



See It, Believe It, Teach It!

**Promotes hand-eye coordination,
ambidexterity, quickness and concentration**

SPORT STACKING* WITH SPEED STACKS: A RATIONALE

(Please note that in January, 2005, the sport of cup stacking was officially renamed “sport stacking” by the World Sport Stacking Association (formerly the World Cup Stacking Association).

Speed Stacks believes that sport stacking helps develop motor skills, patterning, sequencing, focus and concentration. We believe it promotes hand-eye coordination and ambidexterity, which are important skills in most any sport. We believe it gives students the opportunity to use both sides of their body and brain to improve bilateral proficiency. We believe it encourages students to set goals through establishing personal records and reinforces perseverance and practice as the way to improve those records. We believe that sport stacking reinforces the value of teamwork and the importance of never giving up. In Sport Stacking we teach “Fix your fumbles when they happen, and Never give up!” We believe that these are pretty good lessons to use in life, too.

BOB FOX, OWNER AND FOUNDER OF SPEED STACKS: “Our claims about the benefits of sport stacking come from a variety of sources. We have relied on the research of “brain experts,” the testimony of Physical Educators and first-hand experience to support what happens to students when they participate in sport stacking. I would like to share with you some of the results of scientific research, quotes and comments I have received. And, in addition to what the “experts” are saying, I would like to share the fact that sport stacking has impacted my own children in very positive ways. From their ball-handling skills in basketball (our daughter has started on her high school basketball team since she was a freshman, and is known for her quick hands and ball-handling skills) to reading (our youngest son has overcome a significant eye condition called nystagmus, where he had difficulty tracking; he is a terrific reader now and we can’t help but believe that sport stacking has been a primary reason.)

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Please feel free to call me at any time to discuss any of the materials presented here.

STUDIES

“THE INFLUENCE OF CUP STACKING ON HAND-EYE COORDINATION AND REACTION TIME OF SECOND-GRADE STUDENTS” by Brian E. Udermann, University of Wisconsin—Lacross, Steven R. Murray, Mesa State College, John M. Mayer, US Spine and Sport Foundation Lajolla, CA and Kenneth Sagendorf, Syracuse University

This complete study is available upon request . In summary, this study states that after 5 weeks of sport stacking, “hand-eye coordination in both the dominant hand and non dominant hand was increased from between 26.93% and 37.82 percent respectively.” It also states that after 5 weeks of sport stacking reaction time was increased between 33.1% and 25.94% for the dominant and non dominant hands, respectively.

Melanie A. Hart, Ph.D. Assistant Professor
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Dr. Hart is researching what the brain activity is while a person is sport stacking, testing activity in each hemisphere of the brain. Results of this study are in, but not yet published. We will include these results as soon as we are able.

CHRIS K. RHEA, KATHY LUDWIG AND MONIQUE MOKHA. BARRY
UNIVERSITY, MIAMI SHORES, FL

This study was done to track the influence of cup stacking (sport stacking) on psychomotor parameters. The purpose of this study was to measure upper limb coordination changes using a five week cup stacking intervention. “We found that cup stacking (sport stacking) has a positive effect on the development of bilateral coordination in sixth grade physical education students...The results of this study suggest that cup stacking (sport stacking) may lead to better development of bilateral coordination.”

SHIRLENE DAVIS, UNIVERSITY OF NORTH CAROLINA AT PEMBROKE
Shirlene conducted an unpublished study as a research project, titled “CUP STACKING AND ITS EFFECT ON READING SCORES IN SIXTH GRADE ELEMENTARY SCHOOL STUDENTS”. We quote her here:

“The purpose of this study was to use cup stacking, (sport stacking) a brain-based activity, to see if there are any differences on the STAR Reading Test

Scores for those who participate in cup stacking and for those who do not. The STAR reading Test was used to assess students' reading level before and after the study. The experimental group received cup stacking twice a week for four weeks between testing, and the control group did not. It was found that the experimental group who used cup stacking (n=12) achieved higher scores on the STAR Test during the posttest than the control group, which had no cup stacking instruction (n=12). It was concluded that the brain-based activity of cup stacking might have contributed to the increase in the achievement level of the experimental group on the STAR Reading Test."

NATIONAL AND STATE STANDARDS

NASPE Standards

According to NASPE, physical education classes should help develop movement competency and proficiency. "Movement competency is the development of sufficient ability to enjoy and participate in physical activities and establishes a foundation to facilitate continued motor skill acquisition and increased ability to engage in appropriate motor patterns in daily physical activities." (NASPE 1995) In order to develop certain manipulative skills taught in PE classes, it is necessary to teach hand-eye coordination activities. Many schools have chosen the sport stacking. Sport stacking can promote hand-eye coordination, ambidexterity, quickness and concentration.

NASPE Standards addressed using sport stacking activities:

- 1.) Demonstrates competency in many movement forms and proficiency in a few movement forms.
- 2.) Applies movement concepts and principles to the learning and development to motor skills.
- 3.) Achieves and maintains a health-enhancing level of physical fitness.
- 4.) Demonstrates responsible personal and social behavior in physical activity settings.
- 5.) Understands that physical activity provides opportunities for enjoyment, challenge, self-expression, and social interaction.

COLORADO STATE STANDARDS:

"1.3.14: Identifies Activities that necessitate crossing the midline of the body. Assessment examples: Describe movements that require crossing the midline, such as batting, juggling and cup stacking (sport stacking)."

Speed Stacks has reviewed and documented how sport stacking meets the TENNESSEE ASSOCIATION OF HEALTH, PHYSICAL EDUCATION, RECREATION AND DANCE STANDARDS and TEXAS ESSENTIAL

KNOWLEDGE AND SKILLS FOR ELEMENTARY PHYSICAL EDUCATION.
These are included as a separate document.

BRAIN RESEARCH

(Jean Blaydes Madigan, Neurokinesiologist—Murphy, TX)

“What makes us move, makes us think. New learning follows established motor patterns first before it is stored in the cortex. Therefore, if we teach our students to move better, the better thinkers they will become. The brain seeks patterns. Locomotor movements are built on patterns. Information that is arranged in patterns is more easily processed, retained and retrieved.

Cross lateralization/crossing the midline; when one crosses the midline the brain begins to make new connections and the right and left hemispheres begin to work together. This communication process organizes the brain for better concentration and problem solving. Crossing the midline integrates brain hemispheres to enable the brain to organize itself. When students perform cross lateral activities, blood flow is increased in all parts of the brain making it more alert and energized for stronger, more cohesive learning. Movements that cross the midline unify the cognitive and motor regions of the brain: the cerebellum, basal ganglia, and corpus callosum while stimulating the productions of neurotrophins that increase the number of synaptic connections. (Dennison, Hannaford) Most all of the activities we do in physical education cross the midline and require coordination of body systems for mastery at any level. Daily quality physical education then becomes essential for optimum learning.

Eye tracking exercises and peripheral vision development helps reading. One of the reasons students have trouble with reading is because of the lack of eye fitness. When students watch screens their eyes lock in constant distant vision and the muscles that control eye movement atrophy. Physical education curriculum provides this avenue for strengthening eye muscles. Tracking exercises, manipulatives, navigation activities and target games exercise the eye muscles, making the eyes fit to read.”

The brain is attracted to novelty. The brain learns best when more of the senses are involved. Color, sounds, music, smells, manipulatives and navigating space are better remembered. Learning environments filled with enriched sensory input enhances cognition. Brain compatible learning perceived as FUN increases success.”

QUOTES FROM PROFESSIONALS

Dean Brittenham, Athletic Director, Scripps Clinic, Shiley Sports and Health Center, San Diego: “The great athletic performers are ambidextrous. Look at Magic Johnson, Larry Bird and Michael Jordon. They’re ambidextrous and right-side brain players – very creative and very aware. Cup stacking (Sport stacking) develops ambidexterity and creativity.”

Eric Jensen, author of Teaching with the Brain in Mind: “... My opinion is that it probably is a great activity for: perceptual-motor skills, dexterity, fine and gross motor development, cognition and enhanced connectivity.”

Rhonda Holt, 2000 NASPE Elementary Physical Education Teacher of the Year: “Sport stacking relates directly to brain research and the benefits of students crossing the midline. Sport stacking helps promote all fundamental motor skills. I see it as a tool to help students find success academically.”

Carol Martini, 2002 NASPE National Secondary School Teacher of the Year: “I have gone from a complete skeptic to a complete addict. My high school students love it! I am a strong advocate of kinesthetic activities. Sport stacking appeals to the kinesthetic learner. I agree with recent brain research that confirms the benefits of students using both sides of their brains and bodies. With sport stacking, students are crossing the midline in a really enjoyable and unique activity.”

Dave Wheaton, Special Ed Teacher: “I have **15 special needs** students ranging from learning disabilities to multiple disabilities. My hope was to get them at least to do a few of the low advanced skills such as the three stack and possibly the 3,3,3 stack. Now, after 6 months of 15 minutes a day, 10 of my 15 students are doing the complete cycle. Two of my students, according to your 5th grade results finder divisions, would be ranked unofficially in the top 10 posting scores of 11.24 and 13.10. I also have a student who only has the use of one hand and can do the complete cycle! Thanks Speed Stacks, for making these kids feel successful!”

Jan Megarry, Academic and PE Teacher, Colorado School for the Deaf and Blind: “As educators we see positive aspects of having our students do cup stacking (sport stacking). Our Occupational therapist sees the value in doing cup stacking, because it works on cross-laterality with which many of our students have difficulty. As an academic and PE teacher I see great worth doing cup stacking. The process used when stacking cups assists our students with directionality, organization, coordinating both hands, focus, as well as giving them a sense of accomplishment. We have found cup stacking is a great reward and motivator!”

Kathy Kochersperger, Adaptive Physical Education – ahas! “For students with cognitive and/or perceptual motor delays – cup stacking (sport stacking) positively: gives teachers a chance to observe depth perception problems more easily than observing these difficulties during motor skill practice or a movement activity; it helps determine dominant hand, especially with students not aware of which hand is the preferred hand; helps develop bilateral coordination, with 2 hand use; helps students “softly” control movements – to get the cups to slide correctly; helps with fine motor coordination – to “square” the placement of the cup on top of others for a “bridging effect”; helps develop dexterity – as more than one cup is held in one hand. In addition, the activity of sport stacking is great fun, and has potential for fitness development. Students love the play and will spend hours of concentrated effort to perform the skills involved, and sometimes make up their own.”

Tim Anderson, PE Teacher: “I am writing to you to let you know what one of my parents said to me about her daughter and cup (sport) stacking...”My daughter has never been interested in anything, all she wanted to do was watch TV. She didn’t like playing with others. Now, since she started cup stacking in your after school program she has become a whole new person. I can’t begin to

tell you how many times we have watched the sport stacking DVD. She is playing with other kids that are also cup stacking, and she is showing an interest in other things instead of just TV. Cup stacking has been a blessing for me and my daughter.” Thanks, Bob, for all you do in better Physical Education!”

CONCLUSION

Speed Stacks hears from PE teachers, Reading Specialists, APE teachers, parents, camp directors, youth leaders, Athletic Trainers, Coaches, OT's, PT's, Brain Rehab Specialists and others every day about the positive effect sport stacking has had on their kids. We know kids LOVE it! We know it is a great motivator and reward for many students. We know it helps develop high self esteem in lots of kids that find success Sport Stacking.

Please contact us if you have any comments or questions about Sport Stacking and how it might fit into your program.

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