

# No Sleep in Deep

## by Elson dos Santos

An enjoyable and challenging *deep water* class, build upon a strong choreography. In this class we work with different interval methods to handle ‘the principle of inertia’ which enables a person to work out for a longer and/or on a more intense level of time.

During deep water lessons the body is completely submerged, which is an “abnormal” state so you have to keep a number of things in mind:

- The effects of the driving force(s)
- Drag
- Flow
- Surface
- Hydrostatic pressure
- Temperature
- Expertise and experience of the participants

All these factors have an influence on our body and movements. Hence, Individual adjustments are necessary while working out in water. To understand this, we have to understand one of the so called water principles; inertia.

### **Inertia training in deep water by means of interval training**

The principle of inertia is one of the fundamental principles of classical physics and describes inertia as *the resistance of a body to changes in momentum* (Isaac Newton). Physical Power is needed to change the body motion, as it requires more effort to overcome inertia to start, stop, or change a movement for the entire body than it does to continue with the same movement. This is especially the case while working in water.

Newton’s First Law says that an object which is stationary or moving at a constant speed will continue indefinitely unless acted upon by an external force. Another way to view this First Law is that an object or an entity will continue to do whatever it is doing unless there is a reason and a drive to change. Building upon this law, the following interval methods are used in this class:

- **Start-Stop training:** a combination of travel and stationary work. For example, Move (Travel) > X (Stop) > Move > X > Move. Different directions are possible.
- **Pyramid training:** gradually increasing or decreasing the number of repetition for a move in a combination. In this class I mostly use the gradual increasing method in the number of repetitions while maintaining the sequence.

But don’t let the name fool you. The exercises within these methods doesn’t involve any rest periods as the choreography is build! Often termed as *aerobic fitness or continuous training* this training can be seen as a great way of building a good cardiorespiratory endurance (the body’s physical capacity to perform large muscle movement over a prolonged period of time).



## Workout Sections

The workout is divided in sections visualized by triangle travel to explain the different travel patterns.

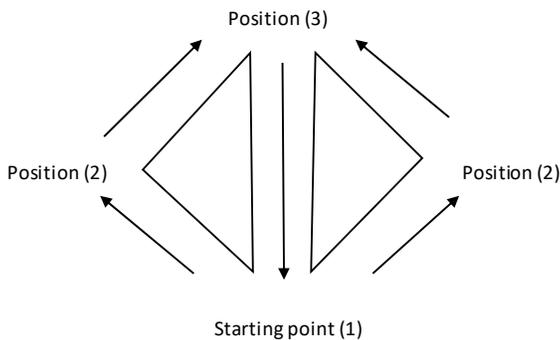
### Warming Up

Before starting to work out in water, you have to take a couple of things into account. For example, dynamic changes of the center of gravity with regard to the pressure point, safety and self-reliance and any fears that may affect breathing, exercising and mental involvement.

One of the formulas formula that was designed and researched by Dr. Mary E. Sanders is the ABYSSS formula. Each letter represents a certain change or accent and it stands for and it is used during this warming up.

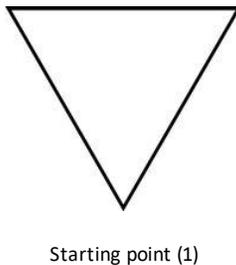
- A** = Adjustment
- B** = Breath and Buoyancy
- Y** = Yield
- S** = Synergize
- S** = Sculling
- S** = (Safety) Skills

### Section 1: Start and Stop



- Travel pattern as shown above
- Start and Stop method. (1) > Travel > Stop > (2) > Travel > Stop > (3) > Travel > Stop > (1)
- Jogging, Flutter kicks and Cycling legs
- With use of arms (assistant)

### Section 2: Start and Stop



- Extend the Start and Stop method (different variations)
- Push Kick Side and Pull Back + Kick Across and Pull Back (from stationary to traveling)
- While traveling: Cycling legs moving forward with assistant arms > Stop (2): Knee up 2 legs and side Crunches > Travel side way: Push kick, Kick across and pull > Stop (3): Knee up 2 legs and side Crunches > Travel backward: Flutter kicks with assistant arms.

### ***Section 3: Start and Stop***

- New Combo (Stop): Side Kick Single leg, Side Kick 2 Legs push down, T-Jack (the arms close when the legs open)
- Movement pattern same as kern 1 and 2 combined with new combo

### ***Section 4: Pyramid***

Same movements and pattern as above, only now with the use of 'Levers' to increase the level of intensity. The body moves through the use of a **system of levers**. Bones act as lever, arms and joints function as fulcrums of these levers. Anatomical levers of the body cannot be changed, but movement can be made more efficient if you possess a basic understanding of the lever system.

### ***Section 5: Back and forward***

- Kicks front, Kicks back, Ski, Jacks
- Traveling diagonal backward and forward
- Kick front move backward and kick front move forward
- Kick front move backward and Ski or Jack forward with the Lever principle
- The arms will have a very important role. The arms will resist or assist the move all the time to play with intensity decrease or increase

### ***Section 6: Final choreography***

During the last section of this training you can combine both interval methods (Start & Stop and Pyramid).

### ***Warming Down***

Thanks for joining me at 5. Hamburger Aqua-Kongress

Elson dos Santos

