Improving forensic quality through forming a constructive relationship with stress
Have you ever?

Driven to work and don’t remember how you got there?
Have you ever repetitively misplace the same items (car keys, wallet, glasses)?
Have you ever selected an incorrect program on an instrument at work?
Have you ever?

Mislabeled sample analyses?
Have you ever dropped a plate/tray of samples?
Have you ever?

Added the wrong amount of a reagent to an assay?
Human error may be a major cause of all failures and non-conformances.

Mindlessness → Inattentive, distracted, rushing, multitasking
**Stress- Good or Bad?**

<table>
<thead>
<tr>
<th>Supported Positive</th>
<th>Supported Negative</th>
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<tr>
<td>Stress can make people stronger</td>
<td>Stress has been linked to leading causes of death = heart disease, accidents, cancer, liver disease, lung ailments, and suicide</td>
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<td>Stress can give new perspectives and strengthen priorities</td>
<td>Stress increases absenteeism from work, increased medical expenses, and loss of productivity</td>
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<td>Stress can lead to skilled performance in risky moments</td>
<td>Stress can cause cognitive impairment, depression, and other mental illnesses</td>
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<td>Stress can lead to achievement in the face of adversity</td>
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# Types of Stress

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<th>Acute</th>
<th>Chronic</th>
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<td>Short term events that cause a spike in stress reaction which can assist with motivation and be helpful</td>
<td>Events that are repetitive or long term that keep the stress reaction continuously or often activated</td>
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<tr>
<td>- Participating in a moot court</td>
<td>- Overly demanding hours</td>
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<td>- Presenting to your peers</td>
<td>- Pulled in multiple directions</td>
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<td>- Asking for a raise</td>
<td>- Conflicts with coworkers</td>
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<td>- Taking a competency exam</td>
<td>- Job insecurity</td>
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Pressure & negativity becomes stress when ...

- Dwell in past
- Ongoing/Destructive
- Ruminate
- Internal reactions
- Overthink Future
Exercise our Minds

Make stress your friend (again)
Mindfulness

Pay attention

On Purpose

Non Judgmentally

Present Moment

Objective without labeling

Here & now

Intentional awareness

Using senses
We Can Change the Brain!
- Mindfulness Meditation:

Mindful Brain Parts

- **Increases gray matter density**
- **Changes brain connectivity**
- **Associated with increased cortical thickness**
- **Larger hippocampus**
A Moment of Science

Mindfulness strengthens parts of the brain connected with **emotion regulation**, **happiness**, **learning & memory**, and **perspective-taking**


Mindfulness aids **working memory and flexible thinking**


Mindfulness meditation **reduces anxiety**


Mindfulness helps **keep our autopilot mind in check**


Mindfulness-based stress reduction can be an **effective treatment for poor sleep**

Calmer  Focused Attention  Enhanced Clarity  More creative  Less Stress  Deeper Fulfillment

Benefits of Meditation in the Workplace
The next time you are in a stressful moment, practice this 3-step method:

1. **COUNT**: Focusing on your breath, begin to count your inhalations and exhalations. If you notice your breath is fast, only 1-2 counts in and out, start to slow it down. Take longer, slower, and deeper breaths so your inhalation is 4-7 counts and your exhalation is the same. To continue to calm yourself by using breath alone, drag your exhalation out longer than your inhalation, such as 4 counts in, hold for 5 counts, and 6 counts out.

2. **SCAN**: Mentally scan your body for tension. In stressful moments, we tend to have physical responses. Tension frequently is predominant in our jaws, base of skull, neck, shoulders, and chest. Scan your body from head to toe and see where your tension hides. Where do you feel pain or irritation?

3. **INTERRUPT**: A pattern interrupt begins by focusing on the breath. You can have additional positive breath work by mentally breathing into the areas of tension identified during your body scan.

www.mindgenllc.com
Future of Quality Assurance—Mindfulness to Mitigate Human Error
Forensic scientists experience common workplace pressures and industry specific pressures.

When chronic, stress can decrease performance, productivity, and decision making.

Mindset plays an important role in how a person reacts to stress both psychologically and physiologically.

Mindset can be cultivated to reconstruct how the brain responds to stress through mindfulness practice.

Training forensic scientists in mindfulness is a positive addition to quality improvement programs.
TECHNICAL NOTE

GENERAL

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Human Factors Effecting Forensic Decision Making: Workplace Stress and Well-being

ABSTRACT: Over the past decade, there has been a growing openness about the importance of human factors in forensic work. However, most of it focused on cognitive bias, and neglected issues of workplace wellness and stress. Forensic scientists work in a dynamic environment that includes common workplace pressures such as workload volume, tight deadlines, lack of advancement, number of working hours, low salary, technology distractions, and fluctuating priorities. However, in addition, forensic scientists also encounter a number of industry-specific pressures, such as technique criticism, repeated exposure to crime scenes or horrific case details, access to funding, working in an adversarial legal system, and zero tolerance for “errors”. Thus, stress is an important human factor to mitigate for overall error management, productivity and decision quality (not to mention the well-being of the examiners themselves). Techniques such as mindfulness can become powerful tools to enhance work and decision quality.

KEYWORDS: forensic science, human factors, mindfulness, forensic decision making, expert performance, well-being, workplace stress, forensic error, cognitive forensics, resilience
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