



VOL. 1 ISSUE 1 · MARCH 2022

THE OSH DIGEST

The official publication of



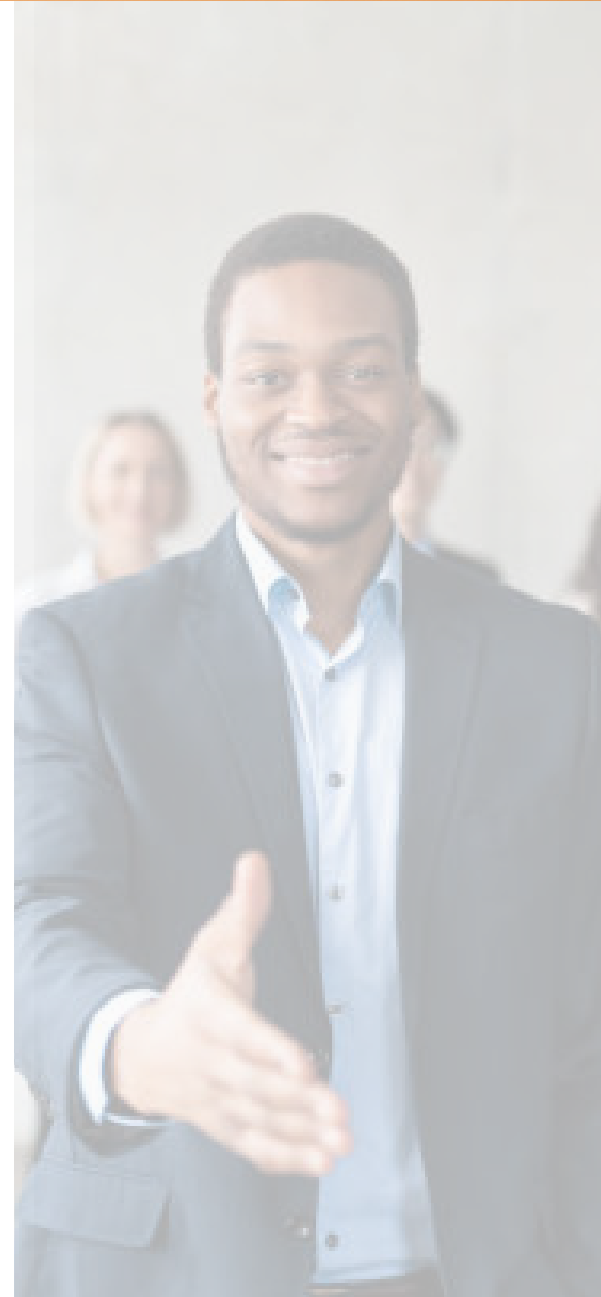
Introducing the OSH Digest

OSH PRO SERVICES

In our continuous efforts to support improving the understanding of occupational safety and health (OSH) and occupational hygiene practices, OSH Pro Services proudly presents this first issue of our monthly OSH Digest. The OSH Digest intends not to report workplace accidents and other such mishappenings. Instead, the objective is to share knowledge to encourage and promote the OSH professionals' good practices. In addition, we wish that other non-OSH professionals would also learn a thing or two by reading the OSH Digest. Finally, we hope to enlighten workplace management teams on the positive outcome of investing in workers' safety and health programs.

With the OSH Digest, we intend to accommodate readers with different OSH competence and competence levels. Further, we put effort to make the OSH Digest enjoyable to read. We hope you will find the content and presentation of the OSH Digest interesting, and more important, beneficial.

If you wish to receive upcoming versions of the OSH Digest, we suggest you consider subscribing to the Digest. You can find some more information on how to subscribe on page 7.





CONTENT

Vol. 1 Issue 1 • March 2022

01 Long working hours and fertility
Mobile phones and work safety

02 Understanding workplace errors

03 Occupational medicine

04 Eye Ergonomics

06 The word around
Picking your brain

07 For your information
Looking at the bright side

09 A word from our partners

OSH Subject Matter

Long working hours and fertility

Workers may be compelled to work long hours or even by their choice. The compensation for the long hours may motivate, while for others, the need to get on top of things by the extra hours may be behind working long hours. Ever thought that such long hours could affect the propagation of the next generation?

Long working hours have been reported to increase the risk of premature birth or babies born with low birth weight and mothers' pre-eclampsia (a pregnancy complication characterized by high blood pressure and damage to other organs). However, studies regarding the impact of long working hours on infertility are seldom.

A Korean study with almost 6000 women aged 15-49 was conducted to investigate the association between working long hours and infertility among married female workers. Infertility here is described as a failure of a woman to conceive despite attempting conception for a whole year.



Generally, 85% of couples attempting pregnancy succeed within a year; when pregnancy does not occur after regular unprotected intercourse for a year, it is regarded as a case of infertility.

The study results showed an association between working hours and infertility, with the risk increasing with the number of hours one works. In addition, the authors refer to other studies from Thailand, Denmark, USA and Canada, showing that women working longer had delayed conceptions than those working shorter hours.

The increasing risk of infertility is attributed to hormonal disturbances and stress due to lack of sleep. In addition, women with obstetrics and gynaecological problems may be at a super high risk of infertility when working long hours.

Furthermore, long working hours can affect the husband-wife relationship by reducing the coital frequency, further reducing the chance for conception.

A limitation of the study is that the cause-and-effect relationship between working long hours and infertility could not be confirmed. Therefore, future research based on the time of infertility is necessary to reveal any specific cause-and-effect relationship between working hours and infertility.

Reference:
Ahn et al. (2021). The association between long working hours and infertility. *Safety and Health at Work*, 12: 517-521

Mobile phones and work safety

How do workers use their mobile phones during working hours? Do you have a policy on using mobile phones at the workplace?

More and more, mobile devices are used for safety training and education in various occupational settings, including road safety, healthcare and construction sites, to increase workers' ability to identify safety risks and improve real-time employee-manager communication.

A study to investigate the relationships between the use of smart technology (mobile phones) and the implicit (tacit) and explicit safety knowledge of employees and their propensity to follow safe practices at work showed that:

- Using mobile technology had a significant positive effect on the safety culture
- There is a positive effect of using mobile technology on tacit knowledge
- Using mobile technology positively influenced personnel attitudes toward safety emotional aspects



Mobile learning is unique in that it allows real-time, anytime, personalized learning and can provide the following important benefits:

- help learners improve their literacy and numeracy skills and recognize their existing abilities
- encourage both independent and collaborative learning experiences
- help learners identify areas where they need assistance and support
- help combat resistance to the use of information and communications technology (ICT) and help bridge the gap between mobile phone literacy and ICT literacy
- help remove some of the formality from the learning experience and engage reluctant learners
- help learners remain more focused for longer periods
- help increase self-esteem and self-confidence.

It seems plausible that these benefits would be equally applicable to the current state-of-the-art in mobile-based learning of safety in the workplace and to the quest to improve the effectiveness of safety training.

From (Reference):
Olak et al, I(2021) The relationships between the use of smart mobile technology, safety knowledge and propensity to follow safe practices at work, *International Journal of Occupational Safety and Ergonomics*; Vol. 27, No. 3, 911-920,
<https://doi.org/10.1080/10803548.2019.1658398>

OSH Subject Matter

Understanding workplace errors

Different situations, sometimes fatal, may arise at workplaces due to human errors. Therefore, it is essential to understand errors in the context of human behaviour. This article is a brief look at human error from the Skill-Rule-Knowledge perspective.

Skills-Rules-Knowledge model

The terms skill, rule and knowledge-based information processing refer to the degree of conscious control exercised by the individual over their activities.

The skill-based mode refers to the execution of highly practised, mostly physical actions in which there is, in essence, no conscious evaluation of the response. For example, an operator responds to a process alarm by operating a valve automatically in a highly practised operation. The alarm signals the operator to turn a valve on/off. The operator does the procedure without any conscious thought.

In the knowledge-based mode, the task is carried out in an almost conscious manner, putting considerable thought into what one is doing. For example, this would be the case when a beginner performs a task or an experienced individual encounters a completely new situation. In these cases, a considerable mental effort to assess the situation correctly is required, and the response is likely to be slow. Further, after each control action, the individual needs to review the outcome before further action, slowing down responding to the situation even more.

In the rules-based mode, the rule of play is learned from interacting with the work process, through formal training, or by working with other experienced workers. The level of conscious control falls between the knowledge and skill-based modes. The rule mode follows a laid down operational conditioned behaviour: if the symptoms are A, then the problem is B. If the problem is B, then do X, Y, Z.'

Classification of errors

Figure 1 represents a broad classification of human failure into errors and violations. Violations are grouped into "Routine", where one does not follow procedures believing they are no longer relevant, and "Exceptional", where a supervisor change the work process to meet specific goals, e.g. rush order. On the other hand, errors are categorised into slips and mistakes reflecting on the Skills-Rules-Knowledge (SRK) model.

Slips - Skill-based errors

Slips can be defined as failures occurring during operation performance despite having the correct intention. For example, when a worker knows a reactor has to be filled but fills a wrong reactor, a courier knows where to deliver a consignment but drives to a wrong destination. Slips can be described as misplaced competence of highly practised activities characteristic of skill-based mode.

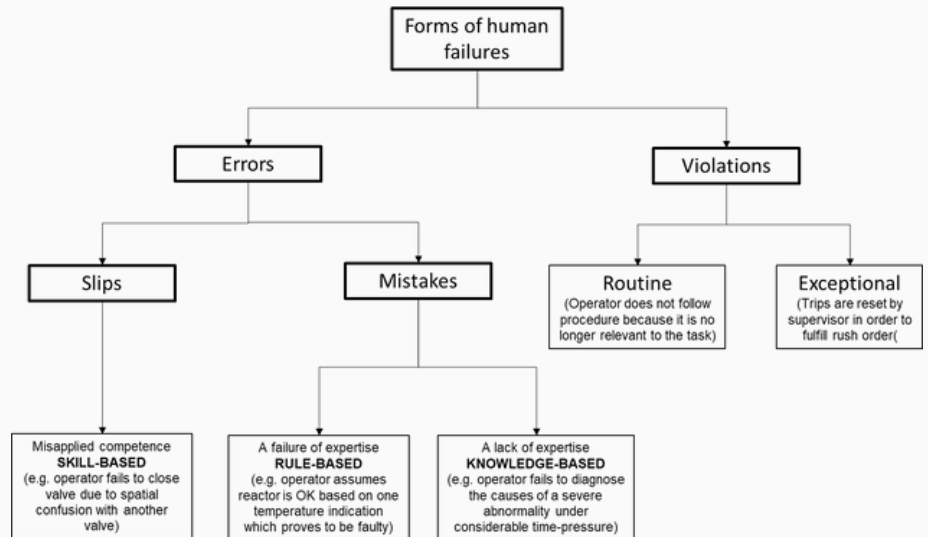


Figure 1: Classification of human error based on the Skills-Rules-Knowledge model (Adapted from Reason 1990)

In the skill-based mode, the individual can work effectively in a pre-programmed behaviour, but strong habits can take over when distracted from paying attention to checks.

Mistakes - Rule and knowledge-based

On the other hand, mistakes arise from incorrect intentions that result in the wrong sequence of events. Mistakes occur primarily due to a lack of knowledge or inappropriate evaluations. For example, an operator wrongly assumes a reactor should be heated, heating it and causing overheating.

In the rule-based mode, an error of intention may arise when an inappropriate rule is applied. For example, an experienced batch process operator applies batch process rules to evaluate the cause of a continuous process disturbance, which results in misdiagnosis, leading to an inappropriate action. In other situations, one may use diagnostic rules that have been successful earlier in new emerging cases.

In the knowledge-based mode, only the available knowledge is used. The problem-solver becomes overconfident that they have the proper knowledge, becoming enmeshed in one aspect of the problem, excluding all other considerations. Conversely, an overworked worker superficially attends to one problem after another but solves none of them.

This brief discussion on errors is based on the e SRK-model. However, others may use different models to explain human errors.

References for further reading:
Rasmussen J (1983). SRK; signal, sign and symbols and other distinctions In human performance models. IEEE Transaction systems, 13(3)
Embery D (2005). Understanding human behaviour and error. Human Error, Human Reliability Associates, Ltd.
Reason J (1990). Human Error. New York, NY: Cambridge University Press,



Feature



It was soon apparent that prevention was more economical than treatment – the adage stands even today “prevention is better than cure”.

Dr Yogindra Samant,
Occupational physician

Occupational medicine

*When a doctor arrives to attend some patient of the working class, let him condescend to sit down...if not on a gilded chair...one a three-legged stool... He should question the patient carefully... So says Hippocrates in his work 'Affections.' I may venture to add one more question: **What occupation does he follow?** Bernardino Ramazzini (1633 -1714) – The father of Occupational Medicine.*

Initially, occupational medicine was directed toward the treatment of injuries or diseases that resulted from or during work. It was soon apparent that prevention was more economical than treatment – the adage stands even today “prevention is better than cure”.

Occupational medicine work area

Occupational medicine truly focuses on hazard identification and prevention or looking at the root causes of how an injury and illness may have been caused. Preventive interventions are devised by occupational medicine physicians in close collaboration with other occupational health professionals, employers, and workers.



A brief history of occupational medicine

The majority of the population is at the workplace at least eight hours per day. The workplace has much influence on the health of the working population. Occupational medicine plays a key role in society and is beneficial both to the individual and community level because it deals with the impact of work on health.

Early Egyptian and Roman physicians recognized diseases directly related to occupations. Modern occupational medicine may be said to have started with Bernardino Ramazzini, an Italian physician of the 17th century who strongly advised that the physician who wished to learn about the causation of a patient's complaint should inquire into the occupations of the patient. With the Industrial Revolution, the number of persons exposed to potential hazards at work increased rapidly. Traumatic injuries became frequent, and diseases due to inhaled dust and noxious gases and vapours were recognized, often by nonmedical persons.

The occupational medicine physician could work with individual patients as well as working populations protecting and improving health both at the macro and microlevel. In that sense, there are several roles that an occupational medicine physician performs, from a clinician conducting screenings or identifying the work-related causes of clinical symptoms of a worker at occupational health service to an adviser for Human Resources to improve health and productivity in the workplace. In addition, there is the role of policy advisors to inspectorates' ministries and governmental agencies on how to best achieve prevention at the workplace.

Occupational Medicine physicians are also actively involved in academics and research. Occupational epidemiology is a novel field that provides knowledge-base for research, practice, and policy in occupational health.

Continue on Pg 4

Feature

Occupation Medicine (cont.)

The specific goals of occupational medicine are:

- Identify potential hazards in the workplace to ensure its safety
- Conduct thorough risk assessments
- Maintain the physical and mental well-being of workers
- Prevent occupational accidents and injuries
- Assess workers' health and fitness to determine whether they are fit to work
- Diagnose and treat occupational injuries
- Rehabilitate workers who have become sick or injured in the line of duty
- Develop and implement health promotion programs in the workplace

Some of the hazards that occupational medicine deals with or evaluates include:

- Toxic materials used in production
- Stressors in work processes
- Hazardous chemicals, biological agents, radiation, noise and vibrations
- Poor indoor air quality
- Workplace violence and harassment
- Unhealthy working time
- Bioterrorism
- Poor ergonomic designs
- Emerging workplace risks such as home office, digital surveillance

In achieving these goals, occupational medicine collaborates with different disciplines, including:

- Community medicine
- Physical therapy and rehabilitation
- Toxicology
- Industrial hygiene
- Safety engineering
- Organizational Psychology
- Public health
- Environmental health

Occupational physicians

Medical professionals specializing in occupational medicine are called occupational physicians, occupational medicine specialists or occupational and environmental medicine (OEM) physicians. Due to the nature of their job, it is crucial that they tend to have a diverse set of competencies, including clinical medicine, and have general knowledge of work processes. In addition, they are typically tasked to interact with both the employers and workers as well as government agencies, unions, hospitals, insurance companies, lawyers and public health officials.

The writer of this Feature is the Chief medical officer with the Norwegian Labour Inspection Authority, holding a PhD in occupational safety, focusing on accidents prevention, with an interest in future work.



Like any other body part, the eye is not designed to be in one position for prolonged periods"

Ms Enid Muriuki
Occupational physiotherapist

Eye Ergonomics

When one discusses about ergonomics references is more often than not on awkward working position, how to sit with back right up, correct using of tools and such physical challenges. However, ergonomics covers more than that. In this feature, occupational physiotherapist Enid Muriuki addresses little discussed eye ergonomics.

The use of computers and phones has increased markedly over the past two decades. While eye problems related to screen exposure may not be obviously noted, they cause significant discomfort and are largely preventable.

Which workers group would be the most vulnerable? This would be office workers, other workers with extend use of screens, students, television viewers, as well as mobile phone users (basically majority of us).

Like any other body part, the eye is not designed to be in one position for prolonged periods. Use of Computer and phones reduces the number of natural breaks, therefore increasing risks for eye strain that may cause eye disorders.

What are some of the risk factors?

- Sitting inappropriate distance from the screen, too close or too far
- Looking at the screen for long periods of time without breaks
- Working with too bright background light
- Viewing unclear, flickering screen

What are some of the disorders associated with inappropriate use of screens?

- Bending forward to view the screen, hence over correcting or accommodating of postures to reduce eye strain may cause headaches and may result in shoulder, neck and back disorders.

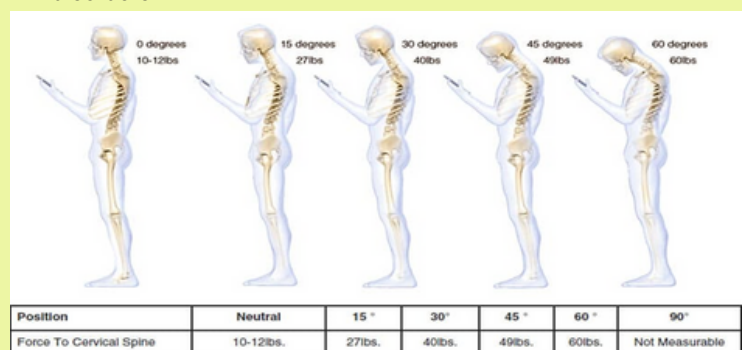


Figure 1: The force to the cervical spine when the head is tilted at different angles

Feature

Eye ergonomics (cont.)

- Temporary changes in the ability to see colours and, in some cases, open-angle glaucoma, that is, increased pressure within the eyeballs causing gradual loss of sight, over prolonged use of more than four hours of exposure to the bright background of the screen.
- Burning, itching or tearing eyes.
- Blurred vision.
- Eye strain or fatigue (Asthenopia).
- Dry eye syndrome (Keratoconjunctivitis Sicca).

How to prevent ergonomics-related eye disorder
The most important ergonomic factor for preventing eye strain is the distance of the eyes from the screen.

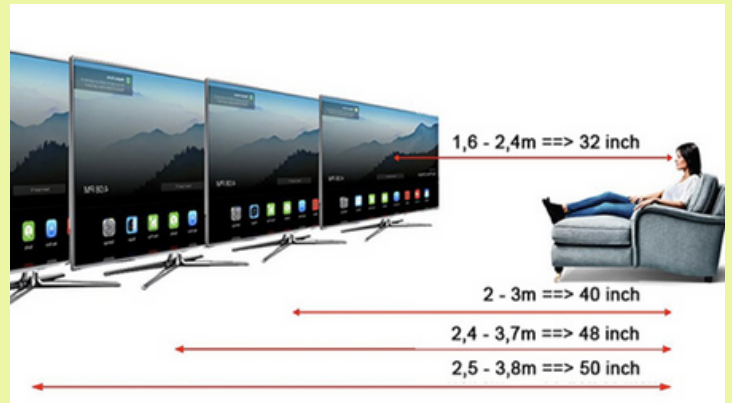


Figure 3: Appropriate distances from television screen according to the size of the screen

Here are some guiding principles:

- The rule of 20/20/20 which states 20 minutes of computer use, then looking 20 feet away from screen, for 20 seconds.
- Ensure a distance of 40-60cm from the computer screen, looking at the screen as illustrated in figure 2. The distance applies to phone screens too.

- For television, the distance from the eyes to the screen should be five times the size of the screen (see figure 3). The larger the screen, the farther away it should be.
- Use of anti-glare screen, which help to reduce glare that causes strain and headaches. They also protect the eyes from harmful particles emitted by digital screens.
- Eye exercises, including frequent blinking.
- Proper position of the monitor, to light and body position
- Adequate hydration helps produce a greater volume of tears that prevent the drying of the eyes.
- Regular eye checkups and training

REFERENCE:

American Federation of State, County and Municipal Employees (AFL-CIO). *Keys to healthy computing – an AFSCME health and safety handbook* [online]. 2006 [cited 30 May 2010]. Available from: [URL link]

Optometrists Association of Australia. *Almost half of the office workers could be suffering from dry eye, experts* [online]. Melbourne: Optometrists Association of Australia; 20 Nov 2008 [cited 10 June 2018]. Available from [URL link]

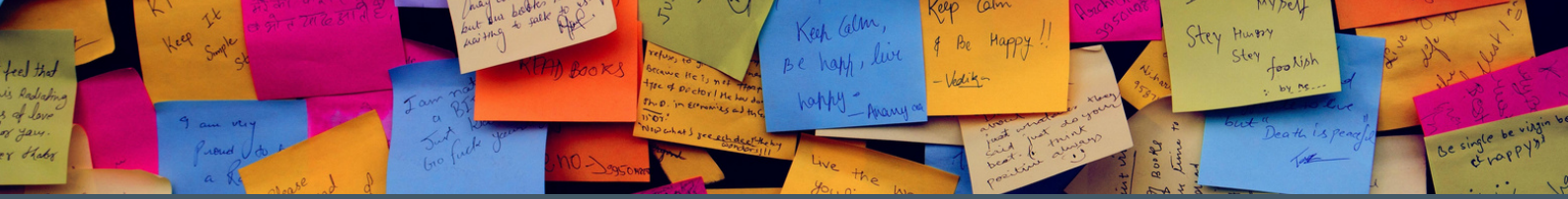
The writer of this Feature is an occupational physiotherapist with long working experience in Ergonomics and holds an MSc OSH.

Call for abstracts:

Do you have expertise that you think others may benefit from it and that you wish to share with other professionals? OSH Pro Services welcomes interesting topics on occupational hygiene, work environment management and good safety practices.

Kindly send a short description of the topic you may wish to share for consideration to: admin@oshproservices.org.

Topics of interest would be presented as Features in upcoming issues of the OSH Digest.



The word around

Reflections of an OSH professional

Kenya has since come a long way in OSH, from factories to other workplaces. Yet in comparison to, for example, the developed countries, we still have a long way to go from ensuring a level where safety is neither an afterthought nor considered a waste of time. Kenya is yet to ratify ILO Occupational Safety and Health Convention 1981.

Some, primarily European, multinationals have had a tremendous impact on OSH promotion; Chinese and India are lagging. However, most Kenyan contractors still struggle to integrate safety into their operations due to handing down contracts, watering down safety aspects by the time it gets to the contractor doing actual work. Companies work hard to be ISO 45001:2018 certified due to clients' requirements and not an internal improvement. Some are accredited on paper but with significant implementation challenges. Companies are more focused on business cases and continuity and will go out of their way to meet their clients' requirements but do little to comply with the law.

DOSHS, the national enforcement institution, strives to attain comprehensive supervision, but the pace of societal development may be overwhelming. Enforcement officers need to produce more on the tasks at hand and avoid engaging in activities with conflict of interest that may compromise their neutrality and competence. Failure to embrace technology by DOSHS will be a significant drawback in having a database for OSH statistics. Reports need to be open to the public.

Poverty and unempowered employees is another challenge. An employee is focused on getting a job even for a day to ensure there is food on the table, opening doors for exploitation by employers. Such employees will not ask about safety.

Where safety is not in Company's plans, the risk of exposure to hazards is obvious, something predominant in the informal sector and the formal. Other challenges are misinformation on what health and safety entail, management's lack of understanding of short/long-term interventions, elimination vs accepting risk, and control.

Kenya is yet to have a functional body for OSH professionals. As a result, many practitioners opt for membership in international associations. However, there is the little-known KOHSA; and now, Workplace Safety Professional Association of Kenya (WSPAK), with its newly elected officials working to rally EHS professionals to push the health and safety agenda.

The writer is an independent OSH professional. This content is the writer's opinion and may/may not necessarily reflect the opinion of OSH Pro Services.

Reflections of some workers

Answers from some workers to the question: What do you think when going about your daily work?

A painter painting posts in the middle of a two-way street:

I think about all these cars passing by, and I hope nobody accidentally runs me over.

An office cleaning worker: Every morning when I come to work, I pray that the toilet floor is not flooded with water from the leaking pipes. Otherwise, I have to clean it up using rags with no gloves. Unfortunately, we don't get gloves at my workplace.

A boda-boda (motorcycle) rider: One thing is that the engine gets hot after a few rides and hotter during the day, and there is nothing to protect my legs from the heat. I don't know what to do.

A domestic worker: I cannot use the same bathroom/toilet as the house owner. So if I need to go, I have to go down the street to a public toilet to do my stuff. I always dread the day I will come to work with a bad stomach.

Picking your brain

Did you know...

OSH is a name of a city and province in Kyrgyzstan...



Osh is the second-largest city in Kyrgyzstan, located in the Fergana Valley in the country's south and often referred to as the "capital of the south". It is the oldest city in the country, with an area of 182 sq. Km, a population of 256,763 (2017), has served as the administrative centre of the Osh Region since 1939.

Adept or inept?

How conversant are you in OSH matters? Test your knowledge by answering the following questions...

- Q1: Which hazardous substance is the building block of polyurethane polymers?
- Q2: In exposure assessment, what does NOAEL stand for?
- Q3: What is the occupational exposure limit value for noise?
- Q4: How high above the ground is work considered work at height?
- Q5: What is the difference between the work of an industrial and occupational hygienist?
- Q6: Which human system is affected when a worker suffers from solvent-induced encephalopathy?
- Q7: What does COPD mean?
- Q8: What condition is caused by long-term exposure to silica?
- Q9: Name the psychosocial work challenge that can happen when the same work type is repeated for a long time
- Q10: What is the name given to the condition with a painful elbow caused by repeated work?

Check for the correct answers on page 7

For your information...

Upcoming events

Call for speakers - OSH Webinar 2022

In the last two years, OSH Pro Services organised several webinars as platforms for learning and exchanging experiences. We believe the webinars have been very beneficial to those who attended. We wish to continue with this useful program. Would you like to be part of the upcoming webinars this year as a guest speaker, or know someone with special competence from whom others can benefit? We would like to hear from you.

Kindly contact us through: admin@oshproservices.org



Message from OSH Pro Services

Subscription to the OSH Digest

Do you wish to receive the OSH Digest monthly without any hassles? Then, we suggest you become a subscriber. For as little as KES 30/month (preferably paid annually, that is KES 360/year), about a shilling a day, you will receive the OSH Digest directly into your email inbox every month.

To subscribe, make your payment (Mpesa) to +(254) 743 961154. Send your payment confirmation to: registration@oshproservices.org



Looking at the brighter side

Quotable quotes

- "When I say I work as an occupational hygienist, some people asked me if my work involves telling workers how to brush their teeth or how to wash their hands after visiting the toilet." Ms **Pinky Bhatt**, Senior Occupational Hygiene, Johnson Matthey, UK.
- "When dealing with the informal sector, everything has to be informal. Even the information given has to be done informally." Mr **Bayo Awosanya**, Senior occupational hygienist, Saudi Aramco, Saudi Arabia.

OSH in movies?

OSH professionals at the movies, after watching:

Blood Diamonds (2006): A heart-wrenching account of workers in Africa who are forced to mine for diamonds for rogue militants trying to make money on the backs of workers.

Erin Brockovich (2000): An unemployed single mother becomes a legal assistant and almost single-handedly brings down a California power company accused of polluting a city's water supply. Movies like this open our eyes to the dangers of dealing with these chemicals.

Jurasick Park (1993): A worker is pulled into a cage and killed in the opening scene.

What OSH item have you identified in a movie you watched recently? Share it with others. Send the movie title and an OSH statement to: admin@oshproservices.org.

Answers to Adept/inept quiz

- A1: Diisocyanates
- A2: No Observable Adverse Effect Level
- A3: 85 dB
- A4: 2 metres
- A5: No difference
- A6: The nervous system
- A7: Chronic Occupational Pulmonary Disease
- A8: Silicosis
- A9: Burnout
- A10: Tennis elbow

How did you fair? Are you adept or inept?

Suppose you answered all ten questions correctly; congratulations! You are Super adept.

If you answered correctly -

- 7-9; You can consider yourself Adept
- 4-6; Just average: A few readings will do you good
- 1-3; You are Inept
- 0: Are you sure you are in the right profession?

Look out for a new quiz in the next issue of the OSH Digest.

A word from our partners

Kisima Health facility



Dr. Jalab Ashraph
DOSHS approved DHP

Medical Clinic in Mombasa
Situated right in Mombasa CBD (Next to Makadara ground), the facility caters to primary healthcare with laboratory services and occupational health services with a DOSHS approved designated health practitioner.

Call today:
+254 727285590

Business Hours

Mon: 8:00 AM – 7:30 PM
Tue: 8:00 AM – 7:30 PM
Wed: 8:00 AM – 7:30 PM
Thu: 8:00 AM – 7:30 PM
Fri: 8:00 AM – 7:30 PM
Sat: 8:00 AM – 7:30 PM
Sun: 9:00 AM – 7:30 PM



SAV SKILLS LIMITED

Sav Skills Limited is a training and Management Consulting firm located at Close the Gap – Ratna Square, Fidel Odinga Road – Nyali, Mombasa. Our approach - training, coaching and mentorship, with focus on youth, professionals and organizations. For organizations, our focus is on the Team, and the Process. Our services are tailored to meet your needs. We have curated a 4-week personal development program that will guide and help you not only balance but achieve an integration in your life. From work-life balance to work-life integration. Contact us for prices and offer: +254 782 631277 (office hours) Email: info@savskills.com

Do you have something to showcase to others?

Do you provide services targeted to OSH professionals?
Do you have other services for non-OSH professionals or the general public?

OSH pro Services invites you to showcase your services and merchandise here, present your events, and inform those you wish to at very pocket-friendly prices with reach out to thousands.

Contact: admin@oshproservices.org

Know about...



About OSH Pro Services

Occupational Safety and Health Professional Services (OSH Pro Services) is an organisation that endeavours to understand better what occupational safety and health (OSH) entail for employers and their employees, for other interested parties and stakeholders. OSH Pro Services brings together occupational physicians, experienced workplace inspectors, risk assessors and statisticians, IT consultants and occupational physicians as associates in a great team working towards improving OSH workers.

Visit our web pages for more information on us at: <https://oshproservices.org>

Learn with OSH Pro Services

Do you know that earlier Conferences and webinars hosted by OSH Pro Services are available for all those interested?

Visit: [Learn with OSH Pro Services](#)

Contact us

Email:
admin@oshproservices.org

Telephone (mobile):
+(254) 743 961154
+ (47) 909 49 602