



## **Aquatic Consulting & Education Resource Services**

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### ***Ataxia: Treatment Implications and Interventions***

The category of ataxia can actually be divided into two subgroups – documented/diagnosed ataxia and “ataxia like” motor behavior. While individuals in either subgroup can benefit from the same general type of aquatic intervention, it is important to differentiate between the two groups. Individuals with diagnosed/documented ataxia have brain damage in the cerebellar area. That damage affects the individual’s motor control. Individuals with ataxia like motor behavior exhibit the same behavioral characteristics. However, there is no diagnoses/documented brain damage. Such damage may – or may not – actually exist.

A more specific example of diagnosed ataxia can be in an individual with cerebral palsy (CP). So prevalent is this situation, that ataxic is one of the major subgroups of CP. For an individual with ataxia treatment protocols are designed to assist the individual in improving motor control. Within the category of motor control are the areas of gross motor function, fine motor function, and ocular tracking. More specifically these functions include balance and locomotion, as well as grasp and release, finger usage, and skills of daily living. Of particular concern is control of eye movement. Nystagmus is sometimes a concomitant factor. Therefore any therapeutic process should also have visual tracking exercises as a component.

More specific examples of ataxia like behaviors range from someone who has had too much to drink to someone whose motor control is degenerating due to some other disease, such as Parkinson’s disease Lou Geherig’s disease. An individual who has sustained traumatic brain injury can also exhibit ataxia like behaviors. These individuals have the same motor control issues as individuals with diagnosed ataxia. To further complicate these situations, there may also be over-lay of problems more directly related to the specific medical condition of the individual.

Whether an individual has diagnosed ataxia or ataxia like behavior, treatment in the aquatic medium offers unique opportunities to assist the individual in obtaining better quality of life.

#### **Treatment in the Aquatic Medium**

Absence of motor control creates a situation where the uncontrolled movement can easily result in a fall (and subsequent injury). Working in water removes the potential for hard fall injuries while enabling a sound, progressive therapeutic process. Ataxia is not curable in the sense that a person “gets well”. Working with an individual with ataxia is not rehabilitation, as in rehabilitation to return to “normal”. Therapeutic process for an individual with ataxia is about reestablishing and/or improving motor control and assisting the individual in developing motor patterns that are safe and controlled for leading a functional life.

To some degree, motor control is dependant on musculature being strong enough to not only hold the body in alignment, but also move the body structure. Movement against the resistance of water

enhances muscle strength and thus can improve control. Integrating this movement with activities designed to enhance actual brain processing of motor activity facilitates the therapeutic process.

Key here is neuroplasticity. Brains can change. Obviously, the degree and direction of that change is very dependant on the degree of damage, as well as the therapeutic program emphasizing activities to trigger those changes. Intensity of training, intervals of engagement, specificity of activities, constructive therapeutic feedback all influence results. In addition, providing activities to engage more than one area of the brain at a time have been found to have better effect.

Because safety can be an inhibiting factor for land treatment, as falls as well as collisions with solid objects can easily occur, therapeutic interventions in the aquatic medium can be particularly valuable whether the individual is diagnosed as ataxic or exhibiting ataxic like behaviors.

## Resources

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**Note:** This is not designed to be an all-inclusive bibliography. Rather it is a sampling of the wide variety of published material in the broad category of ataxia.