



# *Brain Health and Fitness*

*By*

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Chief, Human Dimension TF***

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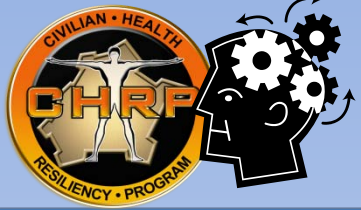
***LTC Liz Bobb  
Human Dimension TF***

***10 March 2010***

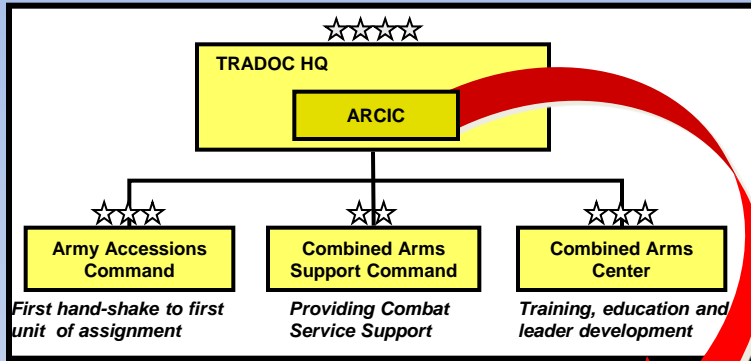
# Scope of Remarks



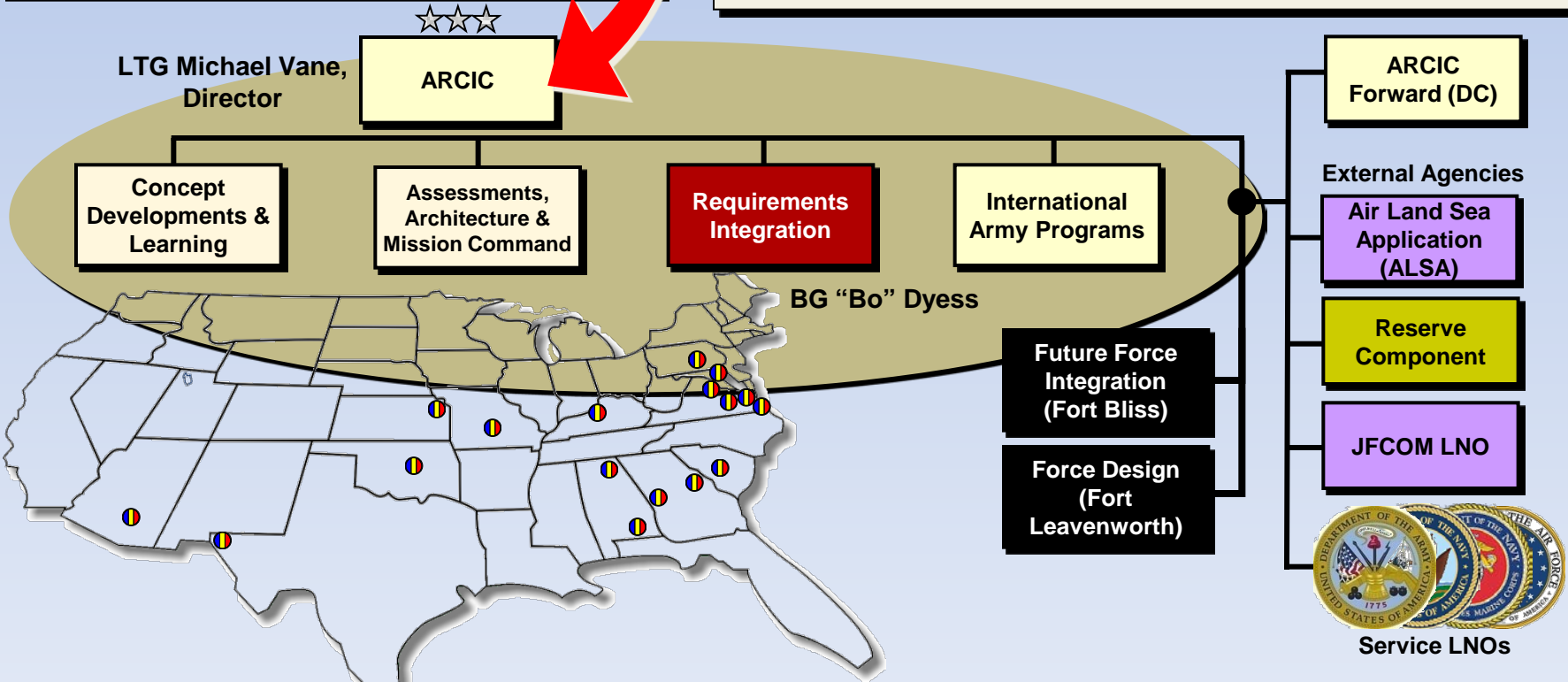
- ❑ Where We're from .....
- ❑ Factors Influencing performance
- ❑ Brain Stuff
- ❑ Building Resilience
  - ✓ Brain Health
    - Basics
    - Training
  - ✓ Tips
- ❑ Questions

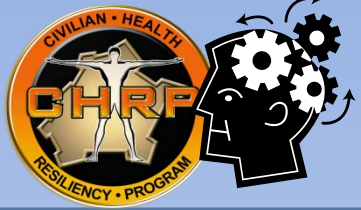


# We're From ....



*The Army Capabilities Integration Center (ARCIC) designs, develops, integrates and synchronizes force capabilities for the Army across the DOTMLPF imperatives into a Joint, Interagency, and Multinational operational environment from concept through capability development.*

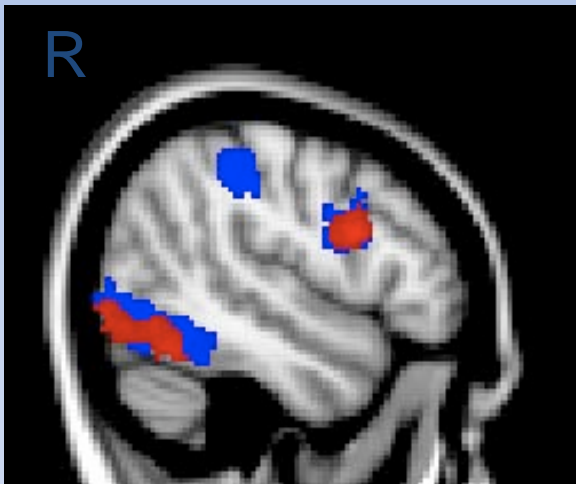




# Factors Impacting Performance

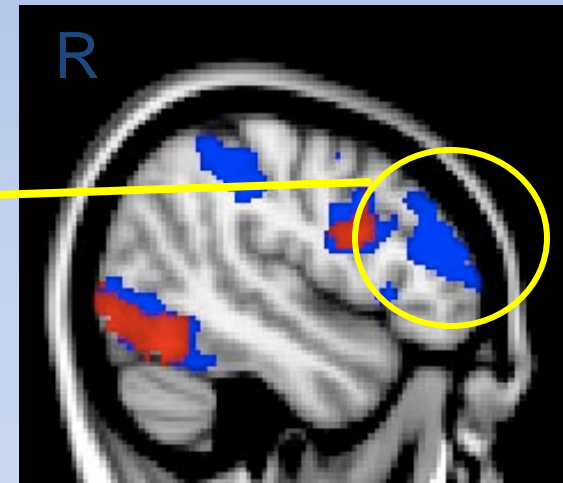


3.5% non-significant  
performance decline



Polar prefrontal  
cortex

27.5% performance  
decline



Significant differences between task and visual-motor control

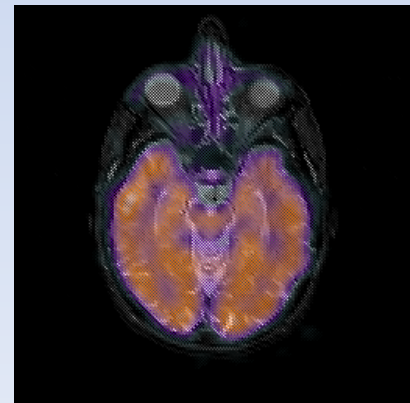
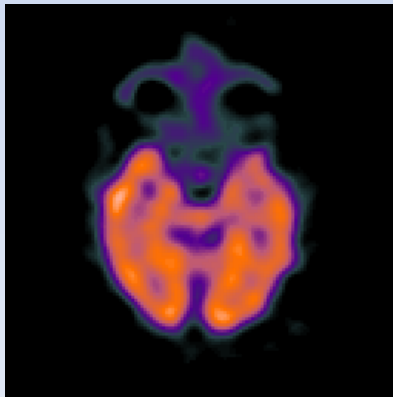
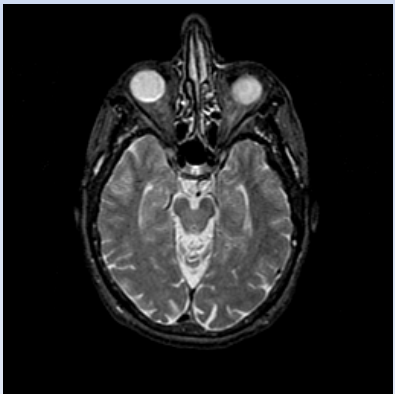
Resilience is susceptible to stress and sleep deprivation



## What we know ...



- 100 bil neurons, .6 cft, uses 2 w/hr vs. Super Computer @ 1600 sq ft, 5000 watts just for cooling
- Everyone “wired” differently – More synaptic connections than all known bodies in the universe i.e., billions
- 2% body mass, yet consumes 20% of the energy - alert or asleep
- Spatial Navigation differences – Men and Women *ARE* different



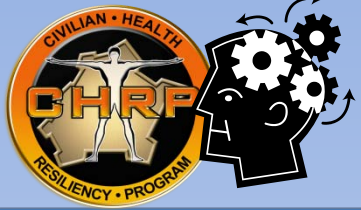


# *Are there Differences?*

## Mark Gunger: A Tale of Two Brains



[www.youtube.com/watch?v=GuMZ73mT5zM](http://www.youtube.com/watch?v=GuMZ73mT5zM)

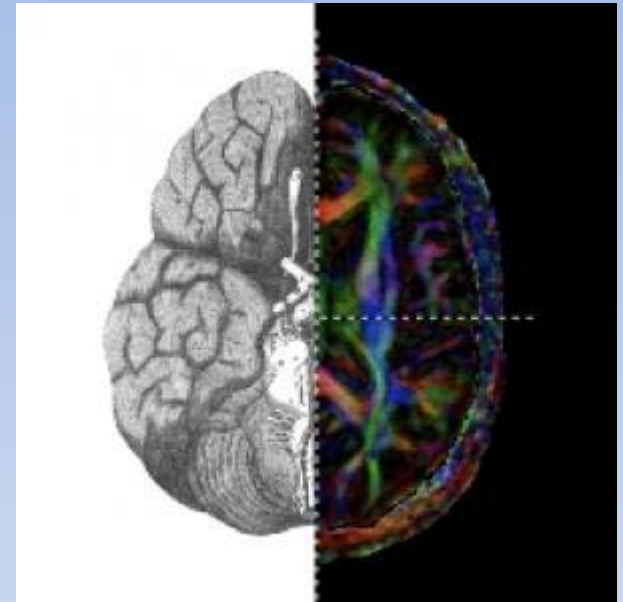


# What we know ...



## Facts continued:

- 3 seasons of the brain – Maturing, Adult, Aging
  - Maturing – 0 to 25/30 yrs;
  - Adult - 25/30 to 55 yrs; little or no change
  - Aging – > 55 - Shrinking begins – Can lose 2 to 8% or more brain mass for each decade!
- Butterflies - Cognitive Peaks affects Decision-making







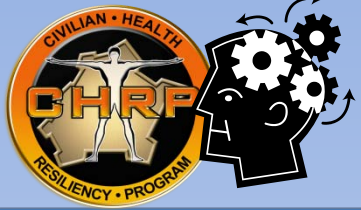
# Building Resilience





# Brain Health





# Nutrition



Hydrate



Balance Your diet

Increase good fats

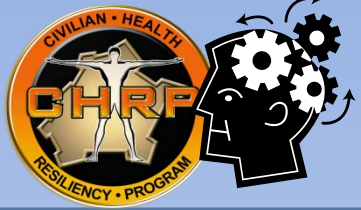


Reduce sugar/salt  
Limit caffeine



Increase Good carbs





# Tips for Immediate Stress Relief



Connect to a loved one



Prepare and know yourself



Exercise for a quick burst of energy



Fresh air



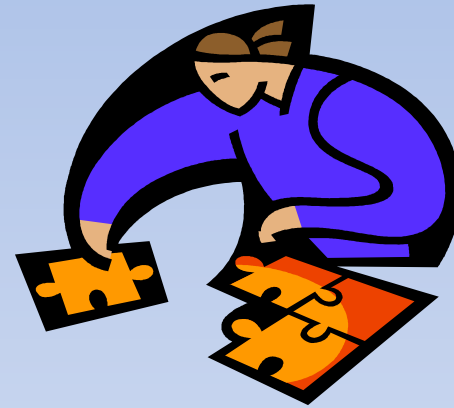
Small treat

Laugh



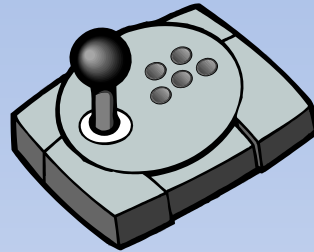
# Keys to Brain Training

- Games
- Meditation
- Tell Stories
- Reading
- Learn a New Skill
- Make simple changes

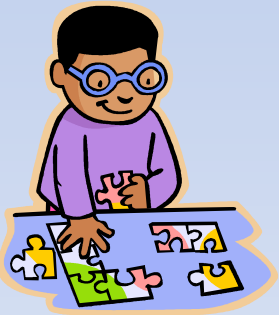




# Games



- Improve brain speed and memory



- Have fun but challenge yourself

- Tease/ challenge your brain





# What is the missing letter???

- J ? M A M J J A S O N D

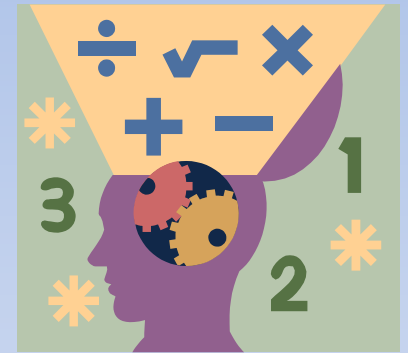


F as in the months of the year.

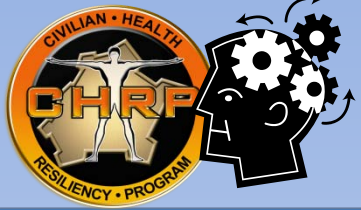


# Which is greater?

- Half of a quarter or quarter of a half



Both are equal:  $\frac{1}{2} * \frac{1}{4} = \frac{1}{8} *$  ;  $\frac{1}{4} * \frac{1}{2} = \frac{1}{8}$



# What direction?



There is an electric train traveling South. The wind is blowing from the north-west. In which direction would the smoke from the train be blowing?



Eeehh! Electric trains don't smoke!.





# Meditation



- Activates the most thoughtful part of the brain to improve decision making
- Most techniques include slow exhalation to slow heart rate and calm the body



- Supported by Decades of research
- Portable skill – anywhere, anytime, no incense required

# Telling Stories It...



- Solidifies memories



- Build connections



- Interpret events of your past
- Share moments

- Build pride



# Reading



Its Portable

- Try different genres
- Brain workout/ makes you more interesting



Sources:

- Library
- Internet
- Newspapers & Magazines



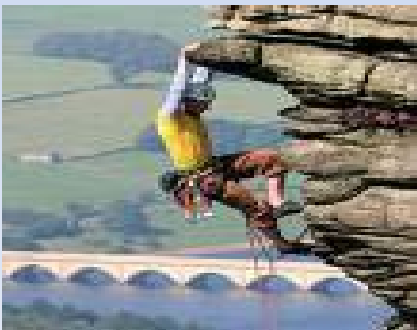
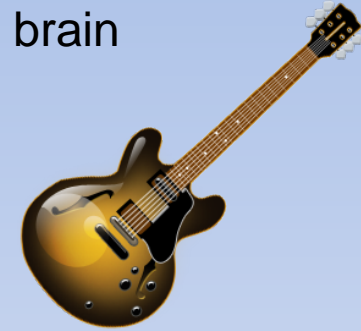
- Build connections



# Learn a New Skill



- Challenges your brain



- Works multiple areas of your brain

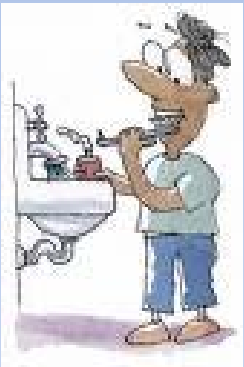


**Essential for mental agility**



# Make Simple Changes

Avoid Routines



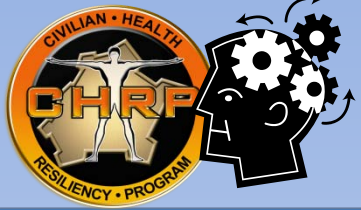
Mix it up



Explore local history and Culture



**Variety is the spice of life**

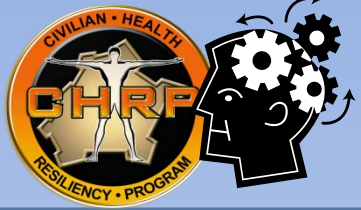


# Resilience Core Competencies



- Self-Awareness
- Self-Regulation
- Optimism
- Mental Agility
- Strength of Character
- Connections to Others

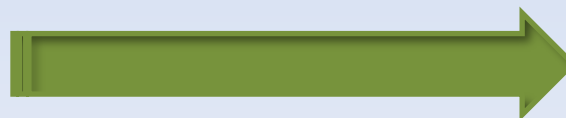




# MENTAL FITNESS RESILIENCE MYTH/FACTS



<u>Myth</u>	<u>Fact</u>
You don't show emotion	Regulate emotion
Its about the individual	Its about the individual and their relationships with others
You must handle everything on your own	Asking for help is a sign of strength and courage
Must always act fast	Know when to slow down
Must always feel composed	Sometimes not composed
You have it or you don't	Everyone can develop it





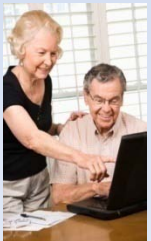
# Connections to Others



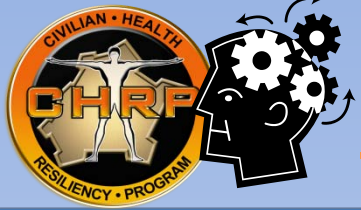
## Try Active Constructive Responding



- Respond with a style that leads to stronger relationships
- Build Strong Relationships
- Praise to build mastery and winning streaks
- Communicate clearly and with respect







# Optimism - Hunt the Good Stuff



- Counteract internal stress
- Gain appreciation of the little things
- Promote optimism, gratitude and health







# Nutrition

## 50 Best Brain Foods

Almonds  
Almond milk - unsweetened  
Apples  
Asparagus  
Avocados  
Bananas  
Beans – black, pinto, garbanzo  
Bell peppers – yellow, green, red and orange  
Beets  
Blackberries  
Blueberries  
Broccoli  
Brussels Sprouts  
Carrots  
Cheese- low fat  
Cherries  
Chicken, - skinless  
Cranberries  
Egg whites  
Grapefruit  
Herring  
Honeydew  
Kiwi  
Lemons  
Lentils



Limes  
Oats  
Olives  
Olive Oil  
Oranges  
Peaches  
Peas  
Plums  
Pomegranates  
Raspberries  
Red Grapes  
Soybeans  
Spinach  
Strawberries  
Tea – Green  
Tofu  
Tomatoes  
Tuna  
Turkey –skinless  
Walnuts  
Water  
Whole Wheat  
Wild Salmon  
Yams and sweet potatoes  
Yogurt- unsweetened

Source:  
Change your Brain,  
Change your Body  
Daniel Amen MD



# Final Thoughts

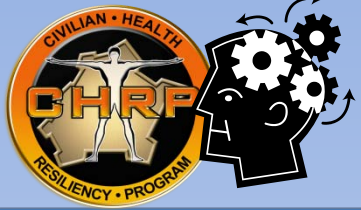


- Thru the Years:
  - Practice Life Long Learning
  - Keep Social Connections
  - Exercise – Its cognitive candy
  - Treat / Control Medical Conditions



- An unexpected boost for health





# Questions???



Finding humor in something that has gone wrong ...



Finding strength to work thru adversity...

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