

The Halliwick Concept for clients with cerebral palsy or similar conditions

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The Halliwick Concept is an approach known worldwide which enables people to enjoy water based activities and to learn to swim. In some cases it is used for therapy.

Since its inception in 1949 by James McMillan (Mac), different aspects of the Concept have been further developed. For instance we have seen the development of games and activities to enhance and consolidate learning, an increased understanding of how to teach swimming strokes to persons with limited mobility and specific use of Halliwick for therapeutic purposes.

This article will address more specifically the use of Halliwick when working with clients with cerebral palsy (CP) or similar conditions. (See CP definition at end of this article).

History

Before 1949, swimming for people with CP generally didn't take place as it was seen as detrimental to the condition. Based on his expertise of being a naval engineer and swimming coach Mac

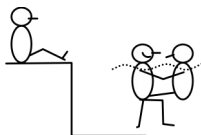
had a vision of how to structure activities in the water in a progressive way, with emphasis on breath control and control of rotations - both essential tasks when in the aquatic environment.

Mac also embraced the philosophy of inclusion of the person with a disability, and in the aquatic context he chose to call the person 'swimmer' even if the person was not yet able to swim. In the following paragraphs, explaining the structure of the Concept, we too will use the terminology of 'swimmer' and for the person supporting the swimmer 'instructor'. Later in the article, when looking at the therapeutic aspects of the approach, we will use the terminology of 'client' and 'therapist'.

The approach Mac developed is known as the Ten Point Programme. In this programme, structured in ten points, there is first a focus on adjusting and being happy to be in an aquatic environment. A second focus is about mastering control of rotations resulting from the relative instability of the body in the water. The last focus is on combining skills to allow mobility through a swimming stroke.

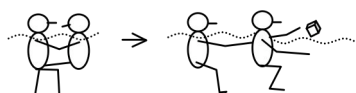
The Ten Point Programme consists of the following points:

Point 1: Mental Adjustment is the process which allows the swimmer to be in the water with sufficient confidence to experience water in a positive way. It includes learning to blow out or hum when the mouth or nose comes in contact with the water.



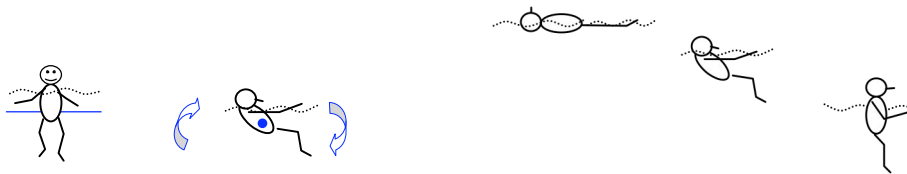
*One example of mental adjustment.
The swimmer enjoying being in the water.*

Point 2: Disengagement is the process through which a swimmer further develops his/her confidence and which allows them to start exploring the environment, moving away from the poolside, pool floor or the support of the therapist.



*One example of disengagement.
The swimmer turning away from the instructor.*

Point 3: Transversal Rotation Control: is controlling rotation around a transversal axis. For example, the sequence of floating on the back to reaching a vertical position in the water, pivoting around an axis which passes through both hips.



Rotations around a transversal axis.

One example of transversal rotation control. Moving from a back float to the vertical.

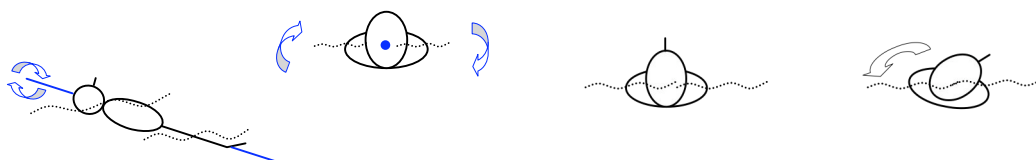
Point 4: Sagittal Rotation Control: is controlling rotations around a sagittal axis. For example remaining vertical when reaching for an object placed to the side of the body and preventing pivoting around an axis perpendicular to the frontal plane of the body.



Rotations around a sagittal axis.

One example of sagittal rotation control. Limiting lateral movement of the body when reaching for an object to the side.

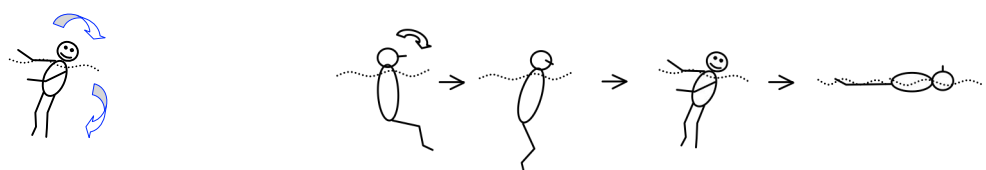
Point 5: Longitudinal Rotation Control: is controlling rotational movements taking place around a longitudinal axis. For example preventing the rotation to the right side generated when turning the head to the right whilst floating horizontally on the back. In this example the person is preventing rotation around an axis perpendicular to a transversal plane.



Rotations around a longitudinal axis.

One example of longitudinal rotation control. Stopping rotation of the trunk caused by the head turn.

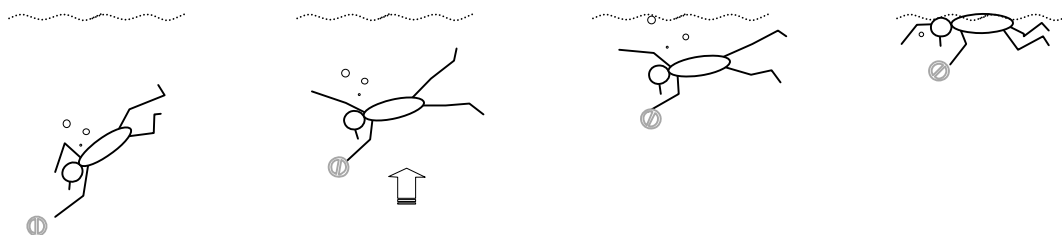
Point 6: Combined Rotation Control: is controlling any combinations of the above described rotations. In this point, the swimmer initiates or prevents several rotations at once. For example moving forwards from a vertical position to achieve a position floating on the back.



Combining several rotations at once.

One example of combined rotation control. When falling forwards from a vertical position to reach a back float

Point 7: Upthrust: is when the swimmer learns that the water can help him/her to stay at the surface. Having this experience increases the swimmer's confidence to cope with less or no support.



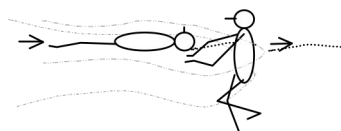
One example of feeling the effect of upthrust. When trying to pick up something from the pool floor, the swimmer will find that he/she will come back to the surface with very little or no effort.

Point 8: Balance in Stillness: is about developing the ability to respond in a controlled way when unsupported in the water and balance is challenged.



One example of balance in stillness. Swimmer maintaining a back float position in rough water.

Point 9: Turbulent Gliding: is the swimmer moving through water with no direct support from the instructor and without making propulsive movements. For example, in a back float, the swimmer's body is in motion thanks to the turbulences generated by the instructor's hands and/or body. This point helps the swimmer to maintain balance in stillness whilst experiencing increasing forces disturbing the position of his body in the water.



Turbulent gliding: a swimmer glides through the water as a result of the turbulence created by the instructor's hands and/or by the instructor's movement (i.e. taking steps backwards).

Point 10: Simple Progression/Basic Swimming Strokes: is about using simple movements to create propulsion, for example clapping the hands on the thighs when in a back float to propel the body through the water. From the use of simple movements, more sophisticated swimming movements or strokes can be learned.



One example of simple progression. Clapping the hands on the thighs causes propulsion through the water.

These points have been ordered as shown above to give a general structure, however it is recognised that there is a strong overlap between the points. Components of most points can be seen throughout the progression, from going in the water for the first time to being a competent swimmer.

Halliwick in the context of therapy for clients with cerebral palsy (CP) or similar neurological conditions.

One of the first things is to determine what the aim of the treatment is. What is the purpose?

For some clients it is about promoting physical activity and well-being, increasing mobility and/or learning to swim. If the aim is about providing an opportunity to practise a sport activity and learning to become independent and safe in the water as a process for learning to swim, the therapist can use the Ten Point Programme as a progressive guide.

Some might see the aquatic context as an alternative, or even a better way, to achieve set goals related to daily life activity. Improvement will therefore need to translate to dry land. Ideally, one would look at using pool work to reach goals which are relating to aspects of daily living on dry land, as well as to the pool.

The aquatic environment is commonly chosen for numerous reasons such as reduced weight-bearing in cases of post surgical intervention, for the resistance water exerts on movement allowing development of muscle strength and stamina and improving cardio-respiratory conditions.

For clients with CP there are additional reasons for choosing the water for therapy.

CP is a lifelong condition often justifying intensive therapy which over the years can appear to be repetitive and may not be very motivating for the client. Having the aquatic environment as an alternative setting to dry land can be stimulating and inspiring for both the client and the therapist.

Unfortunately, funding for therapy becomes increasingly restricted, often leaving very little opportunity to work on aspects such as sports, including swimming. This means that in many cases therapy can only target the essential functional needs. Bearing this in mind, working in the pool context often needs to be justified by the functional improvement that will take place on land e.g. balance when walking, improved eating and drinking abilities or handwriting.

How can a therapist use the Halliwick Concept to achieve this?

When working with clients with CP, to achieve specific results and changes in coordination, in-depth observation and analysis of the client's spontaneous motor behaviour (on land and in water) is needed. It is important to understand the way clients often influence the therapists' ways of handling without the therapist's awareness. For example, when first in the water, a client with CP might be excited by the experience but may be frightened of things going wrong. Typically, the clients will hold on, if possible, to the therapist and try to keep the head and shoulders high up out of the water. In doing so, the client desperately tries to

use strategies he/she developed on land instead of learning new or appropriate ways to move or adjust posture. The client needs to realise that less, and a different sort of, effort is actually needed to control his/her position in the water because of the supporting properties of water. This is in contrast with what is needed on land. The Ten Point Programme with its Mental Adjustment and Disengagement is essential to allow the client to be mentally and physically adjusted in the water, which is a first step to learning about the new rules for movement in the aquatic environment. Without this, therapeutic aims could be difficult to achieve. For example: if working for full hip extension with a client with diplegia in a horizontal back float, full extension will be impossible to achieve if the client is desperately trying to bring the head in a vertical position to avoid water in the ears.

Once the client is open to experiencing and learning to move effectively in the water, the therapist can start to select activities which will focus on the client's main difficulties. The selection of activities chosen is coupled with specific starting positions, support and instruction.

Supports used by the therapist are adaptations of the basic supports taught on the Halliwick Foundation Courses. These adaptations are tailored to meet the individual's needs. (Adapted supports for children with CP are discussed and practised on the Halliwick Advanced Course for Therapists in Paediatric Neurological Rehabilitation.)

Main difficulties for clients with CP can vary enormously. For example, one client might present with persistent asymmetry another might be stuck in stereotyped symmetrical patterns. Some move too little, others too much. For some the main area of concern is the lower part of the body, for others, it is the upper part. Some have primary motor problems with secondary perceptual difficulties as a consequence, whilst for others the primary problems are perceptual. There is a huge variety which doesn't allow us to set stereotyped therapeutic activities.

The control of rotations as described in the Ten Point Programme is about the ability for the client to initiate or to prevent rotations; in other words to move or to prevent moving in order to remain still. The therapist can select which part of the Ten Point Programme is most needed for a particular client and the best ways to work on a particular point having the therapy aim in mind.

Task analysis, knowledge of hydrodynamics and acquiring a wide repertoire of ways to work on a particular point of the Ten Point Programme is an essential quality for an aquatic therapist working with clients with CP. Cerebral palsy is such a heterogeneous condition, that in-depth knowledge of the client's motor behaviour on land and in the water together with task analysis skills is essential for the therapist to develop optimal clinical skills.

So far we have discussed movement components and have not highlighted enough that Halliwick practitioners present tasks through games and activities which allow the activity to be meaningful and motivating, which we know facilitates the learning process. Games and activities can be on a one-to-one (client and therapist) basis or in a group setting (several clients with their individual therapists, parents or Halliwick instructors).

This approach, using games and activities, fits in well with the International Classification of Functioning, Disability and Health (ICF) because of its strong focus on participation, without losing sight of the body function and structure and activity levels.

Conclusion

The Halliwick Concept is a structured approach designed to allow persons, with or without a disability, to participate in water activities. Progression according to the Ten Point Programme takes into account knowledge of the challenges, physical and emotional that a person experiences when in the aquatic environment. The Concept recognises the importance of being mentally and emotionally ready to experience being in water as a positive first step, before learning to control movements in different positions. Through games and activities, designed by the instructor, the swimmer is exposed to increasing levels of difficulty, which allows for decreased dependence of support and often leads to developing the foundation for swimming unaided.

From a therapy point of view, the Halliwick approach provides the therapist with a means of analysing the competences and challenges of the clients when in water. It helps the therapist to identify priorities and how to progress, expanding the ability of the therapist to problem-solve and to work on a particular aspect of coordination in a more in-depth way.



Photo of pool session with clients on the Halliwick Advanced Course for Therapists in Paediatric Neurological Rehabilitation, Sao Paulo, Brazil 2010

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- For more information about Halliwick see the websites of the International Halliwick Association (IHA) at www.halliwick.org and the Halliwick Association of Swimming Therapy (Halliwick AST) at www.halliwick.org.uk

The definition of cerebral palsy

Cerebral palsy (CP) describes a group of disorders of the development of movement and posture, causing activity limitation, that are attributed to non-progressive disturbances that occurred in the developing fetal or infant brain. The motor disorders of cerebral palsy are often accompanied by disturbances of sensation, cognition, communication, perception, and/or behaviour, and/or by a seizure disorder.

Bax M. et al. (2005)

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