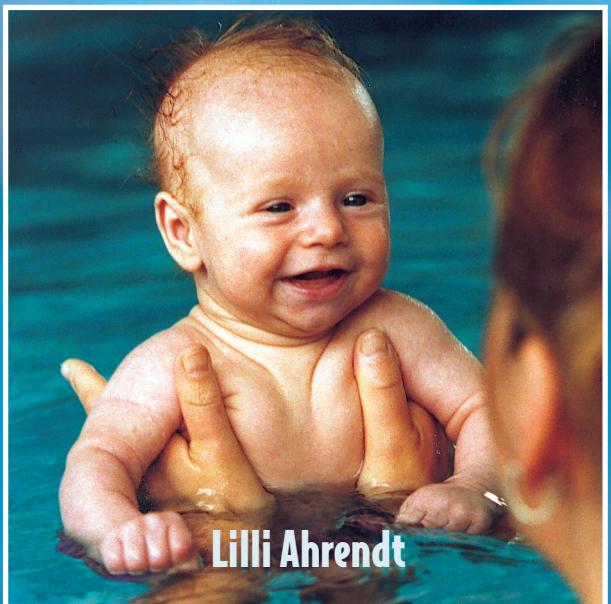
BABY SWIMMING



Lilli Ahrendt

MEYER & MEYER SPORT

Baby Swimming

General comment:

In this book the term 'parent' also applies to any other accompanying person who is important to the baby.

For reader-friendly reasons the book has been written in the masculine form. The feminine form is implied to the same extent where appropriate.

Lilli Ahrendt

BABY SWIMMING

PARENT-CHILD-SWIMMING DURING THE FIRST YEAR OF LIFE IN THEORY AND IN PRACTICE

With photos by Mathilde Kohl

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Foreword

Baby Swimming was brought into Germany from the USA by Liselott Diem in the 1960s and was established into the plans for future lectures and research work at the German Sport University.

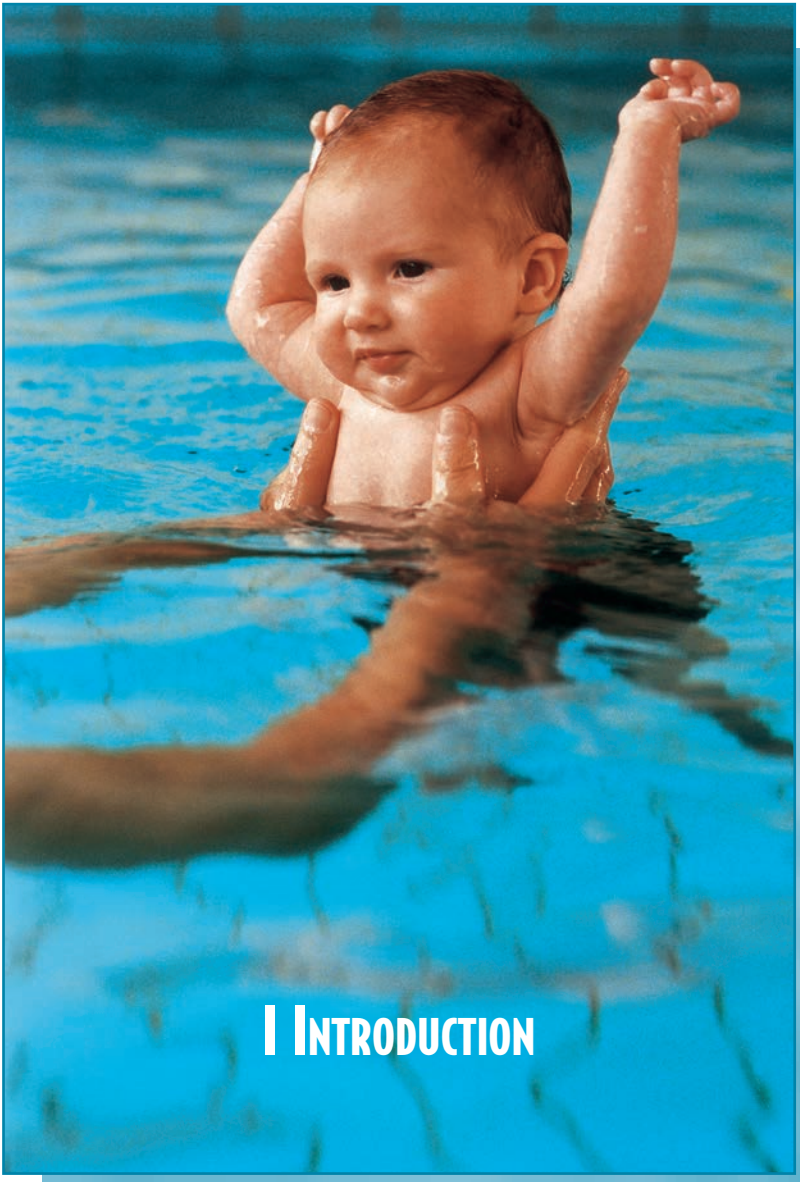
Since then it has changed its form in many respects. It roused lively interest not only in the newly united Germany but also in European neighour countries, in particular France and the Scandinavian countries, and continued to develop.

Thus the trend towards leisure pools, the building of small pools with warm water, television and radio reports about water births and nimble children in the water, but also scientific reports about baby swimming have triggered off a genuine boom in the range of movement opportunities for babies in their first year: the so-called baby swimming.

The wide variety of different opportunities available faces a great demand for well-informed instructions and expert guidance on the part of parents, clubs, local governments, swimming pool staff, childcare centres. Despite this a universally valid qualification system for institutions offering such courses and for the course instructors themselves still doesn't exist. The German Swimming Federation grasped the initiative last year however with the first instructor-training classes.

This book provides information for both the supply and the demand side on the preconditions necessary, on the behaviour of babies and parents in the water, on secure holding grips and exercises for stimulating movement, the expected effects and the various objectives of early motor stimulation in water. One objective however has proved to be unrealistic, and that is the preparation of young world class swimmers with the help of baby swimming.

Cologne, March 2001
Kurt Wilke



1 Introduction

The term baby swimming originates in America, and does not relate to any specific age group other than very young children. It is however possible to differentiate between young children at different stages in their development, and for the purposes of this book the following guidelines are applied:

- Baby Swimming: (Up to 12 months)
- Young Toddler Swimming: (1 - 2 years of age)
- Toddler Swimming: (2 -3 years of age).

The term swimming is used despite the fact that most babies will not be capable of independent motion in the water, but what they are doing relates to the earliest stage in the development of swimming action.

The parents themselves take active part here, by supporting the baby with their hands or by ensuring the baby's head is above the water so as to be able to breathe. The term *Parent-child-gymnastics* in water (cf. GRAUMANN 1996; GERMAN FEDERATION OF SPORTS PHYSICIANS 1994) on the other hand depicts a style of exercise which takes less consideration of a baby's spontaneous movements and the mutual parent-child influence.

Baby swimming represents a parent-child programme of movement under experienced guidance in warm (about 32°) and up to shoulder height water, taught in groups in a playful atmosphere. The lesson which is aimed at early stimulation and the simultaneous pedagogical care characterise the conscious and deliberate actions of the parents with the baby.

Depending, of course, on how well the baby is able to hold up its head, the possible age for joining a course is on average from the 12th week onwards.

Beginning at this time is of advantage as in the first six months – from a neurological point of view – the brain development process is most evident; bonding with a particular person (trust instinct) takes place within this period and the reflex swimming movements are at their strongest. Particularly when baby swimming has been recommended for therapeutic reasons it is then wise to begin with this early stimulation before the baby begins to make strange or throw tantrums; these factors significantly hinder progress.

It is also possible to begin later. One must consider however that in the second six months of a baby's life it starts becoming afraid of strangers and strange places, teething begins, its proneness to illness increases; as the baby is now getting interested in moving forward on the floor and due to its motor skills it is now less dependent on movement stimuli from outside than it was before.

Baby swimming consciously strengthens the parent-child relationship and through early contact with other babies of the same age it furthers the child's development particularly the personality, social and motor skills. As well as this the child's positive attitude to water and the extent of its familiarity with it (cf. JENNER 2000) forms the basis for its enjoyment and overall perception of water (e.g. holidays, shower). This lays the foundation for a child's interest later in learning to swim and complies with the basic principle of teaching swimming – to initiate the learning process by getting used to and coping with the water step by step.

In general a child is not consciously able to learn a proper swimming technique until it's at least three when it has an adequate level of cognitive, physical and motor maturity.

II The Theory Of Baby Swimming

1 Water

From a chemical aspect water is the bonding of hydrogen and oxygen. It has neither smell nor taste, is transparent and has a faint blue colouring. A human being consists of over 60% water and its life begins in these surroundings in the form of amniotic fluid.

1.1 The Meaning of Water: from a Prime Element to an Element of Movement

Water, a human's *prime element* generally has a phenomenal effect on babies and toddlers. This varied but yet formless element impresses them with its clarity, purity and its pouring and swishing. Because of its thermal and physical chemical qualities this liquid element has always been used not only for cleansing and spiritual refreshment but also specifically for medical and regulatory purposes.

A baby is familiar with water in a special way. In its pre-natal phase it was *lodged safely* in the waters of the womb. Being surrounded by water combined with a great freedom of movement and muscular relief, the skin-intensive stimuli and internal care and devotion from its 'trust person' are some of the possible reasons for a baby's mostly positive reactions when in water.

The medium water offers the baby an entire stimulus-reaction-repertoire; it *answers* the body's movements with changes such as splashing, flowing and frothing. The baby thus perceives itself, its body and its movement to a much more intensive extent than on land.

When it experiences this both delightful as well as self-initiated and causative activity, it is encouraged to repeat the movements, to experiment and to learn. As one can generally see a positive response to water with babies, swimming is classed as being a stimulation for movement development, i.e. as a furthering of movement in water.

Whereas a baby under 'dry' conditions is not able to move itself forward within the first six months and can only raise its head with effort when in prone position leaning on its arms, the three-dimensional freedom of movement in water enables it to move forward with parental support and to test out numerous movement possibilities either repeatedly or in a varied form. Besides, the parent's pulling hand – under the baby's chest at its centre of gravity – allows the baby a more dynamic action with its limbs.

The parental holding under the chest and the resulting pressure effect in the breast zone favours the baby's upright position in the water. Its body assumes a symmetric[1] position, the cervical and dorsal spine are stretched, the shoulder blades[2] and arms are pointing outwards. The legs are out in front kicking alternately. The *reflex locomotion* is particularly stimulated by water splashes and touching the soles of the feet.

Stemming from the VOJTA theory of a *global movement pattern, locomotion reflex* as a forming growth stimulant affects the support apparatus and the locomotor system, the central nervous system (CNS) and one's psyche (cf. POTACS 1995). If the *creeping reflex* is stimulated in the prone position, the horizontal muscles are activated and the co-ordination inherent in the CNS is *awakened*.

The elements of these *muscle games* – gravity shift, straightening up, balance shift and the co-ordinated change in the body's actions – are also evident to a certain extent in the deliberate and conscious locomotion patterns which occur later on. So, the co-ordination is activated as well as those muscles for movement patterns (e.g. creeping process), both of which in the normal development process without baby swimming would only occur later. This is due to the necessary confrontation with gravity and the maturity of the CNS.

(1) Even, harmonious.
(2) Outward movement away from the body axis.

1.2 The Effects of Water on Babies

Physical and sensual impressions change when we are in water. When a baby's body is dipped into water, this triggers off – depending on the development phase-instinctive reflex swimming movements which stimulate the brain activity of the CNS. Being naked intensifies the perception of one's body and its movements and supports the structure of the body scheme.

The extensive touch stimulants through the water resistance stimulate those nerve fibres lying under the skin, creating a relaxing effect regulating muscle tone. This is why babies sleep longer and more deeply after swimming.

A baby experiences its first three-dimensional movement activities in water as opposed to on dry land. It has no problem pulling its legs under its body. These initial *reflex swimming movements (cigarette lighter)* are evident up to its fifth month. They are then replaced by bend and stretch movements a month later and in the eleventh month the movements represent voluntary locomotion – a type of *running movement (cycling)* in the upright position (cf. WIELKI/HOUBEN 1983). The patterns of movement and the upright posture do not differ in principle from motor development under dry conditions. When in water, one's body is open to the influences of physics which have a stimulating effect particularly in those stages of development where a baby is neither able to move around by itself on the ground nor counteract gravity using muscle strength.

The *reflex swimming movements* triggered off by the water enable the baby from to see itself as "independent" from an early age[3]. Prone position offers it a wide visual spectrum of perception. With the help of the parental support in the correct dosage the baby can take on its first targets. The positive cause-effect-relationship of those movements experienced encourage the baby to develop a high level of self-motivation to move. Praise, kind words and protective skin contact all intensify the mother-child or father-child relationship and raise the baby's self-confidence.

Bouyancy force reduces body weight according to the Archimedes principle[4] thus relieving the support apparatus and the locomotor system. Less static muscle strength is needed in water, thus making way for dynamic muscular work.
Another factor here is the light clothing which means that movements are not restricted.

Those parts of the body out of the water need static posture checks. Because the medium water moves by itself the baby's organ of balance is given intensive stimulation to check its own movements and improve them.

A water temperature of 31°-33° [5], perceived as lukewarm, provokes active movement, deepens breathing and activates the cardiovascular system. At the moment of water contact and due to the chest dipping in and out alternately the baby's breathing speeds up; after a good while in the water every breath taken is longer and deeper, the pressure on the chest brings about increased exhalation, the muscles assisting breathing are strengthened which in turn has a positive effect on chest development.

Because of the water temperature and the movement within it, muscle tone is regulated to such an extent that an economisation of movement occurs along with a constant improvement in their co-ordination. A water temperature of more than 33° would relax the muscles and reduce movement impulses.

Friction resistance hinders movement and strengthens muscles. The quicker the movement is and the bigger the surface of offence is, then the higher this resistance becomes which one's body puts up against the water. In the case of inaccurate movement processes e.g. following an accident or due to a handicap, friction resistance can be used for guidance and control.

(3) On average in the third month.

(4) Archimedes principle: the body loses an amount of weight which equals that of the fluid which was displaced through its entry into the water.

(5) After 45 minutes in 33° warm water body temperature drops by a maximum of 0.2% (cf. BAUERMEISTER 1984).