

# MULTITASKING



# Multitasking and EMS

- On each and every emergency response you will play many roles:

- Healer
- Counselor
- Advocate
- Liaison
- Technician
- Consultant
- Driver
- Radio operator
- Equipment Specialist



- How many of these roles do you find yourself attempting to perform at the same time?



# The History of Multitasking

- ❑ Computer term 1960s
- ❑ Multimedia term 1990s
- ❑ Multitasking at work?



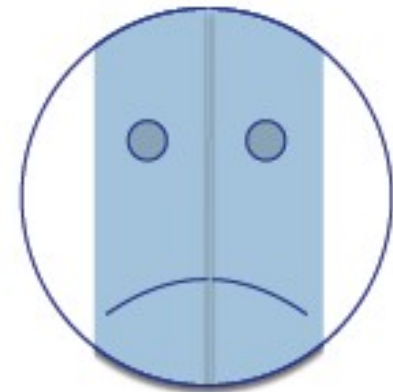
Stress Reduction Kit





## But I do it all the time!

- Frequent multitasking does not change the limits of what the brain can process
  - more stimuli = less attention to each item
- YOU CAN'T SPLIT THE DIFFERENCE
  - 100 %
  - 50 / 50
  - 40 / 40 / 20
- **LOSS TO TASK SWITCHING**





# The Science of Multitasking

## ❑ Experiment #1

- ❑ Touch your finger to your nose.
- ❑ Feel your finger and your nose at the same time?
- ❑ Cranial vs Peripheral Nerves.
- ❑ We live .5 seconds in the past





# The Familiar and the Focused

- Familiar + Familiar = **OK**
- Focused = **OK**
- Familiar + Focused = **NOT OK!**
  - ▣ Jogging and listening to music = **OK**
    - ▣ Not measuring every step or memorizing lyrics
  - ▣ Watch tv when your significant other is telling you about his or her day = **NOT OK!**
    - ▣ You may miss the fact that Myrtle-May was totally rude today down at the Pick-n-Pluck.



# The Science of Multitasking

## □ Automatic

- Familiar
- Simple
- Trained
- Low Level
- Child
- Examples:
  - Splinting
  - Bandaging
  - Simple C Spine

## □ Controlled

- Unfamiliar
- Complex
- Untrained
- High Level
- Parent
- Examples:
  - Angulated Fx
  - Uncontrolled Bleed
  - Kyphotic C-Spine immob.



# The Science of Multitasking

## □ Experiment #2

Again, state the colors as fast as you can

Row 1 **Red** **Blue** **Green** **Yellow**

Row 2 **Yellow** **Green** **Blue** **Red**

Row 3 **Green** **Red** **Yellow** **Blue**





# The Science of Multitasking

- **Executive System**
  - Not one isolated part.
  - Primarily prefrontal cortex.
  - Handles Controlled Processes.
  - Handles Task Switching.
  - Air Traffic Controller.



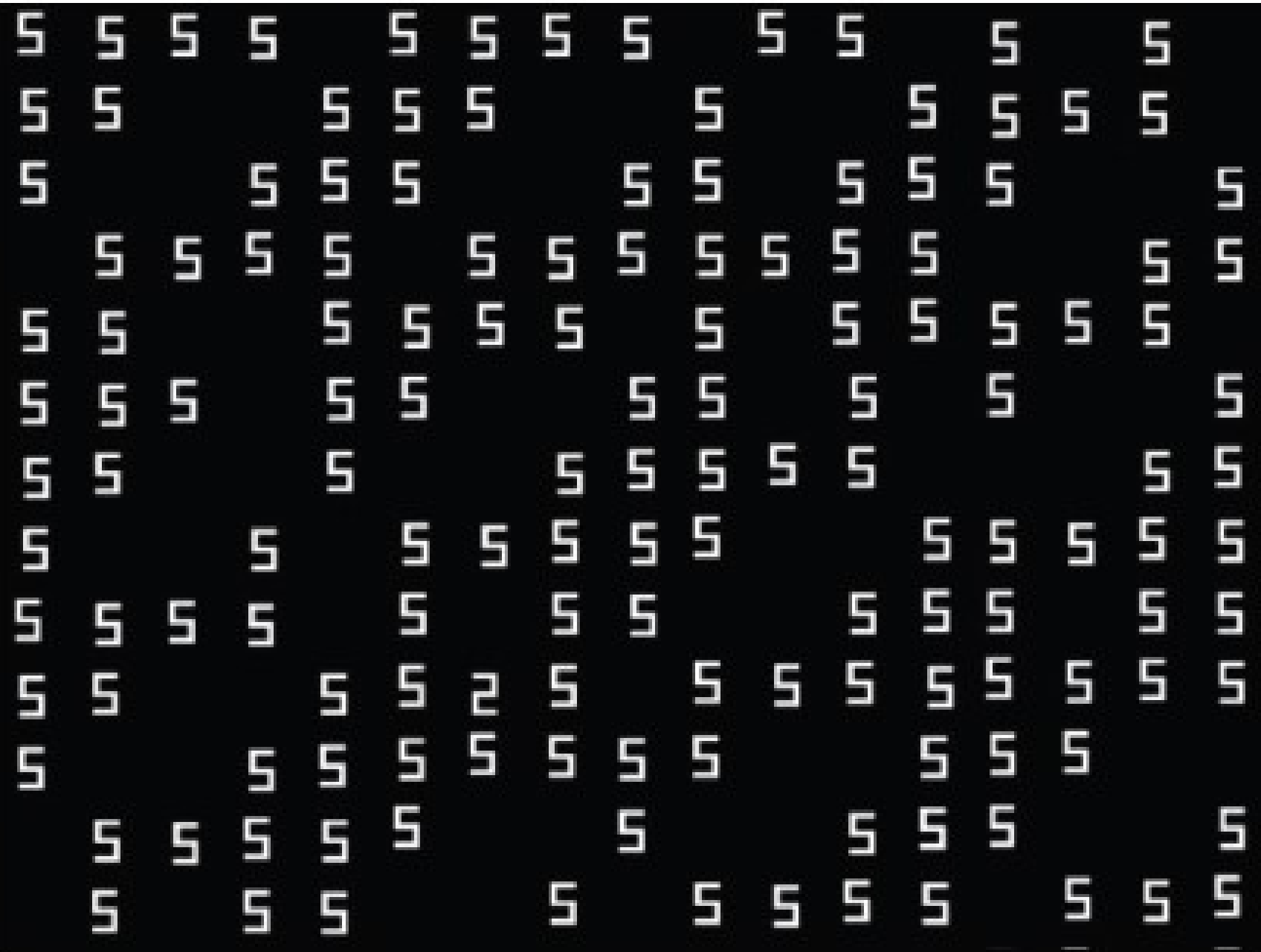


## Experiments #3 and #4



#4 Find the 2 in the 5s







## Multitasking and EMS

- “If I have ever made any valuable discoveries, it has been owing more to patient attention, than to any other talent.”*
- **Sir Isaac Newton (1720s)**



# The Science of Multitasking

- **The Magic Number Seven**
  - Phone numbers were originally 7 digits.
  - License plates typically 7 characters.
  - Span of Control in NIMS and ICS is 7.
  - The limits of what we can maintain in Working Memory.
  
- ***I give you, the 7 solutions to Multitasking.***



# What can we do about it?

- **1) FOCUS ON THE TASK AT HAND**
- **Identify & focus on Controlled Processes**
  - ▣ Decide what needs our full attention
    - Triage and prioritize
    - Recognize Controlled Processes
  - ▣ Pay attention / Reduce distraction
    - Increase Efficiency
    - Reduce Errors
    - Don't miss the Gorilla



# What can we do about it?

- ❑ **2) DELEGATE**
- ❑ Do more by doing less!
  - ❑ Delegate
    - Hand off to colleagues / subordinates
    - Hand off to the machines



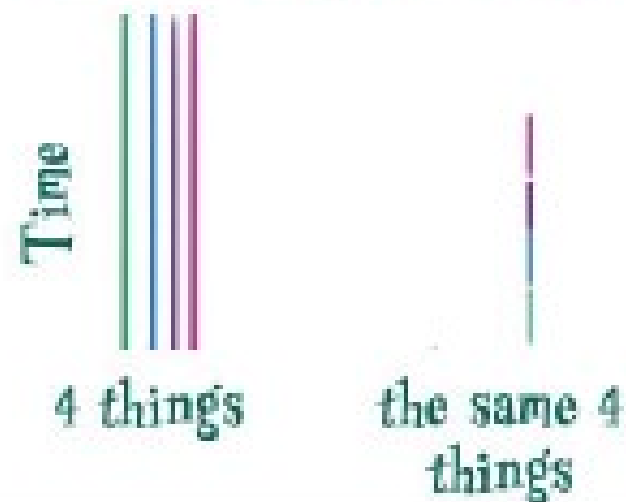


# What can we do about it?

## □ 3) SERIAL TASK

- One thing at a time.
  - One at a time is more efficient.
  - Focus and Prioritize first.

### Multitasking vs. Serial







# What can we do about it?

## □ 4) CONTROL YOUR ENVIRONMENT

### □ Engineering Controls

- Prompting reduces errors by moving tasks from Controlled to Automatic.
- Grouping items together: Pediatrics Kit.
- Labeling: Color Coding Medical Syringes.
- Access Control: Med Systems
- Alarms: Machine Monitored Limits





## What can we do about it?

### □ 5) MAKE IT AUTOMATIC

- If automatic is faster and easier then let's make more things Automatic.
- Focus on Fundamentals
  - Sports Professionals achieve a higher level of paying the game by practicing fundamentals so that they are Automatic, freeing their brain to work on the Controlled processes of strategy and tactics
  - How can we do the same in emergency services?

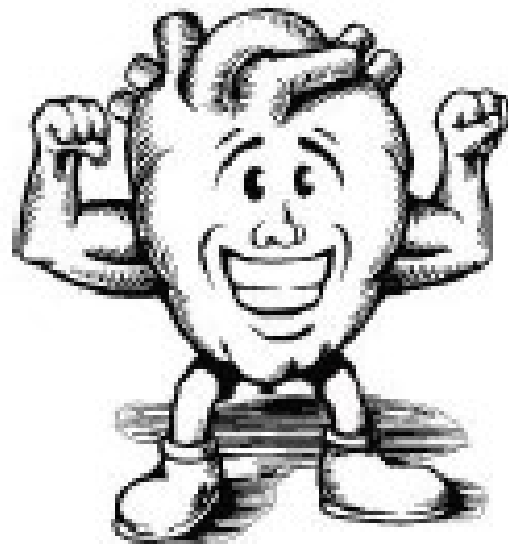


## What can we do about it?

### □ **6) EXERCISE YOUR HEART**

#### □ **Aerobic Exercise**

- Overall fitness will improve the outcome of all tasks
- Aerobic fitness improves cognition and function





# What can we do about it?

## □ 7) EXERCISE YOUR BRAIN

### □ Multitasking Training

- Training can also enhance the Executive System.
- The transferability of task improvement is debated.
- Recent research from Vanderbilt University shows Improvements in the ability to prioritize and task switch and a streamlining of executive functions.





## Multitasking & the rest of your life

- ❑ The specifics can be debated, but the core is irrefutable.
  - ❑ The Human Brain is not designed to multitask.
  - ❑ With rare exceptions, gaining efficiency through multitasking is an illusion.





## Multitasking & the rest of your life

- ▣ Multitasking affects the way we live and the way that we work on the street.
- ▣ Multitasking can be a necessary evil.
- ▣ The seven things we can do to manage multitasking.
  - 1) Focus on the task at hand
  - 2) Delegate Tasks
  - 3) Serial Task (One thing at a time)
  - 4) Engineering Controls
  - 5) Make it Automatic (Focus on fundamentals)
  - 6) Exercise Your Heart
  - 7) Exercise Your Brain



## Multitasking & the rest of your life

- **Parkinson's Law:**

*“Work expands so as to fill the time available for its completion.”*

- **Man Law: *No Multitasking.***



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