



The Best Approach to Concussion Management

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PLEASE TURN OFF CELL PHONES



SQUIZPRINTS SERIES FROM SIDEKICK STUDIOS 2002-2005 ©

Overview

- Facts and Statistics
- Signs and Symptoms
 - Test Section 1: Subject Profile and Health History Questionnaire
 - Test Section 2: Current Symptoms and Conditions
-(STOP after putting in this information-Do NOT start testing)
- Test Section 3: Neuropsychological Tests
 - Module 1 (Word Discrimination)
 - Module 2 (Design Memory)
 - Module 3 (X's and O's)
 - Module 4 (Symbol Matching)
 - Module 5 (Color Match)
 - Module 6 (Three letters)

FACTS AND STATISTICS

- 10% of all contact sport athletes sustain concussions yearly
- NO lost of consciousness needed
- 63% of all concussions occur in football (Soccer is also in that range).
- Estimated that up to 20% of football/soccer players will sustain a concussion per season.
- An athlete who sustains concussion is 4-6 times more likely to sustain a second concussion (if not healed from the 1st concussion)
- Effects of concussion are cumulative in athletes who return to play prior to complete recovery
- The best way to prevent problems with concussion is to manage them effectively when they occur

SOME SIGNS/SYMPTOMS OF CONCUSSION

(this is **NOT** an all exhaustive list and different people can often have different signs/symptoms)

• Concussion Signs

- Appears dazed
- Confused about play
- Answers question slowly
- Personality/behavior change
- Forgets plays prior to hit
Retrograde amnesia
- Forgets plays after hit
Anterograde amnesia
- Loss of consciousness

• Concussion Symptoms

- Headache
- Nausea
- Balance problems
- Double vision
- Photosensitivity
- Feeling sluggish
- Feeling foggy
- Change in sleep pattern
- Cognitive changes

SECOND IMPACT SYNDROME

- Occurs in athletes with prior concussion following relatively minor second impact
 - - Second impact has been shown to occur up to 14 days post-injury
 - - Athlete returns to competition before resolution of symptoms
- Catastrophic increase in intracranial pressure
 - - Vasomotor paralysis, edema, massive swelling, herniation, death
- Cases have occurred in athletes <21 years old
 - 2 reported cases in college (Ever)
- - Neuro-chemical processes appear to differ in developing brain

What is ImPACT

- ImPACT was developed to provide useful information to assist in making sound return to play decisions following concussions.
 - **ImPACT is NEVER used as a stand-alone tool or as a diagnostic instrument.**
- Developed in the early 1990's by Dr. Mark Lovell and Dr. Joseph Maroon MD, and Michael (Micky) Collins, PhD
- ImPACT is a 25 - minute test

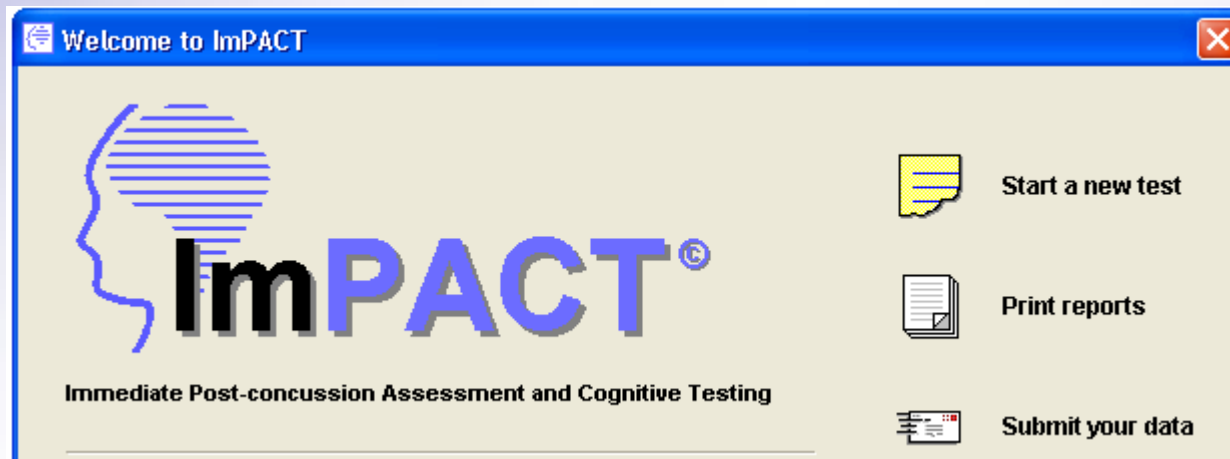
Who uses ImPACT?

- MOST National Football League
- All National Hockey League Teams
- All Major League Baseball Teams
- All Major League Umpires
- All Major League Soccer Teams
- National Basketball Association
- Professional Automobile Racing
- National Rugby teams
- Olympic Sports
- Junior Hockey
- US Army
- US Navy
- Saskatchewan Roughriders
- Sioux City Bandits
- Spidertech Pro Cycling - Ontario
- Swiss Ice Hockey League
- AHL - Texas Stars Hockey
- AHL Portland Pirates
- AHL Syracuse Crunch
- All American Football League
- All Pro MX Performance
- Mx Sports Pro Racing
- Omaha Lancers
- Philadelphia Wings
- Pittsburgh Ballet Theater
- Sports Medicine Centers /
Neuropsychology Clinics / Doctors
- **Over 3,000 Colleges /
Universities**
- **Over 12,000 High
Schools / Club Teams**
- **AND MORE.....**

Concussion is it really a big deal?

[Video goes here]

Starting ImPACT



Test Section 1: Subject Profile and Health History Questionnaire

▶ First Name
▶ Last Name
▶ Organization
▶ Height
▶ Weight
▶ Gender
▶ Handedness
▶ Country
▶ Native language
▶ Second language
- Years speaking
- Years in North America
▶ Years of education completed
▶ Check any of the following that apply
- Received speech therapy
- Attended special education classes
- Repeated one or more years of school
- Diagnosed ADD or Hyperactive
- Diagnosed learning disability
▶ Current sport
- Current position/event/class
- Current Level
▶ Years experience

Identification

Language/Lengua:

Enter the subject's identification number and date of birth below. If available, use the social security or social insurance number as the identification number. Otherwise, assign a unique identification number to the subject.

SSN/Identification #:

Date of Birth: (MM/DD/YYYY)

Language

Native country/region:

Native language (or language group):

Second language (or language group):

Years speaking:

Years in North America:

Questionnaire

- Clinic name: **Carolina West Sports Medicine**
- School – **“SWAIN County HIGH SCHOOL”**
- 1st Name – **Kristi “Kate”**
- “Handedness” **Right hand, Left hand, both**
- Sport and Health History –
“Years of Education **COMPLETED**”
 - In 6 grade now 5 years; - In 7 grade now – 6 years;
 - In 8 grade now -7 years
 - Freshmen: 8 years; - Sophomore: 9 years;
 - Junior: 10 years - Senior: 11 years

Questionnaire

- “Position/event/class” What position on the team do you play?
- “Current level” Varsity or JV / FB, Soccer, BKB, etc..
- **Completed** years of playing (**sport in HS**)

- Number of times diagnosed with a concussion?
 - Date/year
- *Second Language?*
 - *speak fluently*
- “Strenuous exercise in the **last 3 hours**”?

Test Section 2: Neuropsychological Tests

Other Medical History

Indicate whether you have experienced the following:

Yes No Treatment for headaches by physician
 Yes No Treatment for migraine headaches by physician
 Yes No Treatment for epilepsy/seizures
 Yes No History of brain surgery
 Yes No History of meningitis
 Yes No Treatment for substance/alcohol abuse
 Yes No Treatment for psychiatric condition (depression, anxiety)

Current Conditions

Date of last concussion: (MM/DD/YYYY)
(approximate if uncertain)

Hours of sleep last night:

Current medications:

■ Number of times diagnosed with a concussion

■ Total number of concussions that resulted in loss of consciousness

■ Total number of concussions that resulted in confusion

■ Total number of concussions that resulted in difficulty with memory for events occurring immediately after injury

■ Total number of concussions that resulted in difficulty with memory for events occurring immediately before injury

■ Total games were missed as a direct result of all concussions combined.

■ List the 5 most recent concussions

■ Indicate whether you have experienced the following

■ Treatment for headaches by physician

■ Treatments for migraine headaches

■ Treatment for epilepsy/seizures

■ History of brain surgery

■ History of meningitis

■ Treatment for substance/alcohol abuse

■ Treatment for psychiatric condition (depression, anxiety, etc.)

Test Section 3: Current Symptoms and Conditions

CURRENT SYMPTOMS
✓ Headache
✓ Nausea
✓ Vomiting
✓ Balance Problems
✓ Dizziness
✓ Fatigue
✓ Trouble falling asleep
✓ Sleeping more than usual
✓ Sleeping less than usual
✓ Drowsiness
✓ Sensitivity to light
✓ Sensitivity to noise
✓ Irritability
✓ Sadness
✓ Nervousness
✓ Feeling more emotional
✓ Numbness or tingling
✓ Feeling slowed down
✓ Feeling mentally foggy
✓ Difficulty concentrating
✓ Difficulty remembering
✓ Visual problems (blurry or double vision)

Current Health - Symptoms

Click the box or button below that indicates the degree to which you are **currently** experiencing the following symptom:

Headache

Not experiencing this symptom

1 2 3 4 5 6

Minor Severe

Cancel << Previous Next >> Finish

After answering ALL these questions STOP – Please DO NOT START the test!

Remember!!!!

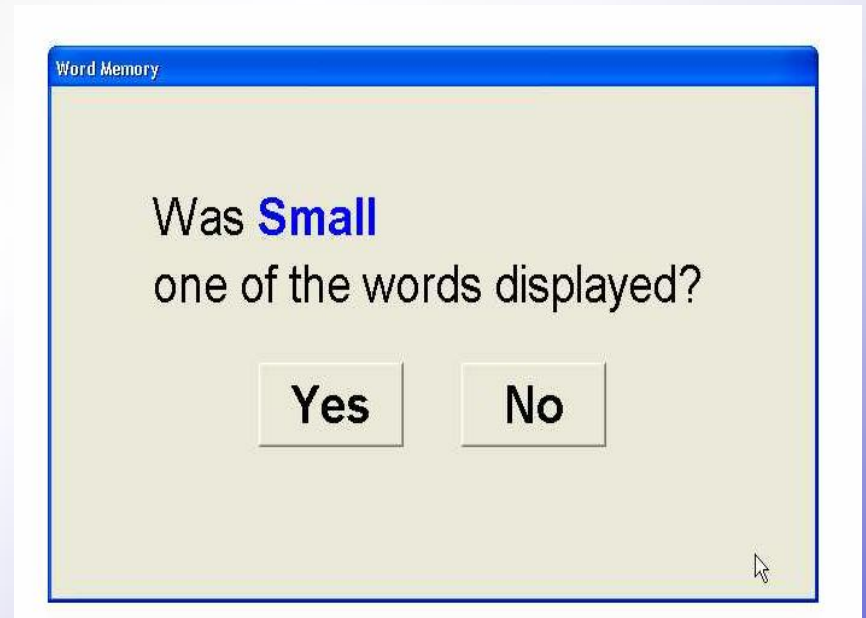
- After questionnaire...
- PLEASE DO NOT START TEST UNTIL EVERYONE is ready and I say Go!!

ImPACT

- Has six different tasks
- It is much like a game
- Some tasks are Yes or No
- Other tasks are needed to be done as FAST and ACCURATE as you can

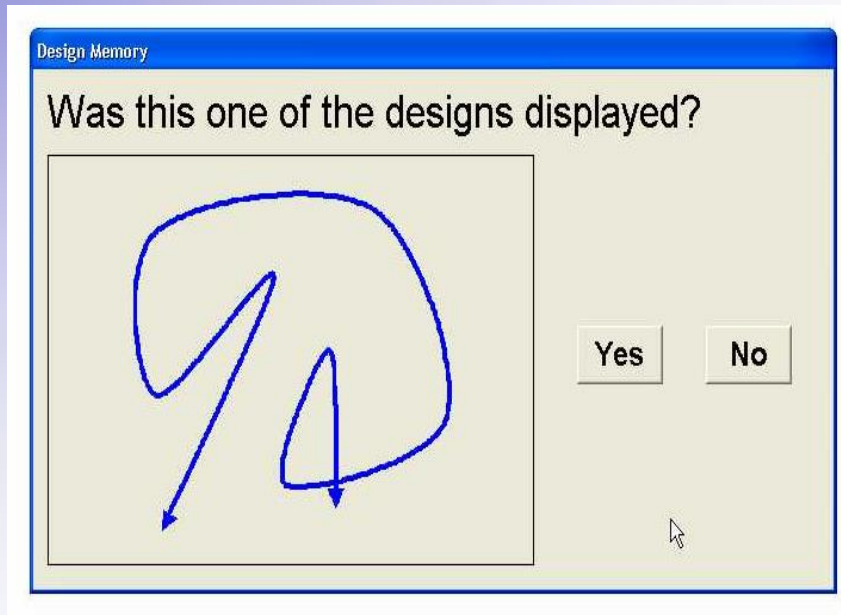
Module 1 (Word Discrimination)

- A set of words are shown
- Then asked:
 - Is this one of the words displayed?
- Yes or No



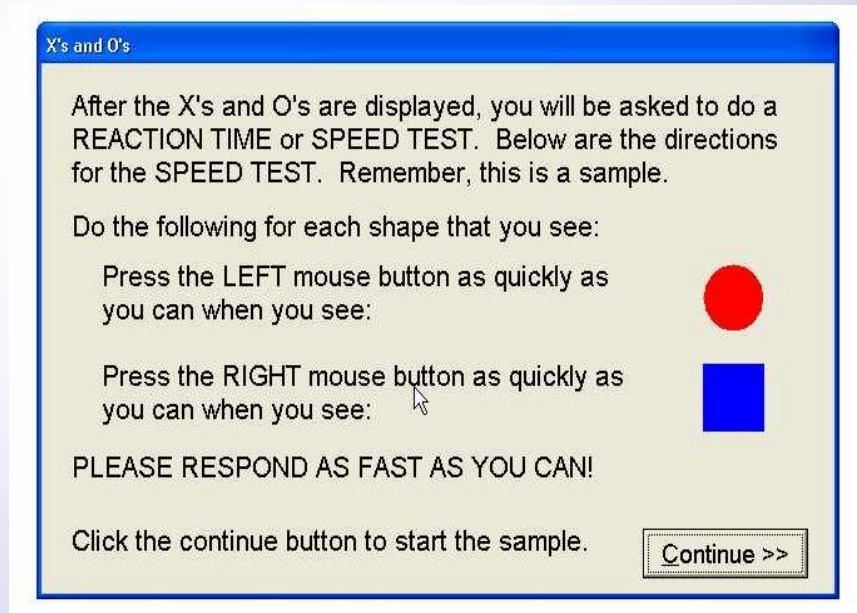
Module 2 (Design Memory)

- A set of designs shown
- Then asked:
 - Is this one of the designs displayed?
- Yes or No



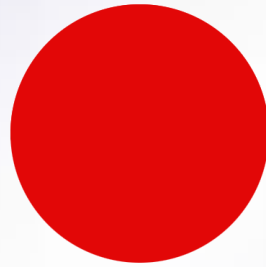
Module 3 (X's and O's)

- **First task:**
 - A random assortment of X's and O's is displayed - three of the X's or O's are illuminated in YELLOW (remember them)
- **Next task:**
 - press the **Q** button as quickly as you can when you see:
 - Press the **P** button as quickly as you can when you see:

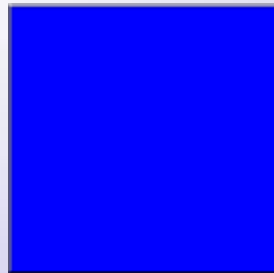


Module 3 (X's and O's) Continue...

- Press the **Q** button in the upper left hand corner of the keyboard as quickly as you can when you see:



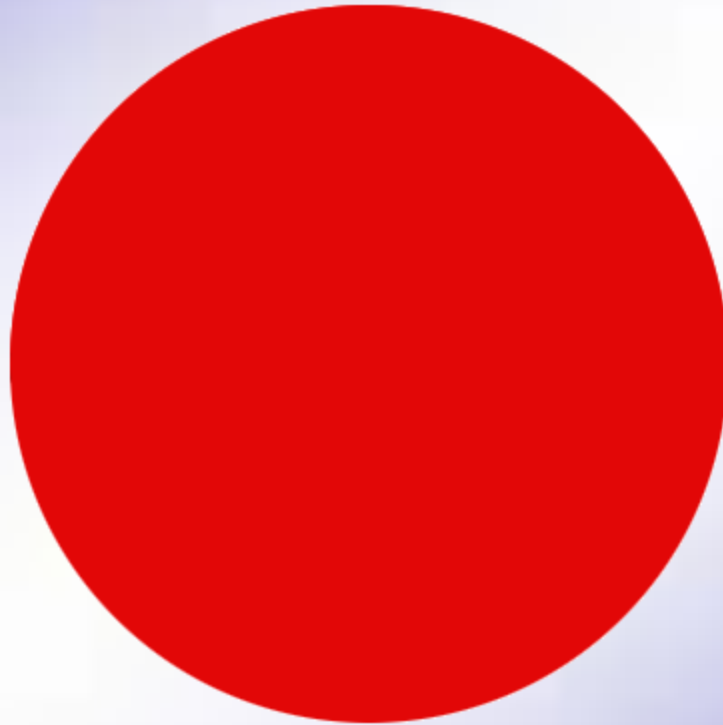
- press the **P** button in the upper right hand corner of the keyboard as quickly as you can when you see:



Remember which are Yellow

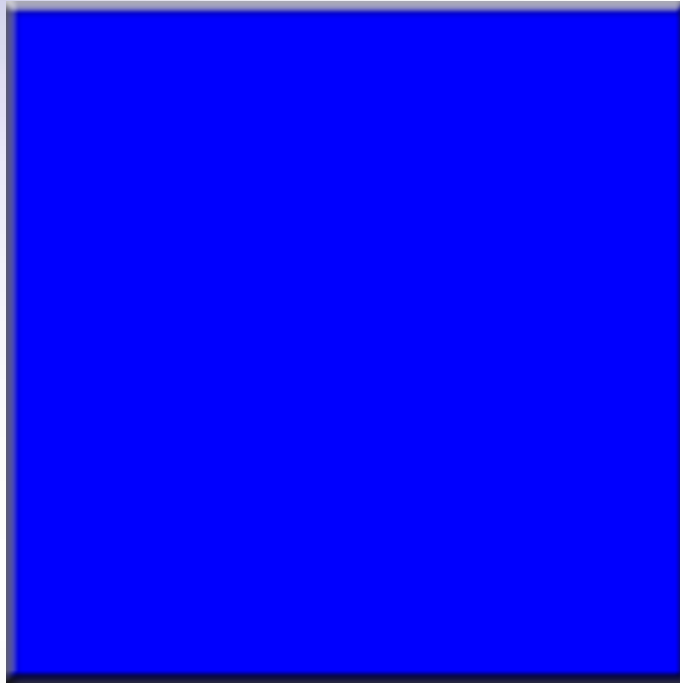
X	O		O	X		X	X	O
O		X	O		O		O	
X	O			X		X		O
	O	O		X		X	O	
O	X	O	X	O	O		X	

Click Q or P??



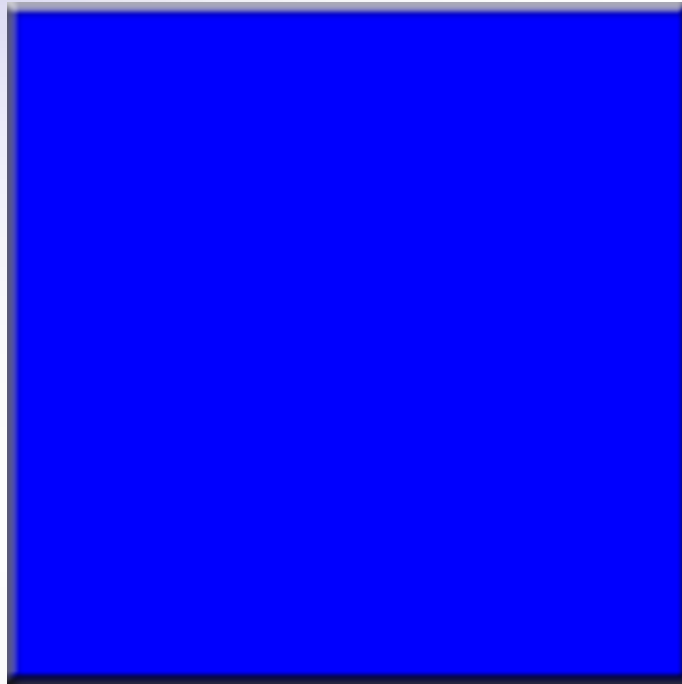
Q

Click Q or P??



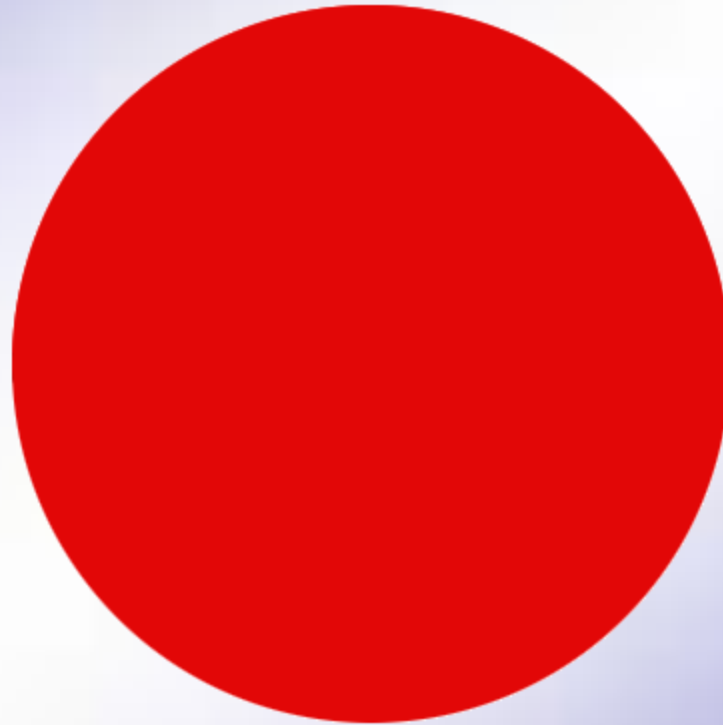
P

Click Q or P??



P

Click Q or P??



Q










Which were Yellow?

X	O		O	X		X	X	O
O		X	O		O		O	
X	O			X		X		O
	O	O		X		X	O	
O	X	O	X		O	O	X	


Module 4 (Symbol Matching)

- Click the matching number as quickly as possible and to
- Remember the symbol/number pairings

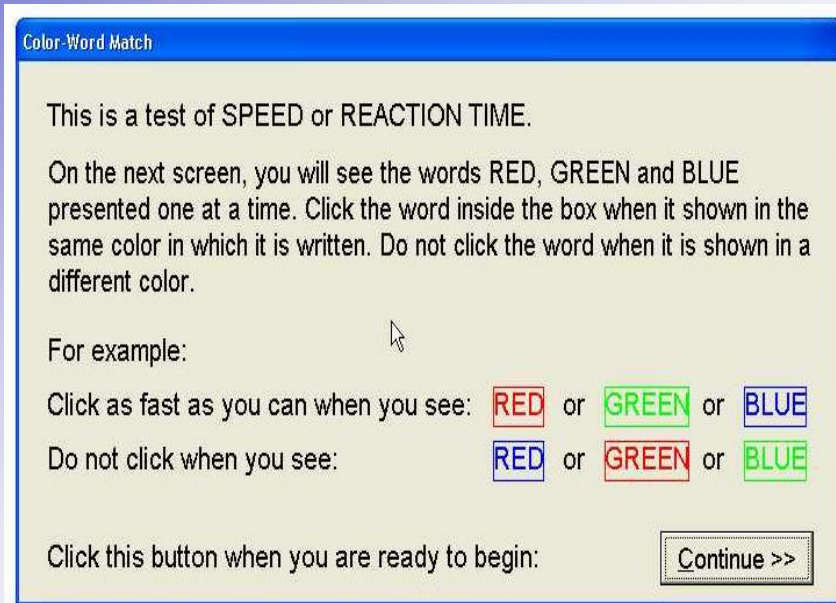
Symbol Search

								
1	2	3	4	5	6	7	8	9

Click on the number that corresponds to the following symbol:



Module 5 (Color Match)



- As FAST and ACCURATE as you can
- Click on the word when you see:
 - RED, GREEN, BLUE
- **Do NOT** click when you see:
 - RED, GREEN, BLUE
 - RED, GREEN, BLUE
 - Does NOT effect color blindness

Click or don't click?

RED

Yes, Click on it

Click or don't click?

BLUE

No

Click or don't click?

GREEN

Yes, Click on it

Click or don't click?

RED

No

Module 6 (Three letters)

- First task:
 - As FAST and ACCURATE as you can
 - Starting with 25 count down to 1
 - (Ex, 25, 24, 23, 22, 21, etc...)

Three Letters (Pass 1 of 5)

Click each of these buttons in BACKWARD ORDER.

Start with 25 and count down to 1 AS FAST AS YOU CAN.

3	19	14	22	17
23	13	8	4	5
16	20	2	7	10
21	11	18	12	9
1	15	25	24	6

If you make a mistake, use the "Go back" button to clear the buttons you have already clicked, one at a time.

<< Go back

Next task:

- You will be asked to remember 3 letters.

Remember three letters AND in
that order

• **K A P**

Count backwards 25, 24, 23, etc...

Three Letters (Pass 1 of 5)

Click each of these buttons in BACKWARD ORDER.

Start with 25 and count down to 1 AS FAST AS YOU CAN.

3	19	14	22	17
23	13	8	4	5
16	20	2	7	10
21	11	18	12	9
1	15	25	24	6

If you make a mistake, use the "Go back" button to clear the buttons you have already clicked, one at a time.

<< Go back

What were the three letters?

___?___ ___?___ ___?___

K A P

Please be Respectable to ALL

- PLEASE KEEP QUIET at ALL times!
- READ ALL Directions CLEARLY Before starting each task!!!!
 - REMEMBER to **STOP** after going through “Current Symptoms and Conditions” Do **NOT** start test until after I say Go!!
- Do your BEST - work quickly and accurately
 - **If not, the test WILL show such and You WILL RETEST!!!**
 - ALL information is Strictly Confidential!
- Do **not** worry about printing at the end of the test

Any Questions?

- Thank you for your time and for doing your very best.
- If you don't do your best it will show up on the test and **you WILL have to re-test!**
- Have a Fun and SAFE season!

Reference

- <http://www.impacttestoffice.com>
- <http://www.impacttest.com>
- <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2672291>