Combat Brain Training

Created for the Warfighter, but everyone has a battle to win!

John Kennedy
President and Primary Neuroplastician
www.combatbraintraining.com
background
deep it roots

IBM

New Technology

Energy Conservation

Restaurants

Process!!
process and project management

Y2K
Sarbanes Oxley
PMO
Logistics reengineering
Business efficiency rebuilds
Large scale IT rollouts
capability maturity model

1. Ad hoc
2. Repeatable
3. Defined
4. Managing
5. Optimizing
2007 The US Marines contracted us to develop a program to reduce casualties in combat by improving intuition, focus and accelerating cognition.
MPT Effect on Defeating the IED Kill Chain

Motivation

Obtain Funds → Build Organization → Obtain Material → Improvise Device → Plan Attack → Knowledge Increase

Insurgents Hide Within Native Population

Cooperative communication between native population and US Armed Forces vital to Defeating IED’s - COIN

US Armed Forces

Predict
Detect
Prevent
Neutralize
Mitigate
Triage

HUMINT
PSY OPS
Behavioral Pattern Recognition
ISR / COMMS
Forensic Analysis

Sensors
Stand-off Detection
False Alarm Reduction
Pattern Recognition
Remote Surveillance

Deny enemy comms
Deny enemy free movement
Deny enemy ISR
Control access to materials
Jamming

Render IED safe
IED Disposal
Controlled Detonation
Forensic collection
Enemy Interdiction

Blast resistance
Blast containment
First responders
Medicine
Information Operations

Combat Life Saver
Medevac
Casevac
Covering Fire

Critical Mental Processes

Shape Recognition
Analysis/Synthesis
Categorization/Classification
Direction/Orientation
Abstract Sequencing
Kinosynthesis / Motor Integration

Mental Performance Training improves the efficiency of cognitive processes necessary to defeat IED’s in each link in the chain, as well as improve the ability to build critical relationships with local populations.
concepts
neuroplasticity

Neuroplasticity is the property of the brain that allows it to change its structure and function in response to what it senses, what it does and even what it thinks and imagines.”

– Norman Doidge, The Brain That Changes Itself
robust stimulation

“The development of particular neurological connections or skills does not occur gradually over time. Instead, such changes tend to occur suddenly, appearing in short intervals after robust stimulation, it is as if there is a single important trigger and then a functional circuit rapidly comes online.” – Akira Yoshii, MIT brain researcher.
progressively accelerated cognitive exertion™

- Fully sensory and higher order systems integrated approach
- Increases post synaptic receptors, increase speed of neural network
- Stimulates LTP (critical to memory and learning)
- New changes solidify in as little as 20 minutes
zombie systems

“A Zombie System is a set of sensory motor systems that can do very complicated behaviors in the absence of consciousness.”
- Francis Crick and Christof Koch
habits
zombie thinking™

Procedural = applications

Psychological = operating system

Foundational = processor
capability maturity model

1. Ad hoc
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targeted neuroplasticity training

Target defined mental processes with robust stimulation to physically change the brain very rapidly creating zombie systems at the foundational level.

- Executive Function
- Pattern Recognition
- Analysis/Synthesis
- Classification
- Abstract Sequencing
- Krinosynthesis
- Working Memory

Break it down, think it thru, EXECUTE!
faster processing speed

Cognitively Primed Anticipation™

Faster processing creates “Cognitively Primed Anticipation” (intuition) and accelerates mental and physical reaction times.
resiliency!

“optimizes System I & System II thinking to create a full-bodied meditative state that supports optimal sensory processing; and practicing that creates an underlying neural synchronization that is easier to return to, the more you practice it.”

Sherri Livengood, Neuroscientist
what happened?
initial pilot

“Worst platoon in Battalion”

- Nicknamed “Suicide Kings”, three attempts before we started
- Bottom in training results
- At one final testing urban assault course the previous year, they earned the dubious distinction as one of the worst performances on that course
test results

3 months embedded with platoon to develop and implement program. Objective test was cognitive skills test related to mental processing.
real world results

“One of best ever!”

- No more behavioral issues
- At IED course exceeded scoring limits
- Instructor said “best performance ever on this course”

Battalion CO – “These men move better and differently than any I have seen.”
from field to classroom
scout sniper course

From 40-60% drops to 1 drop per class

Highest marksmanship scores

“100% for both known and unknown Marksmanship. The scores will blow your mind! We had one with a 100% hit ratio!”

- GySgt Mike Skinta, Scout Sniper Course Officer in Charge
education

Over 8 weeks

• 20 minutes
• 2-3 times a week

“The results were amazing! ACT scores jumped 3 points, this creates huge opportunities for these kids.”

- Mark Hamstra, Class Advisor
sports training

Easily integrated into practice routines

“My focus and control now are incredible. I can anticipate my receivers and defensive movements faster.”

- Trevor Harris, CFL Grey Cup QB
“My brain used to feel like a ping pong ball bouncing around inside my head. For the first time I feel calmer, like there is a buffer calming the bounce” – TBI after 2 hours of CBT

“My friend commented on my lack of anxiety when we were driving together, I feel much calmer.” TBI (3) after 2 hours of CBT
bipolar depression

Robert was diagnosed with severe depression and BPD. Initial session – slouched, disengaged, slovenly.

After 6 CBT sessions, totally engaged, haircut, working out every day, signed up for art class and actively engaged in finding work.
Summer (12) had severe processing issues, held back twice, no intervention was helping.

Her Mom after 3 CBT sessions - “I am amazed, she is remembering her assignments, no more struggles with homework. She raised her hand for the first time ever in class and got the answer right!”
digital dementia

Prolonged exposure to digital screens which are too shallow to effectively stimulate the brain. “Use it or lose it”! Traders very susceptible.

Symptoms include loss of focus and memory and irritability. Significant improvements after just 2 sessions.
1 year after surgery, Jill could barely remember what happened the day before.

12 CBT sessions - “The change is miraculous – you would not know she had a problem. This year she planned, cooked and served Thanksgiving dinner for our entire family:” - Jill’s husband
“My people are learning faster and producing more with less stress.” – Dennis Pauls, Hub Insurance Midwest CEO

“This is the best program for my mental and psychological well being” – Martin G., Hub COO
leadership

- Marine Corps Infantry Squad Leaders Course
- Executive officer Leadership Training
- Corporate Leadership Programs

“CBT has significantly improved my ability to lead effectively” – Col. Jeff Tugle
Thousands improved performance!
train your brain
change habits

*Habits can be changed, but it's hard!*

2 ways to use neuroplasticity to change habits:

1) Replace through conscious repetition

2) Insert a new habit between cue and routine and repeat
getting out of bed
procedural zombie training replacement

On a non deadline day, set aside 30 minutes -

• *Set alarm*
• *Hop out of bed*
• *Repeat!!*
texting while driving
procedural zombie training
insertion

Count to 10 when text notification sounds

- Creates conscious window of choice
- Easy to wait 10 seconds
- May save your life
critical factor

Foundational Mental Processing Efficiency
Questions & Discussion
power of process
cognitive recovery

• Accelerates recovery
• Complements any other rehab program

“I woke up after the blast in the hospital with a 35 neuro-psych score. After using the exercises for a month, my score was 97! Now I’m planning officer for the Battalion.

- CWO Tom Layou
Chrystal (14) had 12 non cancerous brain tumors, crowding her brain creating cognitive issues including a 70 IQ.

Her Mom after 3 CBT sessions - “Her grades are improving and she’s able to focus when she studies. Her teachers have commented on her progress.”
capability maturity model

Process is paramount!

1) Ad hoc
2) Repeatable
3) Defined
4) Managed
5) Optimizing
Research <> Results

time from stimulus to response milliseconds

Research –
- Reductionist
- Peer reviewed
- Published
- Hope to produce effective results
- SLOW!

Results –
- Real world metrics
- No results, everything stops
- Continuous improvement built into reiteration
- FAST!
results emphasis!

“I don’t care what the tests say, if I don’t see improvements in my men, you’re out of here!”

Gen. Doug Stone, 29
Palms Base CO