the restrictive impact on operations, has led industry and regulators to move away from using rules based solely on hours of work, and instead adopt a more comprehensive style of fatigue risk management using fatigue risk management systems (FRMS). This document contains proposals for possible performance indicators that could be used to monitor the effectiveness of an FRMS.

[Download PDF \(English, 740.5 KB\)](#)

Categories: [Good practice](#) [Health](#) [English](#)



Rail Safety and Standards Board (RSSB)

Introduction

1.1 Purpose of document

RSSB have published this good practice guide to assist industry stakeholders understand and comply with their duties under the 'Railways and Other Guided Transport Systems (Safety) Regulations 2006' (as amended) (ROGS) [1] - 'Regulation 25 – Fatigue'. This document complements guidance produced by the Office of Rail Regulation (ORR) on 'Managing Rail Staff Fatigue' (2011) [2].

The intention of this guide is to offer infrastructure managers (IMs) and railway undertakings (RUs) a practical illustration of how fatigue risks can be systematically managed to improve the health and safety of the workforce and therefore operations. It sets out the key elements of effective fatigue management and illustrates how these can be incorporated into a company's overarching safety management system. This will assist in reducing the costs associated with accidents and injuries, sickness, absenteeism and turnover due to poor fatigue management and to satisfy a company's duty of care to its employees and the public.

The information in this document is intended as guidance only. It is based on a variety of sources. These include railway-specific documents (eg accident investigations); Health and Safety Executive (HSE) human factors audit reports; aviation, road transport, maritime industry publications and RSSB fatigue research [3,4,5]. The options presented are provided to give a flavour of the variety of approaches available. They are not an exhaustive or validated list; they are simply options for IMs and RUs to consider within the context of different operating environments and existing company fatigue management arrangements.

As future research and information becomes available this good practice guide will be updated accordingly.

Uncontrolled When Printed
Document comes into force 01/09/2012



Managing Fatigue - A Good Practice Guide

Document no. RS/504 Issue 1

September 2012



Towards Global Governance on Fatigue Management in an International Energy Company

Dr Ron McLeod

Global Discipline Lead

Human Factors Engineering

Shell International



ARRIVE ALIVE - DON'T DRIVE WHEN TIRED!

Driver fatigue can be a major factor in road traffic incidents, resulting in an estimated 20% of all road fatalities. Here we share our tips on preventing fatigue from ending your drive prematurely.

It's easy to underestimate the effect fatigue can have on a driver. In fact, according to research driver fatigue is a major contributing factor in up to 20% of all road traffic fatalities - even more than drugs or alcohol.*

The primary cause of fatigue is clear: insufficient sleep - either short-term (less than 5 hours sleep in the last 24 hours) or long-term (less than 12 hours sleep in the last 48 hours and less than 50 hours sleep in the preceding week). Other contributing factors can also include a driver's eating pattern, fitness and general health.

With many hours spent on the road driving long, straight roads at relatively constant speed, safe drivers know to be vigilant for signs of fatigue - especially between 2-5am, and during a 'sleepy dip' around 2pm.

Recognise the warning signs

Drivers suffering from fatigue may begin to exhibit a number of symptoms:

- Poor verbal communication
- Yawning and eye-rubbing
- Irritability
- Low concentration
- Inattention
- Taking shortcuts
- Staring
- Head nodding
- Blinking eyes
- Micro sleeps

Manage your fatigue

There's no shortcut to managing fatigue - rolling down your window and turning up your radio won't keep you focused if you're suffering from fatigue. The only long-term solution is to plan for sufficient sleep - it's recommended to aim for around 7-8 hours of uninterrupted sleep per night for most people.

Cookie Preferences

Aside from ensuring you get a good nights sleep before a long journey, you can reduce the risk of developing fatigue by taking the following precautions:



Clip slide

ROAD SAFETY IN SHELL - JOURNEY TO GOAL ZERO



MIKE WATSON

SHELL GLOBAL ROAD SAFETY MANAGER

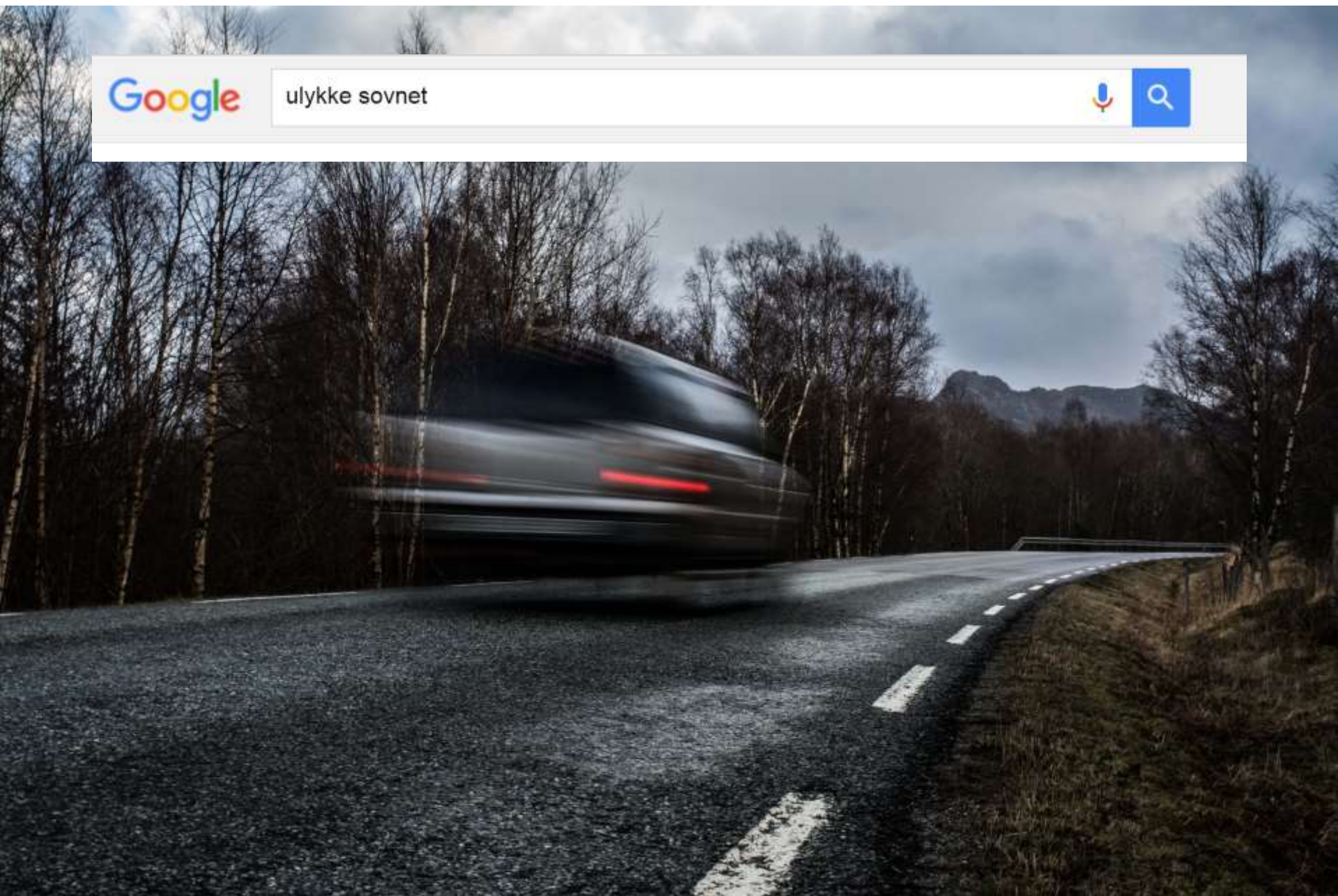


Published on Jan 27, 2012

UNRESTRICTED

Google

ulykke sovnet



fredag 9. november 2012

Ingen kjenner Nittedal og Hakadal bedre...



Siste-artikler

Har du sett denne bilen?
Få nittedaler uten jobb
Pass på mobiltelefonen
Skal gå 250 mil på ski
Nyt snøen!



USIKKRET: Sovner man bak rattet i trafikken, kan det få katastrofale konsekvenser. Noe folk bør tenke mer over, synes lensmannen. (Illustrasjonsfoto: Colourbox.com)

Livsfarlig å sovne bak rattet

Det er ikke bare rus som skaper ulykker i trafikken. To ganger denne uken har Nittedals-politiet fanget opp førere som har sovnet bak rattet.

Av **Kristin Haagenen**

Publisert 01.06.2012 kl. 14:40



Politiet er klar i sin tale: folk er nødt til å våkne opp. For det har vært flere tilfeller der trøtte førere har skapt livsfarlige situasjoner, og dette skjer i Nittedal som andre steder.

– Dette er veldig skummelt, og vi er nødt til å rope varsku. Som bilfører har man et stort ansvar. Man er nødt til å vurdere nøye om man er skikket eller ikke, før man setter seg bak rattet, sier lensmann Bjørn Bratteng ved Nittedal lensmannskontor.

– Det er ikke bare alkohol og andre rusmidler som skaper farlige trafikforhold, legger han til.

Anmeldt

Fredag morgen klokka 6.30 fikk politiet melding om en bil som vinglet fælt på veien. Han kjørte riksvei 4 sørover. Politiet fulgte etter et stykke, før mannen ble stoppet ved Skillebekk. Heldigvis ble det ingen ulykke som følge av saken.

– Det var ingen mistanke om rus, men føreren fortalte at han var svært trøtt, forteller Bratteng. Mannen, en 21-åring fra Ski, er anmeldt for å ikke være

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NORDEN

Del denne saken med andre!



FEM BILER: Fem biler var involvert i en ulykke på E18 ved Elvestad i Hobøl kommune. Foto: Daniel Laabak

Sovnet bak rattet – fem biler i trafikkulykke på E18

Syv personer er skadd i en trafikkulykke på E18 ved Elvestad i Hobøl kommune i Østfold.

04.10.2015 (Oppdatert: 04.10.2015)

f 296 t

Annonse:



Tips oss!

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Politi, ambulanse og brannvesen er på stedet.

En bilfører skal ha sovnet bak rattet, opplyser operasjonsleder Trond Lorentzen til NTB.

Til sammen sju personer var involvert i ulykken. To av dem er sendt til sykehuset i Fredrikstad, mens fem av dem er kjørt til legevakten i Askim for sjekk.

Det dreier seg om lette til moderate skader for alle de skadde, opplyser politiet.

Politiet er i ferd med å rydde Elvestad, som ligger mellom

Annonse:

Føler du deg trygg med din pensjonsplan?

Last ned veiledningen «Pensjonsplan på 15 minutter» fra Forbeskribent og kapitalforvalter Ken Fishers firma, for deg med en portefølje på 3 millioner kroner eller mer.



Klikk her for å

Sjåfør innrømmet å ha sovnet før tunnelkrasj

Av KJETIL OLSEN VETHE

03. februar 2016, kl. 07:01

To biler var onsdag morgen involvert i en ulykke i Bekkestutunnelen.

DEL  Politiet meldte om ulykken like før klokken 7 onsdag morgen. Den ene bilen skal innledningsvis ha krasjet i tunnelveggen.

– Føreren av denne bilen erkjenner å ha sovnet og har deretter kjørt over i motgående løp. Der traff denne bilen en annen bil, og resultatet var at to biler kolliderte inne i tunnelen, sier politiets operasjonsleder Tone Kavli.

Ingen personer ble hardt skadet, men en av de involverte melder om nakkesmerter.

– Vedkommerde er kjørt til legevakten for sjekk, sier Kavli.

Beslagla sertifikatet

Hele tunnelen ble stengt etter smellen. Løpet i retning Oslo ble åpnet igjen ved 7.20-tiden, mens trafikken motsatt vei fikk grønt lys igjen ved 8-tiden. Begge bilene ble hentet av bergingsbil.

Kavli opplyser at politiet har beslaglagt førerkortet til bilføreren som erkjenner å ha sovnet.



STORE SKADER: Fronten på denne bilen, en varebil, har fått hard medfart. (Foto: KARL BRAANAAS)

ANNONSER

Innrømmer å ha sovnet ved rattet

Føreren av den ene personbilen som var innblandet i trafikkulykka på E6 ved Sjøa i Gudbrandsdalen, har innrømmet at han sovnet ved rattet og forårsaket ulykka. Syv personer ble skadet, tre av dem alvorlig.



Det oppsto lange køer etter ulykka, og E6 er fortsatt stengt ved ulykkesstedet.
FOTO: MALRITS OPSAHL / NRK



Journalist
Knut Sveen



Journalist
Stian Bakkom
@stianbakkom

Oppdatert 28.07.2014, kl. 19:25



Det sier operasjonsleder Arne Strøm ved Gudbrandsdal politidistrikt. I alt var sju personer innblandet i ulykka. Tre personer er alvorlig skadet og til behandling, mens 4 personer er lettere skadet, opplyser politiet.

To personbiler og en motorsykkel var innblandet i ulykka. Sjåføren som sovnet bak rattet er fra Oslo. Med seg i bilen hadde han to kvinner og en



LANGE KØER: Trafikkulykken 19. august i fjor forårsaket lange køer på E 134 ved Skre i Førresfjorden. arkivfoto: studio eidesvik

Sovnet trolig bak rattet

En 43 år gammel tysværmann er dømt til 16 dagers betinget fengsel etter en trafikkulykke i fjor august.

AV: GAUTE-HAKON BLEIVIK

PUBLISERT 10.05.2012 09:26

SIST OPPDATERT 10.05.2012 09:39



PARTY-TIME PÅ LANDET
8-10 NOVEMBER

ANNONSE





Kolliderte og havnet i elva

To biler var involvert i en kollisjon på E134 ved Morgedal lørdag ettermiddag. En av sjåførene sovnet bak rattet.



AV: JEANETTE HØIE

PUBLISERT 21.03.2012 13:48

Bli abonnent for



Norden

ANNONSE

<http://www.varden.no/nyheter/kolliderte-og-havnet-i-elva-1.7163525>

Nyheter

Trondheim Sør-Trøndelag Nord-Trøndelag

- Dette gjelder forhold som linjeføring, sikt, mangelfull skilting og uryddig veimiljø, sier Gustavsen.

Medvirkende faktorer	Andel av alle dødsulykker 2008
Manglende førerdyktighet	65 prosent
Høy fart etter forholdene	50 prosent
Ruspåvirkning	27 prosent
Tretthet/avsovning	14 prosent
Sykdom	8 prosent
Mistanke om selvvalgt ulykke	4 prosent
Faktorer knyttet til vei og veimiljø	29 prosent
Faktorer knyttet til involverte kjøretøy	19 prosent
Faktorer knyttet til vær- og føreforhold	15 prosent

Hittil i år har tolv personer mistet livet i trafikken i Trøndelag. Både i nord- og sørfylket har seks personer omkommet på veiene så langt i 2010, viser tall fra [Statistisk Sentralbyrå](#).



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«Tal
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Tuesday, 21 December, 1999, 17:50 GMT

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Night shift workers crash more cars



Frequent driving is also a factor in fatigue accidents

Night shift workers are more likely to crash their cars than people who work during the day, a study into fatigue-related accidents has found.

Researchers at the University of North Carolina at Chapel Hill found that drivers who did not work nights were four or five times less likely to crash their vehicle.

The project's principle investigator, Dr Jane Stutts, said that the researchers believed the study was the first of its kind to contact large numbers of drivers involved in sleep-related crashes soon after their accident.

The research - funded by the American Automobile



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Medical Staff More Likely To Have Car Accidents After Night Shifts

★ Editor's Choice

Main Category: Sleep / Sleep Disorders / Insomnia

Also Included In: Public Health

Article Date: 11 Jun 2012 - 11:00 PDT

93

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According to a team of French researchers, medical staff who drive home after a night shift are more likely to have an accident.

The researchers examined the driving skills of 30 anesthesia trainees in a sleep-deprived condition (SDC) and after a night of normal sleep. Study participants were asked to complete simulated driving tests at 8am.

The trainees drove for 15 minutes in urban conditions and then for 60 minutes under monotonous driving conditions, such as motorways or highways.

The researchers found that it was harder for participants to hold a straight line while driving when they were sleep deprived than after a normal night of sleep. Furthermore, they found it harder to control their speed when driving in monotonous conditions.

Dr. Ségolène Arzalier-Daret, from the Department of Anaesthesiology and Intensive Care, Caen Teaching Hospital, Caen, France, hopes that results from this study increase awareness among medical staff about the dangers of driving when sleep deprived.



Current ratings for:

Medical Staff More Likely To Have Car Accidents After Night Shifts

Patient / Public: Not yet rated
Healthcare Prof: ★★★★★ 3 (1 votes)

Worked to death - exhausted young doctor veers off road and dies after gruelling nightshift

EXCLUSIVE: A YOUNG doctor's car crash death was yesterday blamed on "inhumane" working hours on Scotland's wards.



A YOUNG doctor's car crash death was yesterday blamed on "inhumane" working hours on Scotland's wards.

Dr Lauren Connelly died just days before her 24th birthday as she drove home from a night shift.

One colleague said last night: "If Lauren had gone into law, architecture or accountancy - anything but medicine - she would still be alive today. That's the truth of it."

It is feared Lauren fell asleep at the wheel before her car veered off the M8 near Bishopton, Renfrewshire, and crashed down an embankment at 9.40am.



Fatigue is one of the leading factors contributing to road crashes.

A driver who has been awake for 17 hours has a driving ability similar to that of a driver with a blood alcohol concentration (BAC) of 0.05, and after 21 hours, similar to a BAC of 0.15.¹

Fatigue crashes are usually severe, resulting in serious injury and death, as the driver makes no attempt to avoid or prevent the crash.

THE FACTS

- Driver fatigue is particularly dangerous because it affects everyone, no matter how experienced a driver is. Driving when becoming sleepy is a high risk behavior.
- Fatigue contributes to 20-30% of all deaths on the road. This means it is as major a contributory factor to the road toll as speeding and drink driving.¹
- The contribution of fatigue may even reach 40-50% in particular crash types, such as fatal single vehicle semi-trailer crashes.³
- Fatigue is four times more likely to contribute to workplace impairment (including driving tasks) than drugs or alcohol. However, unlike drugs and alcohol which can be measured to assess risk, measuring and thus combating fatigue in the workplace is difficult.⁴
- Road safety agencies rely on assessments by the police who attend crashes and statistical surrogates (i.e. specific crash criteria such as timing, number of vehicles involved and speed zone parameters) to determine the prevalence of fatigue-related crashes. Though police officers are trained to perform such assessments, due to their subjective nature, it is expected that the

role of fatigue in crashes is highly underestimated.

When are fatigue crashes most likely to occur?

- Fatigue becomes a factor in all trips that occur during normal sleep times, or at any time the driver has previously been deprived of sleep. This risk is increased if the driver is taking medication or driving alone.
- A driver is 4 times more likely to have a fatal fatigue crash if they are driving between 10pm and dawn.⁵
- Nearly 30% of all fatal fatigue crashes occur during public and school holiday periods.⁷

Where are fatigue crashes most likely to occur?

- In a 1998 Australian study of fatigue-related crashes⁶, New South Wales had the highest percentage of fatal crashes involving driver fatigue (22%) and the Northern Territory had the highest rate of fatigue-related crashes per 100 million vehicle kilometres travelled (0.66). 16.7% of the national fatal fatigue-related crashes occurred in Queensland.

- On rural roads:
The relative risk of dying as a result of a fatigue-related crash in rural areas of Queensland is 13.5 times higher than the risk in urban areas.²
- Long straight stretches of road.

Who is most at-risk of a fatigue crash?

Driver fatigue affects everyone, however those at higher risk of a fatigue-related crash are:

- Rural drivers and riders
- Young male drivers and riders – research indicates that 75.5% of fatigued drivers and riders involved in single vehicle crashes in 1998 were male, with 35.1% being aged between 17 and 24 years of age.⁶ Drivers and riders aged over 50 years are more often involved in fatigue crashes in the afternoon (12-6pm).²
- Shift workers and people with long work hours (particularly on their trips home from work).
- Commercial drivers including heavy vehicle drivers. Commercial drivers spend long hours on the road, frequently drive at night, many keep highly irregular schedules and may keep irregular sleep schedules. This lifestyle can cause chronic sleep deprivation. It is estimated

Statens havarikommisjon for transport

RAPPORT Vei 2014/01



RAPPORT OM UTFORKJØRING MED BUSS
PÅ E6 VED DOMBÅS I DOVRE KOMMUNE
22. FEBRUAR 2013



English summary included

Statens havarikommisjon for transport (SHT) har utarbeidet denne rapporten utelukkende i den hensikt å forbedre trafikksikkerheten. Formålet med undersøkelsene er å identifisere feil og mangler som kan svekke trafikksikkerheten, enten de er årsaksfaktorer eller ikke, og fremme tilrådinger. Det er ikke havarikommisjonens oppgave å ta stilling til sivilrettslig eller strafferettslig skyld og ansvar. Bruk av denne rapporten til annet enn forebyggende sikkerhetsarbeid skal unngås.

Statens havarikommisjon for transport • Postboks 213, 2001 Lillestrøm • Tlf: 63 89 63 00 • Faks: 63 89 63 01 • www.aibn.no • post@aibn.no

<file:///C:/Users/Eier/Downloads/2014-01%20Domb%C3%A5s.pdf>

- 3.1 Operative og tekniske faktorer
- a).....
- b).....
- c) Føreren har fortalt at han var trøtt/sliten, og at han sovnet ved rattet.



SAFE HMS konferansen 5. – 6. mai 2009



Hvor går grensen?

En konferanse om helse og sikkerhet ved skiftarbeid, arbeidsbelastning, arbeidstid og arbeidsmiljøeksponering.

<http://safe.no/hms/hvor-gar-grensen/>



SAFE

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Effekter av skiftarbeid
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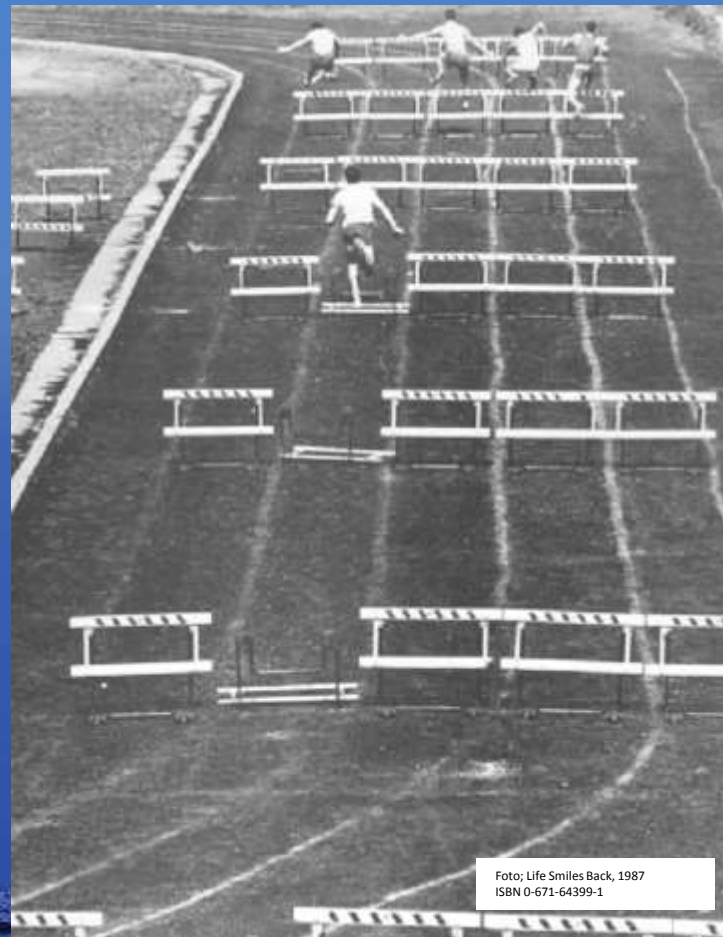


Foto: Life Smiles Back, 1987
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