

## • THE SCIENCE OF YOGA •

How does yoga work? Scientific research on the neuro-physiology of yoga demonstrates that it is truly the “world’s oldest and most perfect form of exercise”(Gessner Geyer). The practice of yoga has demonstrable efficacy in reducing stress, achieving emotional balance, developing focus and enhancing cognition. In addition, yoga improves cardiovascular, respiratory, musculo-skeletal, endocrine and nervous system health.

Here’s the science behind the response: When you are rushed, anxious, angry, frustrated, sad, etc., the body responds by producing the hormones adrenalin and cortisol. These chemical messengers cause the heart rate to speed up, the breath to become shallow, the blood to be diverted from the brain and organs to the large muscles of the arms and legs, the eye muscles to expand (making one-pointed focus difficult), and the back of the knees to lock, tightening the neck and lower back.

If you are in a dangerous situation, your body is now ready to fight or to flee, and this stress response causes a reaction and a concomitant release. Most of the time, however, this reaction occurs when we are not in physical danger, and with no release for these built up chemicals, we become chronically stressed. Chronic stress is the cause of many health problems and symptoms such as headaches, eye strain, indigestion, stomach aches, back pain, inability to focus or concentrate, irritability and tension, to name just a few. It is hard for anyone to learn while in a stressed state because physiology is working against you! Now imagine how difficult it is for children, who have fewer coping mechanisms than adults, to pay attention and think clearly and productively while in a stressed state!

Yoga Ed. Tools for Teachers offers easy, effective ways to de-stress and bring the body-mind back to a safe, open and creative state in which joy and learning are possible. Yoga breathing and movements release and dissipate the physiological consequences of the stress response in the body. Yoga games engage us in creative play and thinking that ignites joy and stimulates the secretion of dopamine and DHEA. These positive chemical messengers improve mood, causing a positive attitude adjustment. Visualization slows brain waves, allowing the nervous system to recharge and the activity between both hemispheres of the brain to integrate. This process enhances learning, problem solving and a sense of peaceful well-being.

When done on a regular basis, Yoga Tools bring greater harmony and ease to the learning environment and process for teachers and students by giving the mind-body system what it needs to perform more optimally. This homeostasis in the body-mind also translates to healthier eating choices and better nutrition. When stressed, the body tends to crave the quick fix or emotional comfort of sugary, fatty, processed foods. Once the physiology is imbalanced or stressed, nutrition education doesn’t seem to make a difference to food choices for most people. Their ‘state’ is making the choice as it strives to balance itself. Think about what you choose to eat when stressed, tired or anxious even when you know your choice is not healthy for you! However, when the body-mind is hydrated and balanced throughout the day with appropriate exercise and nurturing activity, you are much more likely to want to make healthy, fresh, fruit and vegetable

nutrition choices. Again, it is your 'state' that is determining the choice. Feeling good begets eating well begets feeling good.

When you are thirsty, you automatically take time-out to drink water and support your well-being. Letting yourself become chronically stressed is like not drinking water when you are thirsty. Yoga Ed. invites you to use Yoga Tools in the same way you drink water – whenever you need it. Don't wait for later! When you are stressed, off center or imbalanced in any way, use a Yoga Tool or two to restore your balance and energy. This basic health practice will enable you to sustain your well-being, healthy eating, achievement and responsible, caring behavior. By modeling and teaching it to your students, you are laying a foundation for their present and future health.

## • IMPORTANCE OF EXERCISE AND NUTRITION

### Exercise such as Yoga Tools:

1. Over-rides the body's physiological response to stress on the body. Conscious breathing initiates the relaxation response and re-integrates the nervous system for receptivity. Yoga postures and games activate and integrate all the body's systems to bring students back into an energized, alert state.
2. Organizes whole-brain function for optimal learning. Breathing and physical activity fuels the brain and body with oxygen and glucose through blood circulation.
3. Raises levels of glucose, serotonin, epinephrine and dopamine, all chemical messengers known to balance behavior and inhibit hunger. The chemical messengers present under stress usually make us want the quick fix of unhealthy food!
4. Triggers BDNF, a neuro-tropic factor required for neurons to communicate. The flow of BDNF decreases after 20 minutes of sitting and is triggered again with movement.
5. Shifts body-brain into a homeostatic state – balancing brain chemicals, hormones, electricity and the functioning of all the body's systems which supports making healthy food choices.
6. Strengthens key area of the brain – basal ganglia, cerebellum and corpus callosum by building brain cells and connections.
7. Improves mental focus and concentration (Caterino and Polk, 1999) by stimulating the frontal lobe of brain - enhancing memory, creativity and academic achievement. (Michund and Wild 1991), (Brink, 1995), (Vanves and Blanchard).
8. Which include cross-lateral movements organize and stimulate the whole brain – unifying the cognitive and motor regions of brain and increasing synaptic connections (Dennison and Hannaford).
9. Develops eye muscle fitness and helps with reading.
10. Enhances vestibular, cerebellum and reticular activating system integration which is critical to strengthening our attention and coordination both physical and cognitive.
11. Helps 85% of students who are kinesthetic learners (Hannaford). Learning through body is more powerful than learning through listening and recalling facts (Jensen). If it's not in your body, you really haven't learned it.
12. Creates a fun, harmonious and safe way for learning and developing social skills.

13. Reduces stress, increasing mind and body fitness and developing the 2 key factors of lifetime health:

- Self-awareness
- Self-care and management tools and techniques

14. Has been correlated with improved behavior, physical fitness and academic achievement. See PERC Assessment at [www.yogaed.com](http://www.yogaed.com) .

**Eating more fruits and vegetables (5 – 9 servings) a day:**

1. Is a cornerstone of lifetime health and wellness.
2. Is fun, varied, colorful, sensory stimulating and delicious.
3. Helps insure that you consume enough of the following nutrients necessary for optimum health:

**Vitamins and Minerals** – natural substances found in foods that our bodies need in specific amounts everyday. Eating a wide variety of fruits and vegetables of different colors is the best way to get all that you need to maintain health, feel good and be strong!

**Fiber** – natural plant substance that supports healthy digestive and elimination health

**Phyto-chemicals** – natural plant substances found in the bright colors of fruits and vegetables that promote healthy function throughout your whole body and mind!

**Anti-oxidants** – plant substances that protect the body by neutralizing free radicals, or unstable oxygen molecules, which can damage cells and lead to poor health.

4. Promotes optimal weight and energy levels
5. Encourages healthy growth and development
6. Supports healthy aging
7. Reduces the risk of cancer and diabetes
8. Helps digestive and elimination system health
9. Supports healthy brain and memory function
10. Supports good eyesight and vision health
11. Helps strengthen the immune system
12. Helps maintain strong bones and teeth
13. Promotes heart health
14. Maintains urinary track health

## • THE BENEFITS OF YOGA:

### **Yoga is non-competitive.**

Kids practice being supportive and respectful because they must slow down, notice and work with their own experience. It is process-focused, not goal-focused. Everyone can do yoga, feel good about it and help each other with it.

### **Yoga requires staying present.**

Kids develop focus, concentration and discipline through yoga. They experience how their own mind-body system works, and therefore learn how to work more productively with themselves. Kids learn how to consciously change their mental and emotional states, becoming more responsible for their choices and health. They have tools to bring themselves into balance which leads to feeling good and making healthy nutrition choices such as eating more fruits and vegetables.

### **Yoga is practical, low-cost preventative medicine.**

Yoga serves as a balancing and restorative counter-pose to modern life. Kids shift the stress response in their autonomic nervous systems and move from fight-or-flight to creativity and enjoyment while enhancing fitness.

### **Yoga creates balance, integration, flexibility, and quiet.**

Kids slow down, find center and become more present through yoga. They also release tensions and toxins. They feel better, are more relaxed, and can therefore focus and participate fully in learning and exercise.

### **Yoga expands and enriches awareness and the experience of our inner life.**

Yoga is a tool that enables children to have a greater sense of SELF. They become less reactive and grounded, creative, communicative, compassionate and alive.

### **Yoga is not an intellectual process; it is experiential and social.**

Kids feel the difference in them selves and in the group after doing yoga. They personally experience coherence and calm and take joy in having given it to themselves.

# YOGA PRINCIPLES

**Be Peaceful / Show Kindness**

**Be Honest / Tell the Truth**

**Be Tolerant / Accept Other Points of View**

**Be Generous / Share**

**Be Clean / Take Care of Yourself and Your Community**

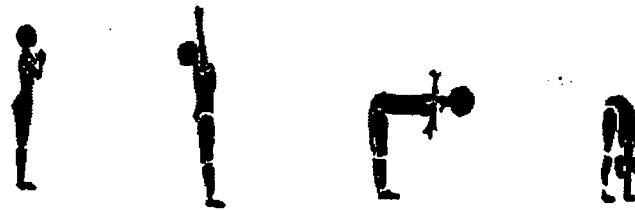
**Be Content / See the Positive**

**Be Disciplined / Work Hard**

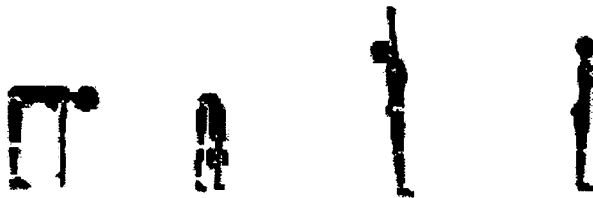
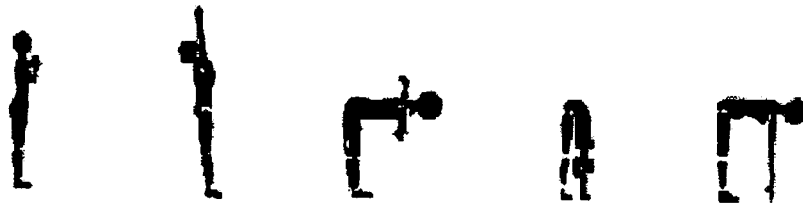
**Be Responsible / Think before You Speak or Act**

**Be Reflective / Spend Time With Yourself**

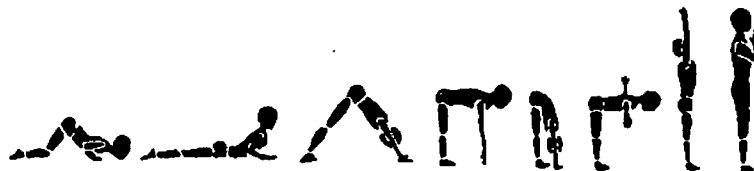
Half Salute



Series A



Series C



## Standing Poses:

During the "ha" or active/sun portion of the class, practice short standing pose sequences like a dance. Also work on holding balance poses and back bends. A flowing kind of practice expands concentration, focus, grace and stamina. It is designed to be strenuous and intended to deepen and extend students' strength, balance, flexibility, attention and sense of accomplishment. You can always include vocalizing as a way to help students stay focused and breathing as they move.

Mountain



Waterfall



Blown Palm



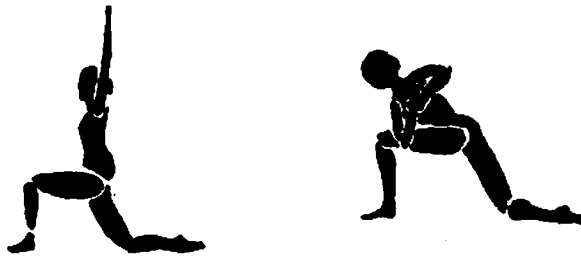
Standing Shark



Crescent Moon



Dragon / Twisting Dragon



Triangle



Warrior 2



Warrior I



Extended Angle





## Balance Poses:

Balance poses are truly empowering for children, even though they are challenging. It is important to practice balance poses regularly so that students can develop a connection to their own core and vertical alignment. In requiring the integration of focus, alignment, strength and finesse, balance poses help extend coordination and attention span.

Tree



Airplane (Warrior 3)



Eagle



Dancer



Half-Moon



## Forward Bends:

During the “tha” or passive/moon portion of the class, students will work on the floor doing twists, forward bends, inversions and restoratives. Forward bends open the lower back and legs while stretching the spine. They turn students inward and so help to calm. They also activate and help regulate the endocrine system. Remind students not to force or push during forward bends. Coach them to extend slowly and sensitively, letting gravity and smooth, steady breathing soften and open them.

Rock



Rag Doll



Frog



Down Dog



River



## Twists:

Twists are cleansing and neutralizing. They clear the mind and body by purifying and by creating space. They activate blood flow through all of the organs, and squeeze out toxins. They are an effective way to unwind the back after backbends or forward bends, or to unwind the brain after a period of concentrated thought. It is important to remind kids to drink plenty of water after twisting.

Twisting Dragon



Sitting Twist



Lying Twist



Twisting Dog



Twisting Star



## Back Bends:

Back bends are great energizers and are wonderful for the health and flexibility of the spine, hips, shoulders and organs. They can also be scary and/or bring up emotions which are trapped in the body. While encouraging students to meet the challenges of back bends, be sensitive to their issues and support them in going at their own pace. Be ready to adapt poses and use props so that kids are not struggling, grunting and groaning, but can ease back and maintain their breathing. Let students know that feelings might come up and surprise them. If suddenly they want to shout in anger or cry for no reason, explain that the release of past, stored emotions is one of the benefits of the pose. All they have to do is let the feeling flow through them. Remind them that then they won't have to carry it around anymore!

Cobra



Lion / Up Dog



Shark



Bridge



Camel / Bow



## Restoratives:

Restoratives are essential for kids in school. If students are tired, they are unable to meet physical challenges and concentrate. Making them try to do yoga creates a power struggle in which everyone in the class loses. We recommend that you use restorative poses as your first disciplinary response and prescribe individually. We have found that kids who are acting out, not participating or being disruptive usually just need some attention, nurturing and rest. So that's what we give them. Sometimes, they fall asleep and wake up much refreshed and other times, they rejoin us when ready. We explain to students that restoratives are there for them to rest and recharge, or to be with an injury or feelings. One of the goals of this program is to help kids link to their authentic selves. Resting in a restorative pose is a valuable way to do that. Offering restoratives sends the message to students that this is a safe environment to honor, balance and explore oneself.

Rest / Bean Bag Body



Legs up Wall



Constructive Rest Position



(Lie on your back with knees bent, and feet flat on the floor, hip distance apart. Use a strap or a scarf to hold the knees together. Cross your arms over the chest as far as possible, allowing forearms and hands to gently hang): CRP evenly releases muscle groups around all joints for maximum and efficient relaxation. It also clears the neuro-muscular slate, preparing the mind and body to receive new imagery and move in new ways.