

## Why Submerge Infants When They Are Better Off Submerging Themselves?

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### INTRODUCTION

I put this to you as a question to prompt you to think about your own views on submersion and how these relate to the way you practice submersion.

That infants are better off submerging themselves than being submerged is not a scientific fact by any means.

It is a conclusion drawn from the experience of a lifetime involvement in teaching very young children to swim.

The reasons for coming to this conclusion are sound and because of the controversy, the uncertainty, the misconceptions, the warnings, and the obvious risk of submersion, I believe that it is in the best interest of infant swimming to discuss these reasons within the framework of guidelines, terminology, definition, and research at this 6<sup>th</sup> WABC here in Buenos Aires.

It is time that the professionals amongst us come together as a world body to discuss these issues so as to gain the recognition that infant swimming rightfully deserves.

Submersion is the most contentious of issues in infant swimming.

To mention the word is like throwing the cat amongst the pigeons.

As long as there is such lack of consensus on the subject as there is today there can be no end to the uncertainty and the hullabaloo surrounding infant swimming.

### WHAT IS SUBMERSION?

Submersion is to be completely surrounded and covered by water.

Humans would feel thoroughly stressed in this state unless they knew that they could surface for air within a reasonable period.

Adults are mature humans who are capable of rationalizing such outcomes.

Infants on the other hand are developmentally incapable of such rationalization.

Adults, moreover, normally experience submersion at their own doing.

Infants by all accounts experience submersion at the hand of an adult. This is the critical issue and it is here that the problem lies. For as long as submersion involves power of one person over another, there is always the possibility of abuse.

Though we are led to believe that very young infants experience no discomfort and may even feel at home submersed in water, unless of course left there beyond a reasonable period, this

is certainly not true for older infants. Their reaction to submersion would depend entirely on their experience of previous submersions.

What that might be is dependent on multiple variables. The only and most predictable outcome of submersion is when infants are left to practice submersion themselves.

#### SUBMERSION AND ITS EFFECT ON INFANT SWIMMING

Because of the psychological implications of submersion, infant swimming has in the more recent past come to be rated on a scale ranging from acceptable to unacceptable depending on the manner in which submersion is practiced.

The manner in which submersion is practiced often depends on how strongly one feels about the emotional well-being of the child. Other factors such as the risk of hyponatremia (water intoxication), hypothermia, prolonged breath holding, and the spread of communicable diseases play a very minor role.

But what is acceptable and what is not acceptable is in itself a debatable issue.

As designer and author of Todswim SA, South Africa's national accreditation course for toddler swim teaching, it was my duty to take a stance on what should be considered acceptable or unacceptable practice of submersion.

Throughout a lifetime experience of teaching very young children to swim I have found that wherever submersion was adult-controlled i.e. instructor (often parents too when under the guidance of an instructor), and no matter how kindly this was done, the consequences were more often negative than not. This observation shaped my teaching and has set a precedent in my country.

In training instructors individual variation creeps in. Technical aspects can be taught but the manner in which to implement technique is not that easy to pass on. The essence of manner, such as insight, empathy, and touch, all vital for adult-controlled submersion, are acquisitions that are not so readily passed on.

Guidelines can only serve as measures of control and standardisation where medical issues such as the risk of water intoxication, contaminated pools, and communicable diseases are concerned. They are less effective in matters as subjective as an infant's emotional well-being. What some believe to be good for the child others believe to be harmful. This brings us right back to the issue of what is and what is not acceptable as far as the practice of submersion is concerned. There are many who still advocate the swim or drown approach to teaching. Emotional well-being is the least of their concerns.

From the standpoint of a training course, whether one's own or for national accreditation, it would be best not to include any manner of adult controlled submersion at all.

#### SUBMERSION AND SWIMMING ABILITY

As submersion is part and parcel of learning to swim it has to feature in the learning process. It should, however, never be forced on infants. Forcing submersion on older infants is known to retard and even to thwart learning all together. More so, it is questionable from the neuromotor perspective that submersion of very young infants actually promotes early swimming ability.

In her presentation at the 1999 WABC in Toulouse, France, Torril Hindmarch of Norway questions why there are so few swimming toddlers in Norway when there were so many 'swimming' babies.

Dr Stephen Wealthal in discussing the 'Medical/Social Problems of Excessive Immersion' at the 1995 WABC in Melbourne, Australia, stated that from the neuromotor perspective 'there is no evidence that infants allowed to perform this (submerged) reflex swimming acquire voluntary swimming any earlier or to a higher standard than infants who have not been so exposed'.

Parker H and Blanksby B, in their study listed as reference in the American Academy of Paediatrics Policy Statement 2000, 'Starting age and aquatic skill learning in young children' (Aust J Sci Med Sport 1997; 29:83-87) endorse this view in their conclusion that 'swimming ability is limited by neuromuscular development'.

Dr Stephen Wealthal further stated that 'the approach which knowledge of developmental process and a knowledge of possible medical/social complications would most support would be of ensuring that babies become used to contact with water in their normal and play-full environments with which they interact at their own pace'. In other words, it is more favourable to leave infants to explore submersion at their own pace and not to force it on them before they are developmentally able to initiate it themselves.

#### GUIDELINESS AND CONTROL

Information sources such as research and world conferences are rather limited and still very much on a controversial level. Public information is generally restricted to what is dished up by the media or the instructor 'on the block'. This is particularly true of South Africa. No wonder a policy statement issued by such an auspicious body as that of the American Academy of Paediatrics (AAP) wields such influence. The effect of the AAP Policy Statement April 2000 was felt in English speaking countries all over the world as well as those that look to the United States, Canada, and the UK for guidelines in infant swimming.

By all accounts, the effect of the AAP Policy Statement on the infant aquatic fraternity at large was quite staggering. Not so much because of the policy itself but because of what the media made of it. But the media is only as good or as damaging as the information it receives. A reputable international body, such as the WABC had it been so committed, could have prevented the damage caused by the media. It would in all likelihood have been contacted by the media for an opinion on the Policy Statement.

It is true that medical approval lends credibility and elevates status but unless an international representation with commitment to research can exercise control acceptable by the AAP, infant swimming is destined to stay confined to guidelines set by the YMCA and the Red Cross of America / Canada. Guidelines set by other national but more progressive aquatic bodies such as the Council for National Cooperation in Aquatics (CNCA) 1985, and the National Swim School Association (NSSA) 1990 may have more clout if they could back themselves up with well-founded research and international representation.

Though the AAP did not single out submersion per se, submersion is implicated in the policy statement's 5<sup>th</sup> and 6<sup>th</sup> recommendations which mention that 'all aquatic programmes should include information on the inherent risks of water' and that 'water intoxication, and communicable diseases can be prevented by following existing medical guidelines'. The guidelines referred to are those published by the American Red Cross and the YMCA both of which advocate *no forced submersion*.

From this, and from further reference to the policy statement of 1993 entitled 'Drowning in Infants, Children, and Adolescents' it is clear that submersion is a central issue in infant swimming as far as the AAP is concerned.

The media however did not elaborate on the 5<sup>th</sup> and 6<sup>th</sup> recommendations but had a hay-day with the 1<sup>st</sup> recommendation misinterpreting the recommendation to imply that children were not developmentally ready for lessons in any manner of swimming before their 4<sup>th</sup> birthday.

The 1<sup>st</sup> recommendation stated that 'Children are generally not developmentally ready for formal swimming lessons until after their 4<sup>th</sup> birthday'. The key word here is 'formal'. What is implied in the recommendation is that children are not developmentally ready for swimming lessons in *formal* swimming before their 4<sup>th</sup> birthday. This does not mean that children are not developmentally ready for lessons in any other less sophisticated style of swimming before their 4<sup>th</sup> birthday. Source of references listed indicate that the media interpretation is incorrect. Misrepresentation was damaging to infant swimming but could have been prevented.

#### DEFINITION AND TERMINOLOGY

The setback caused by the media stresses the need for consensus of definition and terminology amongst professionals. This is long over due! It was first called for as long ago as 1993 at the 2<sup>nd</sup> WABC Conference in Los Angeles.

Infant swimming needs to be defined!

According to the American Heritage Dictionary of the English Language, 'to swim' is to propel oneself through water from one point to another while continuing to breathe normally. The term 'swimming' alone does not imply the style or the speed with which this is done. According to this definition infants can swim. They are potentially able to swim at a certain stage of their development.

The variations of swimming are:

- Reflex swimming
- Infant swimming
- Recreational swimming
- Competitive swimming
- Olympic swimming

#### CONFLICTING INFORMATION AND THE RESPONSIBILITY OF THE WABC

Conflicting information on the medical implications of infant swimming have been expressed at past WABC conferences but have never been debated at one and the same conference. This is alarming considering the number of newcomers to infant swimming attending one or other of these conferences and going away with an entirely different perspective.

Take for example the presentations of two eminent medical professionals with views on submersion as opposing as their countries are on opposite ends of the world.

On the one extreme there was Dr Stephen Wealthal, director of the Medical Education Development Unit at the School of Medicine in Auckland New Zealand who maintains a literature watching and advisory role related to water safety in infant and children.

On the other there was Dr. Carl Rosen of Sweden who currently expresses a special interest in the mechanisms by which the foetus and the infant protect themselves from oxygen deprivation. He has played an advisory role in infant swimming in Sweden since 1981 and

has been involved in basic and clinical research into how the infant adapts to life outside the womb for the past 25 years.

Dr Stephen Wealthal in his presentation 'Science, Desire & Speculation: Their Roles in Infant Water Behaviour' at the 1995 WABC conference in Melbourne, Australia noted that: 'The larynx of the human infant under 6 months is anatomically and functionally different to that of the older infant. It is ideal for its role at this stage of life i.e. to close firmly like a valve or sphincter to stop fluids going into the lungs' and that there is 'very real evidence that the human may get the diving reflex disastrously wrong.'

Dr. Stephen Wealthal maintains that: '... most swimming instructors and many parents will have encountered infants who stop breathing for some time when air is blown onto their face or when they are immersed in water. Such infants may have had perfectly normal responses to similar stimuli previously and it is almost impossible to predict if and when a particular infant may be affected. Some infants who respond in this anomalous manner are found to have slight infections and some overlap with infants who may have so called near-miss cot deaths but many do not. It is not surprising that mothers in Siberia are not allowed to expose their infants faces to the wind as it is well known that sudden death may result.'

Dr Carl G Rosen of Sweden at the 1999 WABC conference in Toulouse, France, on the other hand said that: '... the recorded number of baby swimmers in Sweden was 100,000 and not a problem.' Dr Rosen intimated that there were no serious physiological limitations to cause concern. Observing the guidelines endorsed by Swedish Health which have been operational for 15 years to date was enough to make submerging young infants acceptable.

Though Dr Rosen did intimate that training is of all importance, I felt that he should have been more specific about what training entails. Coming from a country where there is as yet little or no control, I foresee real danger in delegates getting only Dr. Rosen's view on submersion. In countries where training is not of the same standard as that of Sweden this could have far-reaching repercussions. Infants are being submerged where there has been no training at all.

It is the responsibility of a world body such as the WABC to see to it that conflicting views as those expressed on such a delicate matter as submersion be expressed at one and the same conference. Such an arrangement would go a long way in winning credibility and straightening out the uncertainty and misconception surrounding infant swimming.

## THE PURPOSE OF SUBMERSION

Have you ever asked yourself about the purpose of submersion?

The purpose of submersion differs for various aspects of infant aquatics. Infant swimming is only one aspect of infant aquatics. Infant aquatics refers to all aspects of aquatic orientation and adaptation for infants such as: 1 Water exercises; 2 Directed water play; 3 Water safety; and 4 Swimming lessons. It is important to clarify this in order to understand the purpose and function of submersion.

It is both purposeless and damaging to infant swimming and infant aquatics in general to display images of submerged infants without understanding the implications of doing this. Images of submerged infants are pure sensationalism as they never fail to attract attention. It is harmful publicity and promotes irresponsible behaviour. It is unbelievable how few express concern as to the length of time an infant can stay submerged. Displaying images of infants under water without an explanation is encouraging latching onto the diving reflex gone mad!

Images of submerged infants should always be accompanied by a warning such as:  
*“Submerged infants are as good as dead unless they can surface for air”*

#### 1. Water Exercises

For the purpose of exercising and therapy from all accounts submersion has its function according to Igor Tjarkovsky and Alexander Gutterman who in pre-1989 Russia were supposedly responsible for reducing infant illness by 75%. Early regular and frequent submersion in infancy is believed to enhance the immuno-biological stability of the whole organism. Based on this assumption the then USSR Policy of the Soviet Ministry of Health ordered systematic submersion of infants from 14 days of age at the 15,000 clinics countrywide claiming this incredible drop in respiratory related illness. Submersion from this perspective and on this level is best left to the medical profession.

For exercising and therapy where the function of submersion poses minimum risk, Kristin Eales, a child physiotherapist, is forerunner in South Africa. She is exploring the benefits of AQUATOTS Swim Program from a Neuro-Development Therapy (NDT) perspective at the Baby Therapy clinic in Pretoria / South Africa.

#### 2. Directed Water Play

In directed water play as in aquatic orientation along the lines of the YMCA and the Red Cross programmes, submersion has no function and is not recommended.

#### 3. Water Safety

The term ‘water safety’ in relation to infant aquatics is vague. It is regularly used interchangeably with the term ‘infant swimming’ which in itself is somewhat vague. Water safety has more to do with behaviour in and around water than the teaching of swimming skills.

#### 4. Swimming Lessons

Submersion, as previously stated, is part and parcel of learning to swim. The purpose of submersion in learning to swim has been questioned. The function of submersion is to enhance swimming ability.

### YOUR CATAGORY OF INFANT AQUATICS

Have you ever asked yourself to what category of infant aquatics you belong, or how and where you fit into the over all picture?

Is there a purpose for the way you practice submersion?

Can you justify the purpose for submersion in your approach to teaching swimming?

### ASSESSMENT

As things stand there is more negative than positive in forcing submersion on infants for the purpose of teaching them to swim.

Because of the controversy, the uncertainty, the misconceptions, the warnings, and the obvious risk of submersion, is it not better to elect to play safe and not submerge infants?

From the perspective of an instructor trainer this would be the best way to guarantee the emotional and physical well-being of the infants.

Because submersion is part and parcel of learning to swim, submersion has to feature in the learning process. Yet it cannot be forced. Forcing submersion on the infant retards learning

and may even thwart learning all together. This is an important consideration where water safety is of prime concern.

What better option than to wait for infants to submerge themselves when they are developmentally able to do so?

## SUBMERSION AND AQUATOTS SWIM PROGRAM

My views on submersion are strongly reflected in the AQUATOTS Swim Program, my own personal method of teaching. AQUATOTS Swim Program serves as an example of a teaching method that advocates no forced submersion. Its success clearly demonstrates that it is unnecessary to force submersion on infants for the sake of teaching them to swim.

Submersion is never forced or adult-imposed.

Where adult assistance is required it is with consent of the child.

Submersion can either be:

- (i) Non existent
- (ii) Accidental
- (iii) Self-induced
- (iv) Adult-assisted by consent

## IMMOBILE INFANTS

In brief, AQUATOTS Swim Program takes infants who are not yet mobile through gentle drills that promote the backfloat without involving any submersion whatsoever.

Increased motor activity has infants experience submersion at their own doing in water that is shallow enough for them to stand in. Submersion is accidental in nature, i.e. submersion is seen as the inevitable consequence of learning to swim just as falling is the inevitable consequence of learning to ride a bicycle. The principle is the same. Just as you do not concentrate on falling so you do not concentrate on submersion.

At this stage of their development infants are also introduced to the practise of rotation skills that involve a 180° pendulum swing from prone face forward position to backfloat position. These rotation skills are practised in water that is waist deep for the attending adult. There is no submersion involved.

Rotation skill is then gradually combined with self-submersion activities resulting in infants flipping onto their backs and maintaining the backfloat position. The youngest to master the backfloat are about seven months of age. Before the combined skill is mastered infants have to be more actively mobile in their natural environment.

## MOBILE INFANTS

Infants who commence lessons at the toddler stage follow a similar routine but rotation is practised in the upright/perpendicular position with a full 360° spin around. Toddlers learn to return to the point of entry in this manner. They master the skill with ease. More discipline than skill is involved.

By 15 months most infants can master the ability to enter and turn back while continuing to breathe over the distance covered.

#### ILLUSTRATION

A brief video viewing (approx 8 min) demonstrates the AQUATOTS Swim Program approach to teaching age-appropriate swimming ability without forced/adult controlled submersion.