The baby's first cry after birth

Effects on the child's body

Consequences for the child's body if there is no first cry

Master thesis

Submitted by Ulrike Hämmerle D.O., D.P.O.

Concept

Author: Ulrike Hämmerle D.O., D.P.O.
Jägerstrasse 24/22
1200 Wien

Title: The baby's first cry after birth – effects on the child's body and consequences for the child's body if there is no first cry.

Structure: Description of the physiology of the first cry according to conventional medicine and emphasis of the importance of the first cry as presented in a course by James Jealous (Phase 4).

Methodology: Survey of 34 cases, divided into two groups
17 children with a first cry (control group)
17 children without a first cry
All 34 children were aged two weeks to 12 months. The groups included both sexes.
Babies born by Caesarian section or premature babies were excluded.

Analysis: During the initial examination, important data was collected by means of the questionnaire used at OCC London, and important parameters were noted on the patient's data sheet. Later on, these parameters were integrated into another documentation/statistic sheet.
The individual results are depicted in diagrams.

Bibliography:

Jealous James., Phase 4, March 2001;

Klinke Rainer und Silbernagel Stefan: Lehrbuch der Physiologie, p. 254-255, 506-507; Thieme Verlag, 1994;

Netter Franz: Nervensystem 1, Neuroanatomie und Physiologie, p. 32, 35; Thieme Verlag, 1987;

TABLE OF CONTENTS

1. Preface

Approximately six years ago I submitted my DPO thesis entitled "*Partially disturbed abilities of children and their treatment through osteopathic liquid techniques*" to the Osteopathic Children Center in London.

In a relatively large number of children coming to my office with partially disturbed abilities, I was able to find a common denominator while searching for possible causes. This common denominator was the baby's first cry or the lack thereof.

For this master thesis, instead of writing about "*Partially disturbed abilities of children and their treatment through osteopathic liquid techniques*" regarding the problem of three-dimensional vision, logical thinking, memory, coordination and concentration, I would like to focus on the baby’s first cry.

Therefore, the title of my master thesis is:

The baby's first cry after birth
Effects on the child's body and
consequences for the child's body if there is no first cry

2. Introduction

Another factor which aroused my interest in the topic was that I thought it indispensable that the people assisting during delivery (i.e., the doctor, the nurse, an accompanying osteopath or a relative) pay more attention to the baby's first cry. If the baby does not cry for the first time, they can then give the child not only the best conventional treatment but also provide the baby with osteopathic treatment. It is important to send a significant signal to the newborn's body if the baby is not equipped with this signal by itself. This should give the child the ability in its future life to react to its environment and its various influences on the human being (Comeaux, 2002; Fulford, 1996). This reaction can point to a well-functioning immune system as well as normal physical, mental and emotional development in the child.

2.1. Aim of the study

By presenting various subjects as well as symptoms I would like to proof the necessarity and importance of the baby’s first cry for the child’s organism – regardless if it crys by itself or by osteopathic’s assistance.With this clinical study I want to show how nessesary an osteopathic examination and traetment is for the ongoing condition of the growing child on every level.

For this reason I want to pinpoint both obvious as well as less obvious differences between babies with a first cry and without one in this paper. To me it is important to rather focus on the anamnesis and the examination instead of the treatment and it’s methods.

2.2. Questioning

Are there obvious differences in the body of the baby and less obvious differences between babies who perform the first cry and those who do not perform the first cry?

In today's medical literature, only little can be found on the baby's first cry after birth and the significance of the first cry. The physiological processes involved, which I will describe later for the sake of completeness, are mostly only described very briefly. Moreover, I was unable to find anything in medical textbooks on the enormous consequences the lack of a first cry immediately after birth can have for the immune

system, neurological development, as well as the child's perception and general manner of reacting to and within its environment.

Postgraduate training in the field of child osteopathy at the Vienna School for Osteopathy and my stays in London at the Osteopathic Centre for Children (OCC), and above all the excellent courses of James Jealous, especially Phase 4, have enabled me to learn a great deal about the significance of the baby's first cry and its effects on the development of the child and its reactions to various diseases.

3. Basic facts

3.1. Definition of the first cry (in conventional medicine)

The first cry of the newborn is defined as the baby's very first exhalation of the first breath within 20 seconds after birth. (Fulford, 2002)

3.2. The different physiological aspects to the baby´s first cry

First of all, I would like to discuss what happens when a baby cries for the first time. What causes the first cry, or what motivates the baby to breathe from the point of view of conventional medicine?

3.2.1. The PCO_2 level in the blood rises, that is, metabolic acidosis occurs due to hypoxia during birth.
3.2.2. The baby experiences a feeling of cold caused by the great difference in temperature between the womb and the delivery room. (on average, the temperature drops by 15 °C.)
3.2.3. The baby undergoes a transition from a liquid environment to a solid environment.

In this section, I would like to discuss further and explain the three aspects mentioned above:

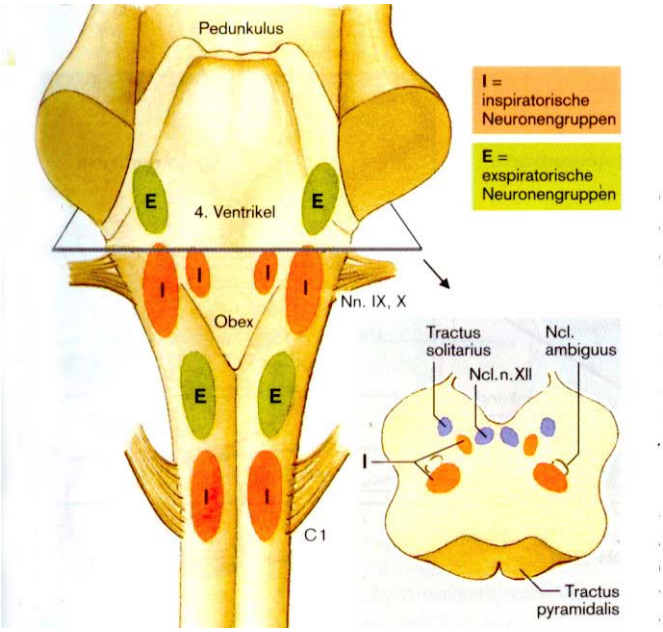
3.2.1. The blood

The brain has a center of perception for the amount of carbon dioxide (see picture 1 below) which is dissolved at a certain pressure in the blood. If this pressure exceeds a certain limit, a reflex-like reaction occurs in the respiratory center of the brain – the medulla oblongata – which forces the person to start breathing or to breathe more deeply until the carbon dioxide level in the blood return to normal.

During labor, the contractions of the uterine muscles physiologically cause the gas exchange between the mother's and the child's blood to shift toward a higher carbon

dioxide level. Thus every contraction increases the carbon dioxide level in the child's blood. This is especially the case during the expulsive stage (or second stage) of labor, when the mother completely stops breathing for short periods of time.

This "acidosis" of the child's blood is a factor which plays a role in inducing the baby to breathe. (Carreiro, 2003; Hassauer, 1995; Silbernagel, 1994)



Picture 1 (Klinke, Silbernagel, 1994, p.: 255)

3.2.2. Differences of the temperatures

In the mother's womb, the fetus can develop at a constant temperature level of 37 °C. The temperature in the delivery room usually averages 22 °C, making for a difference of about 15 °C. The naked and wet newborn is necessarily exposed to this drop in temperature, which is an enormous temperature shock for the child. The baby is frightened, takes a deep breath and during the following exhalation starts crying with all its might. (Hassauer, 1995; Silbernagel, 1994)

3.2.3. Environmental change

For 9 months, the fetus lives and grows within the protective envelope of the uterus filled with amniotic fluid. According to the principle of Archimedes, this means that the embryo perceives itself to have less weight in the mother's womb. Thus the fetus is not fully subject to gravity but can grow in a "weightless" environment.

At birth, the baby loses this "weightlessness" and feels several times heavier. During delivery, the infant experiences its full weight of three to four kg. (Hassauer, 1995)
This could also be a very understandable trigger for the baby's first cry.

3.3. The first cry and conventional medicine

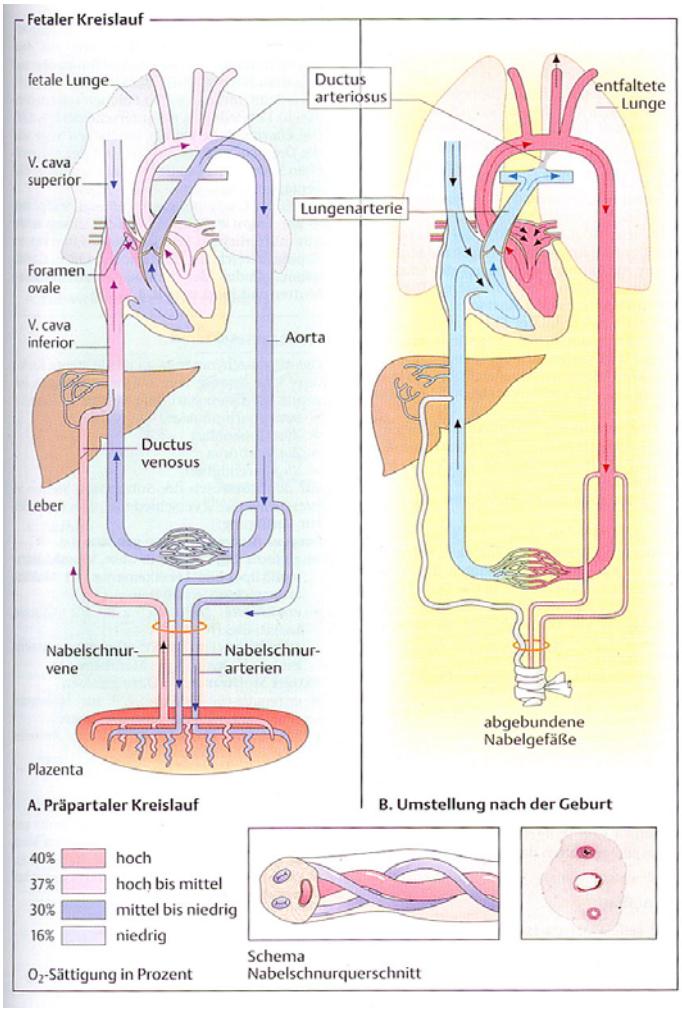
Having explained why the first cry actually occurs (and for the sake of completeness) I would like to mention the significance of the first cry for conventional medicine meaning the expansion of the lungs and I want to explain the transition from prepartum circulation to postpartum circulation.

First of all, the baby's first cry – that is, its first breath – causes the lungs to expand, and secondly, fetal circulation is transformed into the circulation of the newborn (Carreiro, 2003; Goerke, 2002).

3.3.1. Expansion of the lungs

In the uterus, the fetus' lungs are not aired, thus they do not expand. The alveoli are deflated and contain fluid, as do the bronchi. About 20 seconds after birth, the lungs expand due to the baby's first breath. Through this first deep inhalation, which leads to strong negative pressure in the thorax, air flows into the alveoli. The inflowing air causes the alveoli to expand. (see picture 2 below)

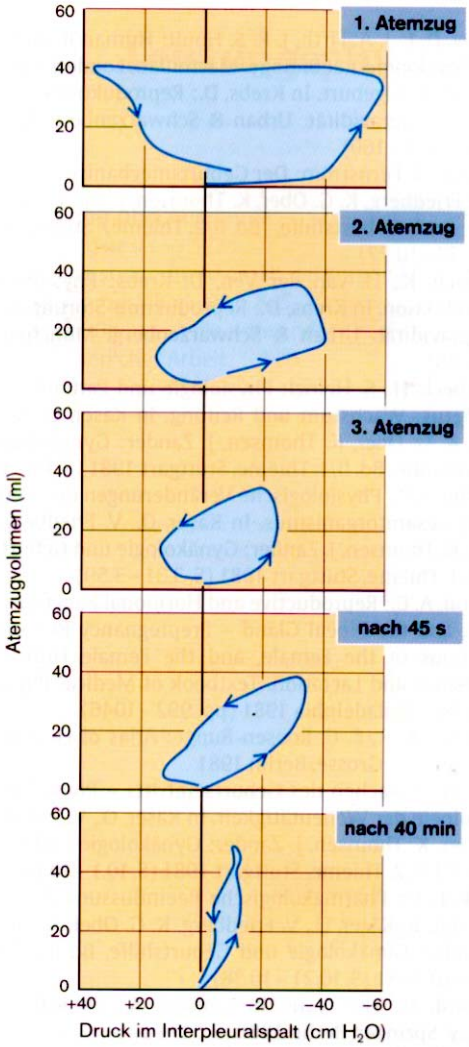
During the ensuing exhalation phase, the surfactant prevents the alveoli from completely collapsing again. Lung pressure increases to a level clearly above the outside pressure, which then causes the fluid to be expelled from the lungs (Klinke, Silbernagel, 1994).



Picture 2 (Goerke, 2002, p.: 101)

The is a very strong restitance against ventilation, but because of every exhalation over the following hours this resistance decreases. The very first cry of a baby is the hardest and with every following inhalation and exhalation of a newborn gets the respiration more and more effective. A normal lungcomplience is reached fourty minutes after birth. (Carreiro, 2003; Klinke, Silbernagel, 1994)

(see picture 3 below)



Picture 3 (Klinke, Silbernagel, 1994, p.: 507)

3.3.2. The transition from prepartum circulation to postpartum circulation

Since in the uterus there is no air in the fetus's lungs, the pulmonary vessels are also compressed and show a high level of resistance. The majority of the fetus' blood flows through the foramen ovale and the ductus arteriosus Botalli. The child's first breath expands not only the alveoli but also the surrounding capillary networks and pulmonary vessels. Therefore, the vessels' resistance is immediately reduced, and most of the blood flows from the right side of the heart directly to the lungs and back into the left vestibule via the pulmonary veins. The pressure in the left vestibule is higher than that in the right one, so the existing membrane covers the foramen ovale and closes it. There is no longer a direct connection between the two vestibules and in most cases the foramen ovale closes up completely. Since no blood passes through the ductus arteriosus Botalli anymore and the blood can flow into the lungs, the ductus closes within a few days and turns into a

thread of connective tissue (ligamentum arteriosum). This also affects the vessels which were necessary for maintaining fetal circulation, including the ductus venosus, the Aa. umbilicales and the V. umbilicales, all of which are also transformed into connective tissue. (Goerke, 2002; Carreiro, 2003)

3.4. Criteria of the baby`s first cry

Having taken a short excursion into the physiology of birth, I would like to mention several other criteria of the first cry:

3.4.1. The right time of the first cry

It is important to observe when the baby emits its first cry. In osteopathy as well as conventional medicine, there is a huge difference whether the first cry occurs within the first 20 seconds after birth, at a later point or after suctioning.

It may also occur too early, before the baby's shoulders are born. The baby might also start breathing at a time when no outside air is available yet, as a high level of carbon dioxide in the blood will trigger this reflex in the respiratory center of the brain. The consequence is an aspiration of the amniotic fluid.

The amniotic fluid might be pathological due to a vaginal infection or even discolored, in most cases due to the premature secretion of meconium into the fluid because of insufficient oxygen supply to the child, since hypoxia causes the colon to contract. In such cases, the first cry within the mother's womb has serious consequences for the life and health of the newborn from an osteopathic as well as a conventional point of view. (Carreiro, 2003; Goerke, 2002; Hassauer, 1995)

3.4.2. The umbilical cord

It is also important to pay attention to the condition of the umbilical cord. Malformations or problems related to the umbilical cord usually go hand in hand with an insufficient supply to the child.

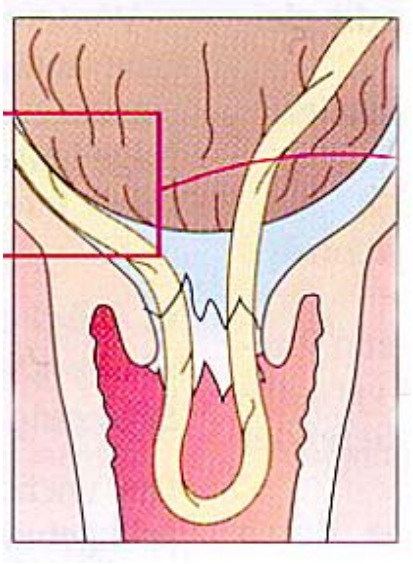
Does the umbilical cord have a normal length of 30 - 60 cm?

If the umbilical cord is longer than 60 cm, the following problems can occur:

- An actual knot in the umbilical cord

Picture 4 (Goerke, 2002, p.: 129)

- Umbilical cord torsion
- The umbilical cord might be wrapped tightly around the fetus or the newborn
- Prolapse of the umbilical cord



Picture 5 (Goerke, 2002, p.: 167)

If the umbilical cord is shorter than 25 cm, the following complications can occur:

- Premature detachment of the placenta due to strong pulling
- Rupture of the umbilical cord

The aforementioned problems/complications related to the umbilical cord can affect the fetus while it is still in the womb. Even when the baby is born naturally, these problems influence the oxygen supply to the child during birth and therefore also affect the baby's first breath (Goerke, 2002).

Another important factor is the cutting of the umbilical cord. If the umbilical cord has enough time to cease to pulsate – between one and one and a half minutes – there are sufficient blood reserves in the placenta to guarantee the complete expansion of the lungs (Goerke, 2002, Fulford, 2002). Therefore, many hospitals in Austria pay special attention to allowing the umbilical cord to cease to pulsate.

3.4.3. The quality of the first cry

One fact that is definitely worth mentioning and should probably be taken into account more often in the future is the quality of the first cry. The quality, the pitch and the volume of the first cry can provide important information about the well-being of the newborn:

If the sound of the first cry is very shrill, it can be a sign of a high intra-osseous pressure in the cranium.

If the sound is hoarse, it can be a sign of cramped muscles.

A first cry which sounds like that of a cat is also well known in conventional medicine. It is an indication to the obstetric attendants that the newborn might suffer from a genetic disease.

If the first cry is very weak or non-existent and does not get stronger after various initial treatment measures by the obstetrician, a severe disease or neurological disorder cannot be ruled out. (Carreiro, 2003; Upledger, 1996).

3.5. The significans of the baby's first cry in osteopathy

Now I would like to discuss in detail the significance of the first cry in osteopathy. In researching the first cry, my own view of it has become more concrete, varied and comprehensive.

James Jealous (class phase four, 2001) describes the first cry as follows:

When a child is born and takes its first deep breath, it should synchronize, that is, it undergoes what can be called an "ignition experience".The tension in the child's system increases at the moment of its first breath. At this point, primary respiration in the cranial system should be synchronized with thoracic respiration.
Automatically, a CV4 in the child's system and an enormous potency of liquid arise in the tissues, in the central nervous system and in every single cell.

This ignition takes place in the center of the third ventricle and is oriented along the midline. This means that the ignition system spans from one end of the midline, the lamina terminalis, to the other end of the midline, the filum terminale. As regards the ignition system, another important anatomical and functional area in the human body along the midline is the cysterna chylie. The cysterna chylie is the fulcrum of embryonic development. It is situated directly below the navel, where the head of the embryo meets the tail of the embryo during embryonic development.

In treating the ignition system, we can observe reactions along the midline and thus also in the cysterna chylie.(Jealous, 2001)

The start of the ignition system causes important reactions in the human body. The midline is strengthened and the functioning of the central nervous system is reoriented. The bones of the cranium shift into the appropriate positions and can thus grow and develop. The ignition system also has a decisive influence on the child's perceptive abilities. This is of great importance to the development of the child's locomotive and cognitive abilities. (Jealous, 2001)

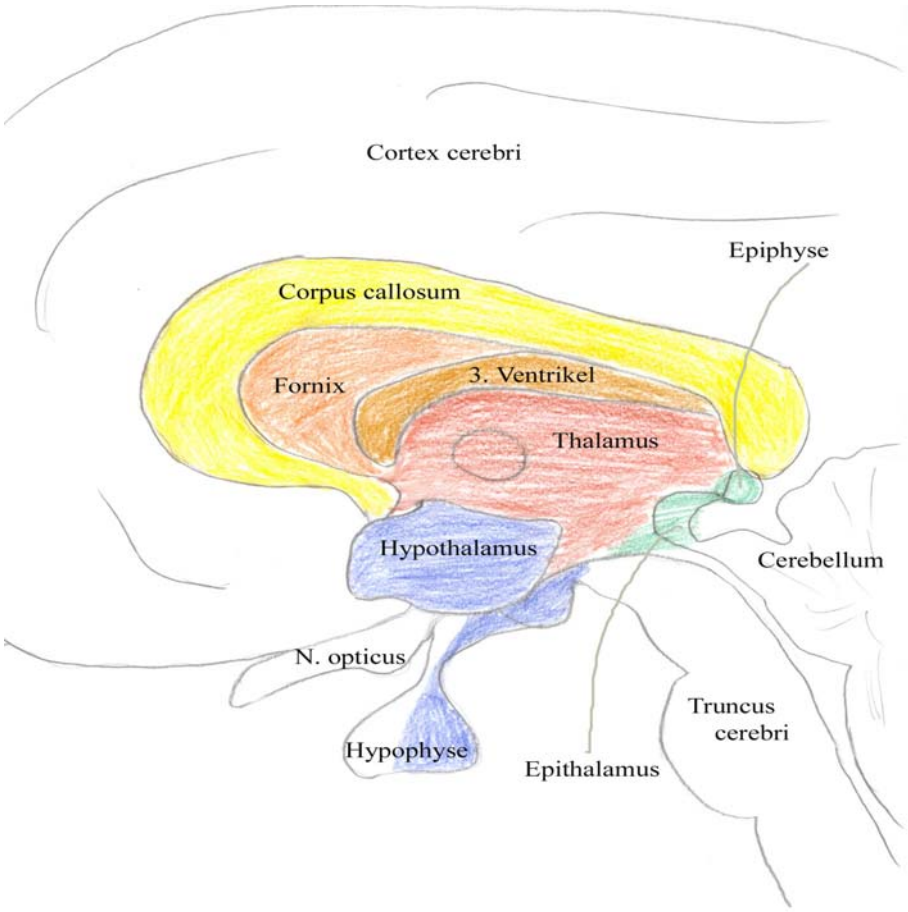
The triggered ignition system also has important effects on the cells:
The trophicity of the cells – and of the entire body – is improved. If the sympathic nervous supply to the cell is balanced, oxygen, glucose and vitamins can be processed properly by the cell and it can fulfill its normal nutritive function. Thus the cell is strong enough to "drain off" any excessive supply of sympathic interference, in other words, it is able to heal.(Jealous, 2001)

With a well-started ignition system or a wide and normally functioning third ventricle, the human being is able to cope with any kind of stress in his/her body and in the environment, and to react and relax.

Without a well-functioning ignition system, there is no movement from an osteopathic point of view. There can be no longitudinal fluctuation along the midline, and the entire system of the human body cannot function properly.

Children whose ignition system does not work properly cannot, for example, cope with a fever in their body. Asthma and allergies in children can often be related to an ignition system which was not fully ignited. (Jealous, 2001)

Due to the close anatomical connexion of the third Ventricle and other important areas of the human brain I want to show the link between the newborns first cry and problems in the sensomotoric development. In addition I mention these anatomical fields. (Kahle, 1986; Duus, 1987)



Picture 6

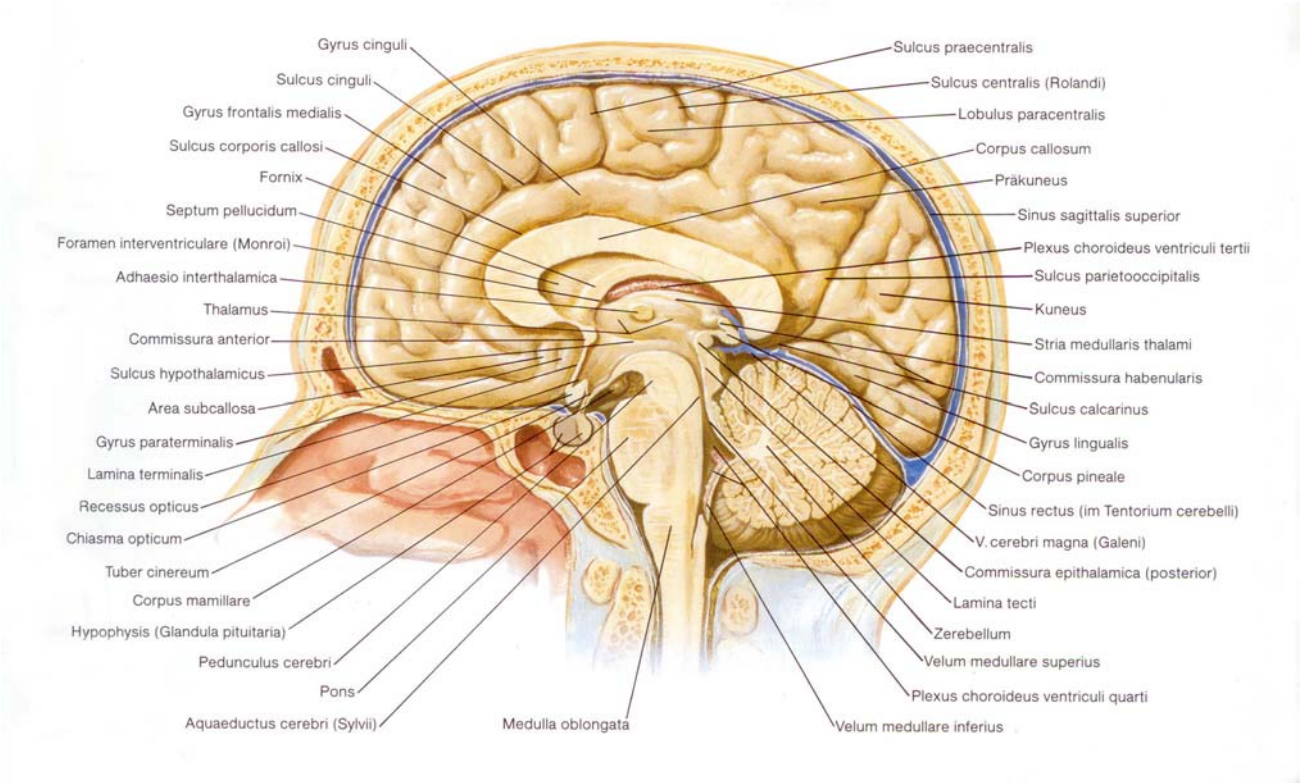
We know from anatomy that the third ventricle is situated in the diencephalon, and that it lies in direct proximity to the epithalamus, thalamus, hypothalamus and subthalamus.
I do not want to describe the entire anatomy of these very important structures, however, I would like to mention a number of areas of importance to the osteopath.

In the epithalamus, it is worth mentioning the epiphysis, which is located at the posterior wall of the third ventricle and above the lamina tecti. The function of the epiphysis is to inhibit / slow down the development of the genitalia until puberty. Afferent as well as efferent paths lead to the epithalamus (in the midbrain). The intake of food is stimulated by the influence of olfactory sensations. This olfactory input triggers the secretion of saliva and gastric juices and ignites the motor cores of the muscles involved in chewing and swallowing.

The thalamus forms the lateral wall of the third ventricle. It also has afferent and efferent connections.

It constitutes the subcortical center for all incoming exteroceptive and proprioceptive stimuli from the exterior and interior of the body. The thalamus is also called the "door to one's consciousness". Among other things, its main function is that of an integration and coordination organ. Sensations like pain, listlessness, well-being, etc. are influenced by the thalamus and further conducted into the cerebral cortex.

The hypothalamus forms the caudal wall and the floor of the third ventricle.
It contains the center for all vegetative functions of the body. However, it influences not only the vegetative nervous system but also the endocrinous-vascular system due to its connection to the hypophysis. The hypothalamus has afferent and efferent connections to all parts of the nervous system (cortex, frontal lobe, thalamus, basal ganglia, brainstem, spinal cord, etc.), i.e., structures of a various and complex nature.



Picture 7 (Nettter, 1987, p.: 24)

The main function of the hypothalamus is to control and regulate the vegetative functions of the body (balance between sympathic and parasympathic activities). It is responsible for regulating the water and temperature levels of the body, coordinating the inner secretory glands, and controlling the intake of food – to mention but a few of its functions.

For the sake of completeness, I would also like to mention the subthalamus, which is situated beneath the thalamus. If the subthalamus is stimulated with electricity, muscle tension increases and the excitability of reflexes is higher.

In summary, one might identify a link between the body's central nervous system and immune system.

Many studies have been carried out on this topic, as mentioned in Manfred Schedlowski and Uwe Tewes' book (1996) on psycho-neuroimmunology, in which they very aptly describe the cell's neurogenic reactions to inflammations. The authors also suppose that there must be a neuroimmunological component in all allergic reactions such as asthma, neurodermitis, etc. (Schedlowski, M., Tewes, U., 1996)

4. Methodology

4.1. Selection

4.1.1. The sample

A total of 34 children of both sexes, aged between two weeks and 12 months – that is, during their first year of life – were examined and treated according to osteopathic principles.

However, in this paper I will only provide a detailed discussion of the osteopathic examination and not of the treatment.

4.1.2. Inclusions

On the first sight all childen are healthy.

Since breastfeeding is an important factor for the child's immune system, I would like to point out that all children tested were fully breast-fed by their mothers.

4.1.3. Exclusions

In order to guarantee an equal situation for both test groups from the outset, I excluded children born by Caesarian section and prematurely born children (i.e., born before the 36th week of pregnancy).

The babies which had been adjusted did not show any neurological deviationes and had not been treated by an osteopath before.

When questioning the parents, I paid special attention to establishing the moment of the first cry as precisely as possible. Parents or mothers who were not sure about when exactly their baby emitted its first cry were not included in the study.

As mentioned above, the 34 children were divided into 2 equal groups of 17 children. According to the parents, the first group of children had emitted a first cry after birth. I call this group sample group A. This group served as control group, while the second group did not have a first cry according to the parents. In this paper I name this group sample group B.

4.2. Method

With the help of detailed patient documentation (osteopathic childrens clinic patient data sheet of London), I noted important parameters during the initial examination. Later on, all of those parameters were listed together on a second documentation sheet.
The documentation sheet and analysis can be found in the annex to this paper.

4.2.1. First appointment

4.2.1.1. The mother-child-pass

I gained valuable information from the mother-child-pass with its detailed description of the birth, the time of birth, the Apgar rating and information about possible complications.

4.2.1.2. The parents' description

The parents' detailed account of the birth was also a valuable source of information. It was certainly of advantage that their memory of the birth was still fresh due to the young age of the children, thus making the parents' information very precise.

4.2.2. The examination

I did the common orthopathic and neurologic testings for newborns and babys like the Ortolani test and various neurological reflex tests.
I also looked on parameters like:

- The mobility and position of the spine, special C0/C1
- The mobility of the thorax

- Breathing behaviour
- Mobility of the crura of the diaphragm
- Tension in abdomen, thorax and head
- Widening of the ventricles – specially of the third ventricle

I examined the children without clothing in supine and prone position when they were not able to sit. The clinical tests I did in the appropriate position. In cases where the children were already able to sit or stand, I also examined them in sitting and standing position.

4.2.3. Documentation

For ducumentation I was able to use approved data supported by the Osteopathic Children Clinic in London. (see patient documentation sheet in the appendix)

4.3. Analysis

4.3.1. Illustration

On the basis of the documentation sheet of all patients a analysis sheet was made, including 45 parameters out of wich I selected only certain criteria show their relevance in diagrams.

The parameters in the analysis sheet are listed below:

Pregnancy (normal / complications)
Birth (normal / long contractions / with vacuum / extractor / with forceps)
UC (short / around the neck)
Drip
Breech position
Suctioning
Apgar-rating normal (conspicuous, but ok after 10 min / conspicuous, but not ok after 10 min)
Bad sucking
Bad respiration
Bad burping

Vomiting
Bad swallowing
Intensive care unit
Cranial asymmetry
PRI reduced
3rd ventricle not fully expanded
Cerebral fluids conspicuous
SSB compression
SSB strain
Tension in the anterior dura girdle
Tensions in C0/C1
Intra-osseous dysfunction of the occiput
Intra-osseous dysfunction of the sacrum
Midline unclear
Sternum tentioned
Tension in the thoracic spine
Diaphragm not expanded or conspicuous
Lungs in IR
Hip dysplasia
Nutrition (entirely breast fed / bottle-fed)
Vaccinations
Vaccination reactions
Unrest/Crying
Flatulence
Diseases (Congested sinuses/cold / Bronchitis/Asthma, Allergies)
Motoric particularities

The results for Test Group A, i.e., the children with a first cry, are marked in green.
The results for Test Group B, i.e., the children who did not have a first cry, are marked in yellow.

In this study, I differentiated three broad categories, each of which was divided into *Obvious Differences* and *No obvious Differences.*

The three categories are:

a) Pregnancy and delivery
b) Changes in the child's body
c) Physical symptoms

As I have already stated before within these broad categories, I identified individual subjects where it seemed appropriate to establish a link with the first cry, analyzed the individual subjects and then put the results down in diagrams.

In the study, I set the difference factor for the class of *obvious* "*differences*" at three or more children. This means that if the difference between the two test groups was three or more children, the difference was considered to be obvious.

The individual parameter can be seen on the x-axis of the diagram, and the number of test persons is indicated on the y-axis.

In order to enable a better understanding of the study, I would like to mention the parameters that can be related to the first cry. A more detailed explanation can be found in the Results section.

a) In the *Pregnancy and delivery* category, I was able to find obvious differences in the following:
   - Complications during pregnancy
   - Umbilical cord around the neck
   - Suctioning

   No obvious differences in the category *Pregnancy and delivery* could be found in:
   - the length of contractions
   - the number of cases in which a contraction-inducing drip was used during birth

b) Concerning *Changes in the child's body,* I found obvious differences in:
   - The tension of the sternum
   - Non-expanded diaphragm

- Tension between occiput and first cervical vertebra (C0/C1)
- Underdeveloped third ventricle
- Tensions in the anterior dura girdle
- No recognizable midline

No obvious differences in the children's bodies could be found in:

- Primary respiratory impulse (PRI)
- Tension of the thoracic spine
- Sutura sphenobasilaris (SSB – strain)
- Cranial asymmetry

c) Regarding *Physical symptoms* in the children after birth, I found the following obvious
   - Unrest and crying – i.e., babies which cry frequently
   - Congested sinuses / cold

   No obvious differences in the *Physical symptoms* after birth could be found concerning:
   - Flatulence
   - Bronchitis, Asthma and allergies

Later I found two more categories. I found the *category of vaccination* and *reactions because of vaccination*.

At the beginning of this paper I assumed a less obvious difference on these two points. Later during in the evaluation process I noticed that there is indeed a tremendous difference and so I added the chaper entitled "*vaccination*" later in this work.
Due to a remarkeble difference between the two evaluated groups regarding *vaccination reactions*, I carried out another evaluation, which is also presented in a diagram. The results of this evaluation are analyzed in the chapter "continous results".

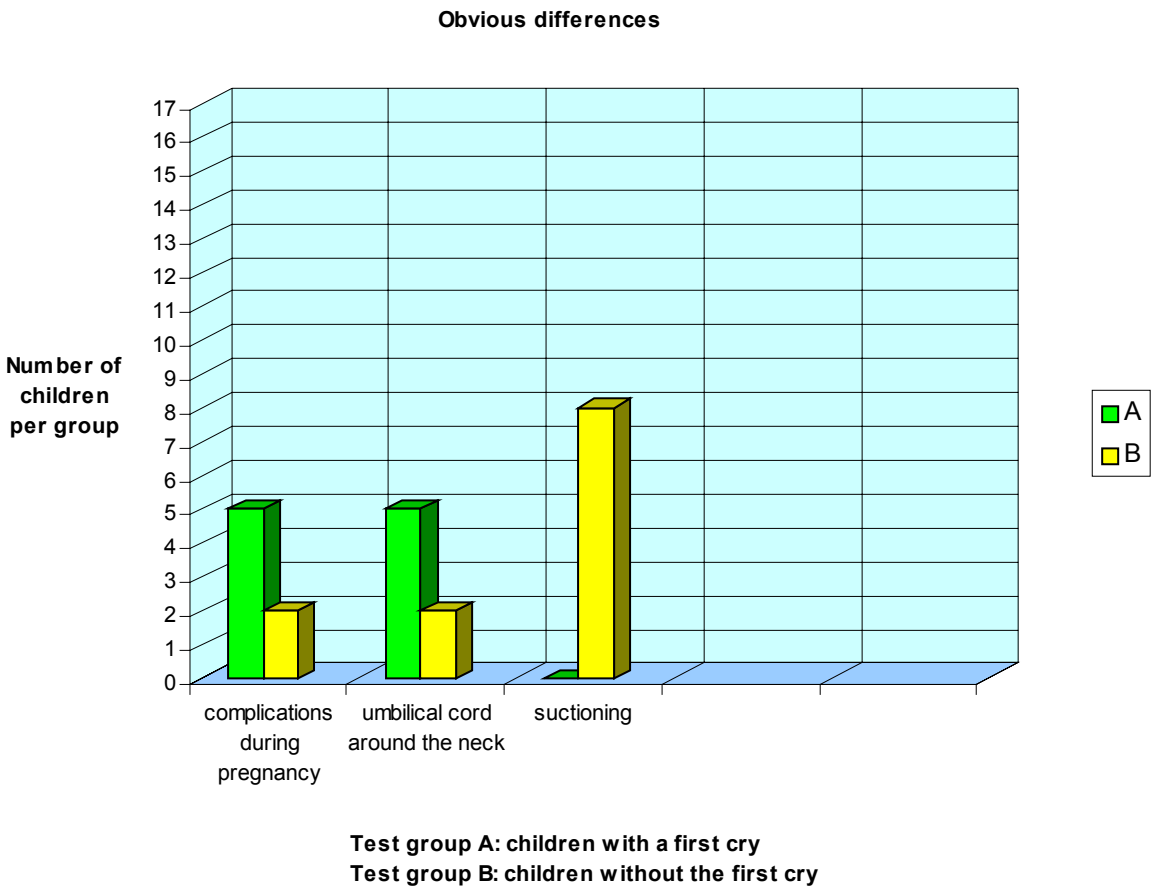
5. Results

5.1. Pregnancy and birth – obvious differences

In the diagram added one can see that more complications during pregnancy could be observed in Test Group A (children with a first cry) than in Test Group B (children without a first cry). The same holds true in cases where the umbilical cord was wrapped around the child. More children with a first cry were affected than those without a first cry.

These two observations are particularly interesting because they convey the impression that children with a first cry should also have more problems in the individual issues of the *Changes in the child's body* category. In other words, one might think that children with more complications during pregnancy or with the umbilical cord wrapped around them during birth would be more likely to have a problem with their first cry. However, the statistics show the exact opposite.

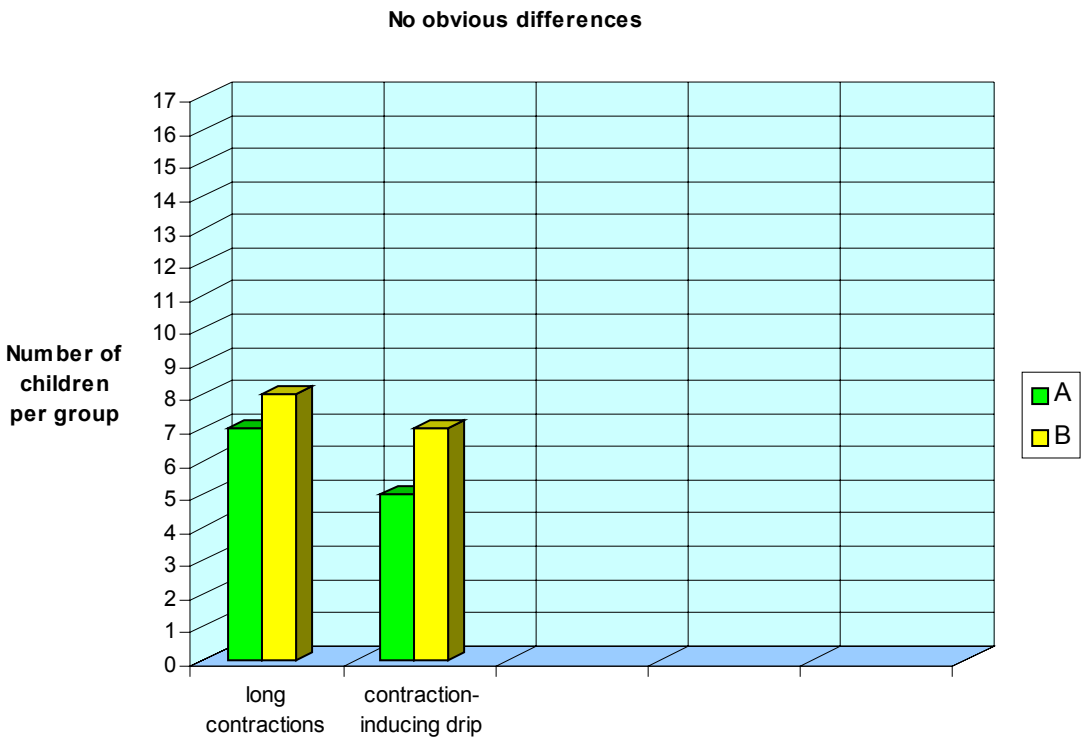
Another area in which I was able to observe obvious differences was the suctioning of the baby directly after birth. Children who did not emit their first cry immediately after birth had to be aspirated much more often than children who cried directly after birth. The diagram shows the great difference between the two test groups. Almost half of the children in the group without a first cry had to be aspirated. The question now is whether the children were aspirated because they did not cry immediately (obstetricians very often use this method as an initial treatment to induce the first cry) or whether their respiratory tracts were really congested.



5.2 Pregnancy and birth – no obvious differences

I could find no obvious differences in the length of contractions. In Test Group A (children with the first cry), seven children had to endure long contraction phases. In Test Group B (children without the first cry), eight children had to undergo a long contraction phase. The difference of only one newborn thus could not be considered obvious.

Concerning the use of a contraction-inducing drip, there were two more children in Test Group B where the delivery and the contractions had to be stimulated or improved.



Test group A: children with a first cry
Test group B: children without the first cry

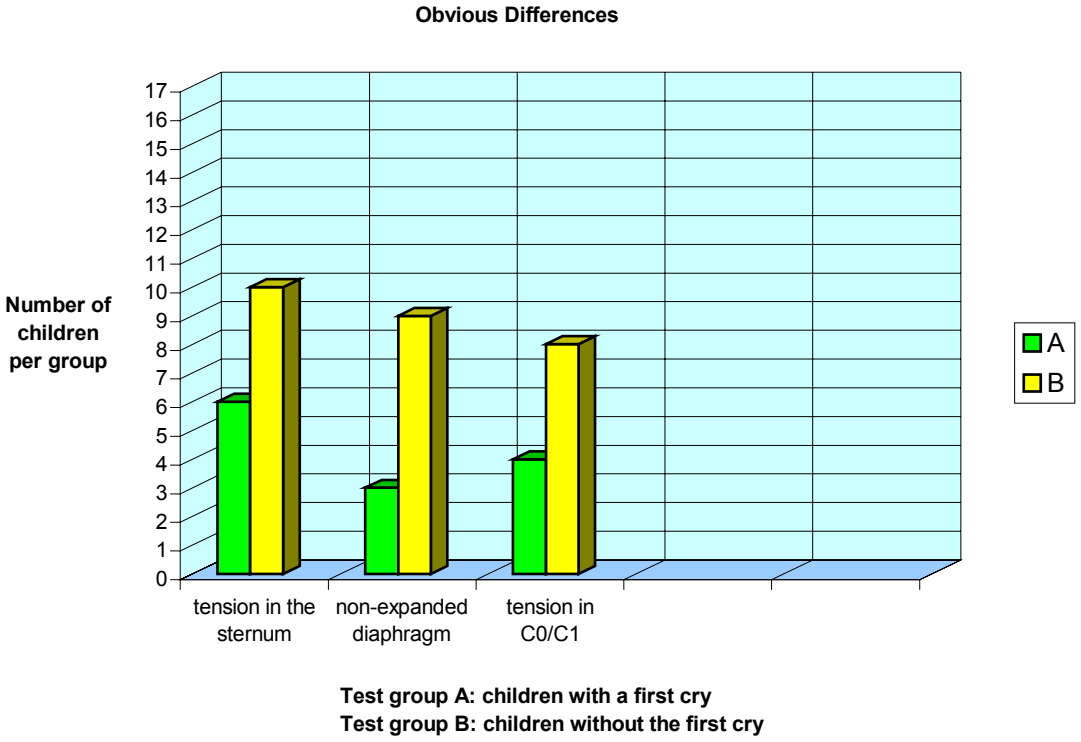
5.3. Changes in the child's body – obvious differences

In this category, I observed the largest number of differences between the two test groups. Some of these differences were quite vast and thus very obvious.

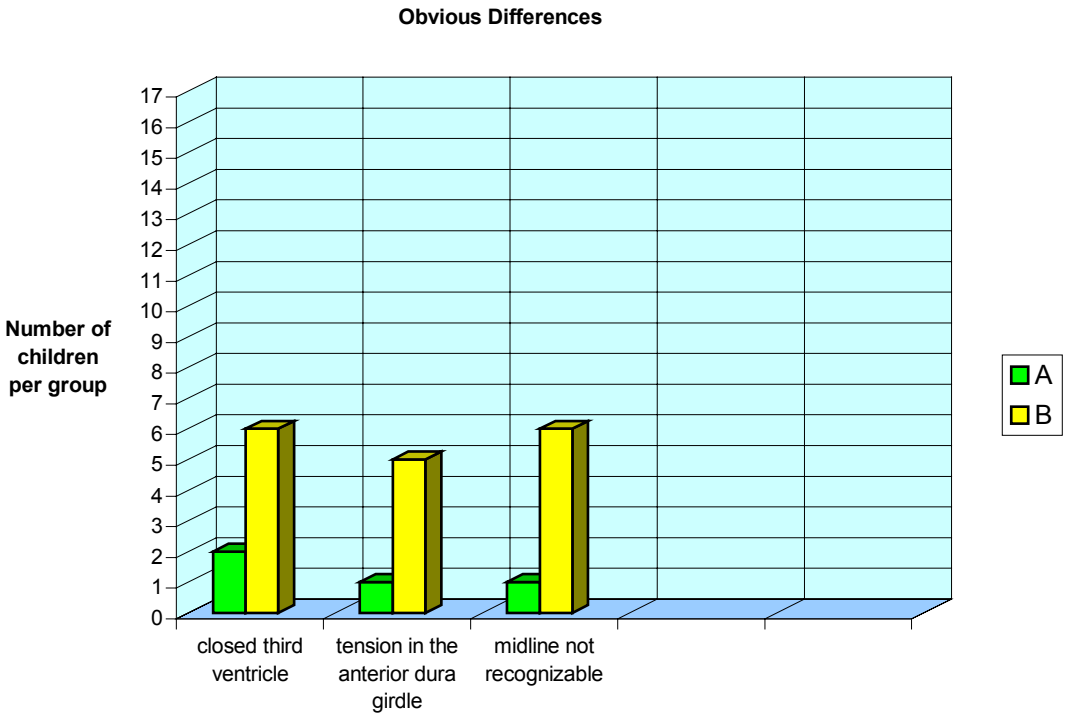
In the test group without a first cry, I found greater tension in the sternum, no complete expansion of the diaphragm, tensions between C0/C1, an underdeveloped third ventricle and considerable tension at the anterior dura girdle, as well as a non-recognizable midline.

These findings alone would prove and confirm James Jealous' statement that the first cry of a child at birth is of great significance and very important for the child's future life and health. The reason for that is that the first cry can be seen as the initial ignition for the third ventricle, its complete expansion and thus its functions within the human body.

The findings also confirm James Jealous' statement that this initial ignition strengthens the midline. The diagram shows clearly that children without a first cry do not have a recognizable midline.



Test group A: children with a first cry
Test group B: children without the first cry



Test group A: children with a first cry
Test group B: children without the first cry

5.4. Changes of the child's body – no obvious differences

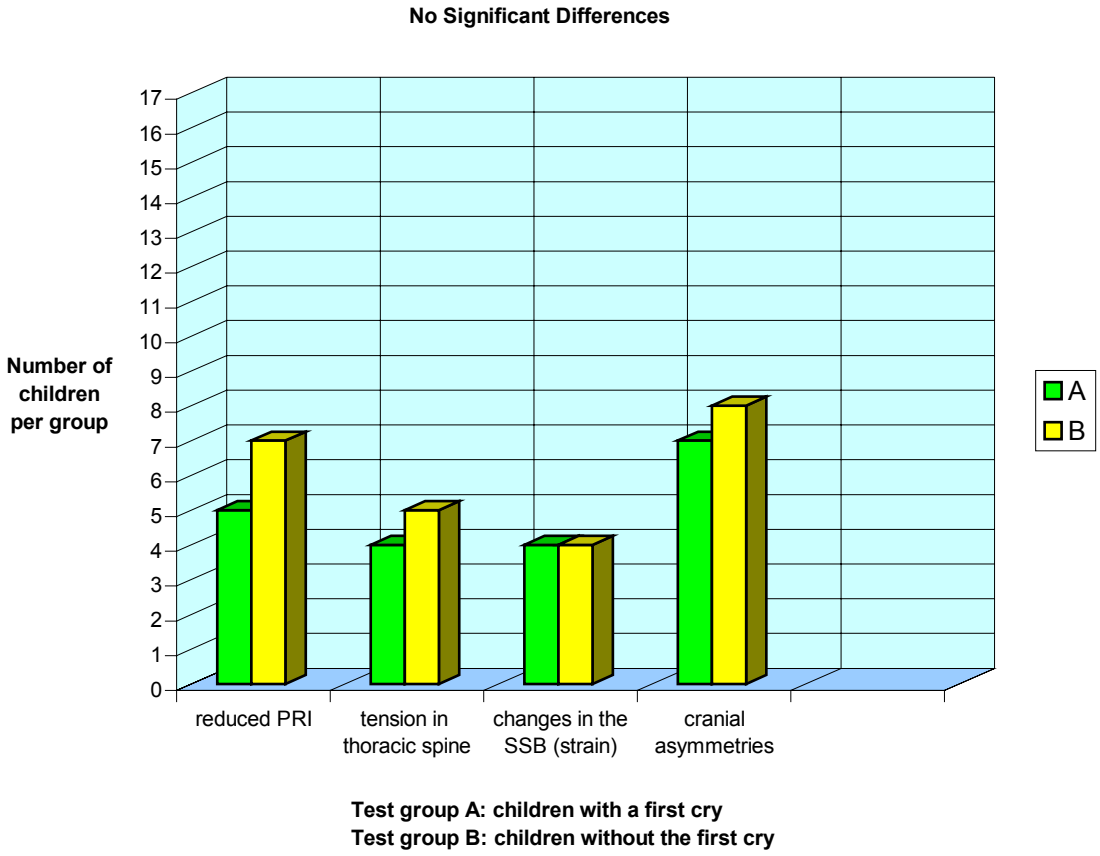
I could hardly find any differences between the two groups concerning exterior cranial asymmetries of the children and strains in the sutura sphenobasilaris.

What I found surprising was that there were also hardly any differences between the groups concerning the tension of the thoracic spine.

When I started analyzing the data, I expected from my knowledge of anatomy that due to incomplete expansion of the diaphragm and the considerable tension in the sternum, there must be greater strain on the thoracic spine of the group of children without a first cry. However, the analysis yielded quite a different result.

What was even more surprising was the result concerning the primary respiratory impulse (PRI). seven children in the group without a first cry and five children in the group with a first cry had a reduced PRI.

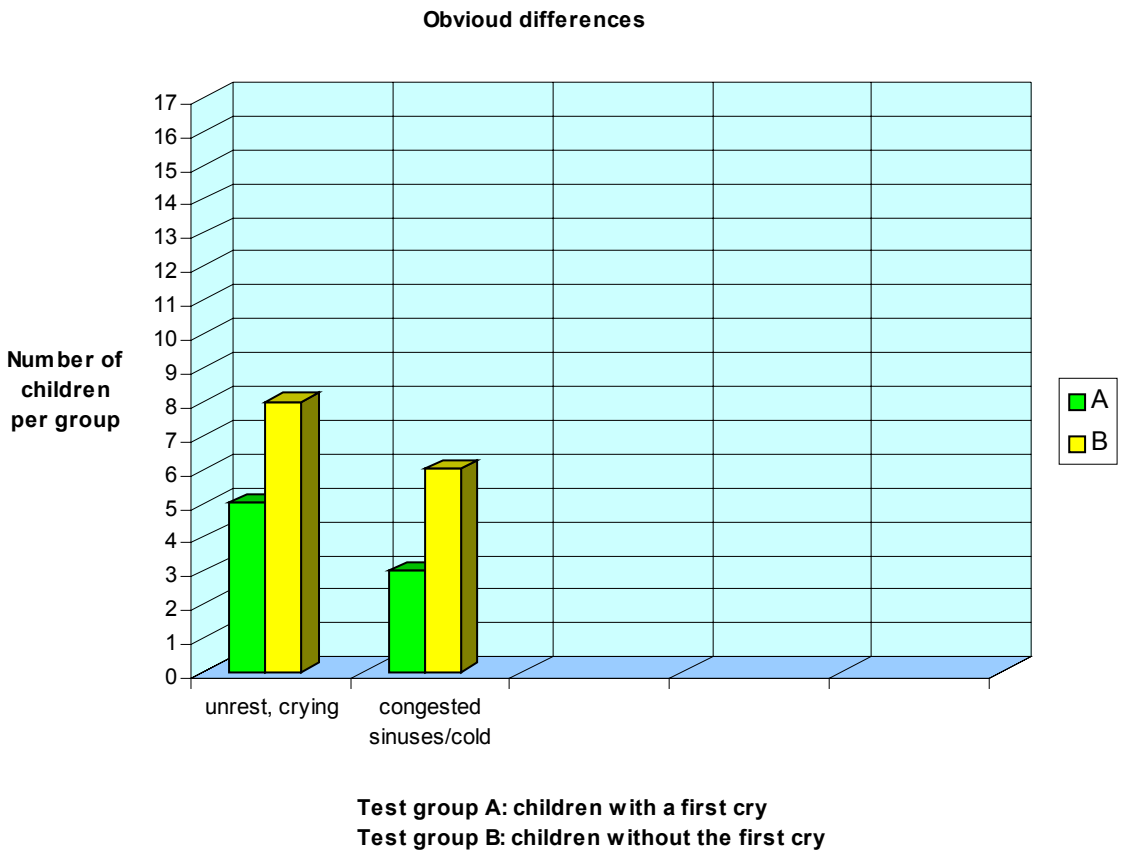
These findings could confirm another one of James Jealous' statements, namely that the energy of our body and the motor for this energy, which "lives" outside our body, can hardly be impressed by such differences.



5.5. Physical symptoms – obvious differences

In this category, obviously more children without a first cry showed unrest. They cried frequently and repeatedly suffered from congested sinuses / colds already in their first year of life. This, of course, also caused their parents considerable psychological stress.

It is also significant for the children and their future tendency toward infections of the throat, nose and ears, as well as possible chronic inflammations of the middle ear and ensuing deafness, which can affect the development of speech.



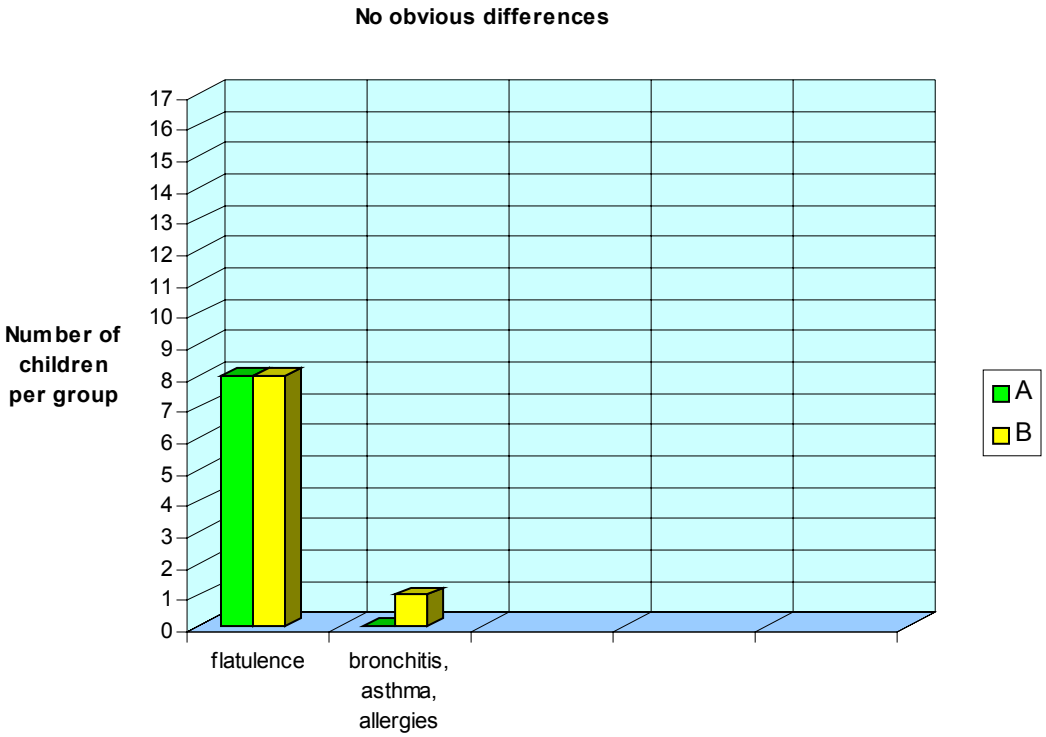
5.6. Physical symptoms – no obvious differences

The analysis yielded a clear result concerning a problem many parents have to cope with: Flatulence during the first three months and even later. There were no differences between the two test groups in this respect. However, it was interesting that many children suffered from the same symptoms. Almost half of the children of both groups suffered considerably from flatulence.

At the beginning, I estimated that there must be considerable differences between the children with and those without a first cry. The reason for this expectation was that greater tension at the anterior dura girdle and increased tension in the region of the anterior cervical and thoracic fascia would also cause increased tension in the peritoneal cavity. However, there is no link between the phenomenon of flatulence and the existence or lack of a first cry.

Nor was I able to observe obvious differences in the symptoms of bronchitis, asthma and allergies. In the test group without a first cry, only one child displayed those symptoms.

In this context, I wondered whether a obvious difference only arises when the children have more contact with allergens, especially food. The children in my survey were all breast-fed by their mothers, thus they were not heavily exposed to allergens. This means that the mother's milk acts as a sort of protective shield against various allergens.



Test group A: children with a first cry
Test group B: children without the first cry

6. Reflexion of method and prospects

6.1. Number of babies tested

The number of babies tested might be regarded as an interesting factor for discussion. The more babies one tests, the more precise and meaningful the scientific survey becomes. Due to the clearly defined parameters for my survey, I was only able to include a limited number of children in the study.

Nevertheless, the topic of this study is interesting for the work of an osteopath and may provide a basis for more comprehensive inquiries on the topic in the future.

6.2. Selection of babies tested

Another interesting factor in this survey was selecting the babies to be tested. In future surveys, the choice of babies tested could, for example, be limited to newborns or divided into groups of males and females.

6.3. Additional parameter – the heart

Only after examining many newborns and infants did I note that very often there are indeed considerable tensions in the fields of the heart and the heart ligaments. From an osteopathic point of view, it would be interesting to include and document the parameter of tension in the heart or heart ligaments in the patient data sheet if such tensions are found during the initial examination. It could be that in this field we would also see important differences between children with a first cry and children without a first cry.

7. Continous results

7.1. The third ventricle and close important anatomical areas

The following part I already explained in the chapter “basics”. But because of the topic’s relevance I would like to mention the proximity of the third ventricle to important anatomical areas (see cf. Taschenatlas der Anatomie, Nervensystem und Sinnesorgane by Kahle, 1986, p.: 164, 180, 182; Neurologisch-topische Diagnostik, by Duus, 1987, p.: 249-250, 260-273;) yet again at this point of my work.

We know from anatomy that the third ventricle is situated in the diencephalon, and that it lies in direct proximity to the epithalamus, thalamus, hypothalamus and subthalamus.
I do not want to describe the entire anatomy of these very important structures, however, I would like to mention a number of areas of importance to the osteopath.

In the epithalamus, it is worth mentioning the epiphysis, which is located at the posterior wall of the third ventricle and above the lamina tecti. The function of the epiphysis is to inhibit / slow down the development of the genitalia until puberty. Afferent as well as efferent paths lead to the epithalamus (in the midbrain). The intake of food is stimulated by the influence of olfactory sensations. This olfactory input triggers the secretion of saliva and gastric juices and ignites the motor cores of the muscles involved in chewing and swallowing.

The thalamus forms the lateral wall of the third ventricle. It also has afferent and efferent connections. It constitutes the subcortical center for all incoming exteroceptive and proprioceptive stimuli from the exterior and interior of the body. The thalamus is also called the "door to one's consciousness".

Among other things, its main function is that of an integration and coordination organ. Sensations like pain, listlessness, well-being, etc. are influenced by the thalamus and further conducted into the cerebral cortex.

The hypothalamus forms the caudal wall and the floor of the third ventricle. It contains the center for all vegetative functions of the body. However, it influences not only the

vegetative nervous system but also the endocrinous-vascular system due to its connection to the hypophysis. The hypothalamus has afferent and efferent connections to all parts of the nervous system (cortex, frontal lobe, thalamus, basal ganglia, brainstem, spinal cord, etc.), i.e., structures of a various and complex nature.

The main purpose of the hypothalamus is to control and regulate all the vegetative functions of the body (balance between sympathic and parasympathic activities). It is responsible for regulating the water and temperature levels of the body, coordinating the inner secretory glands, and controlling the intake of food – to mention but a few of its functions.

For the sake of completeness, I would also like to mention the subthalamus, which is situated beneath the thalamus. If the subthalamus is stimulated with electricity, muscle tension increases and the excitability of reflexes is higher.

I have pointed out the anatomical relationships of those structures because my hypothesis is that if the third ventricle is not fully developed, changes in the neighboring structures will occur. These changes must not necessarily lead to striking neurological abnormalities. However, if more attention is paid to the problem, they can be recognizable to the trained eye or rather the trained hands.

I am also convinced that it is an additional stress factor for a newborn baby if the various areas of its brain do not work in harmony from the beginning. Sometimes they do not have the ability to work together in the very first weeks of life.

I also believe that there could be a reason for problems in sensomotorics, perception and concentration. As a result more and more children already consult our office with these problems.

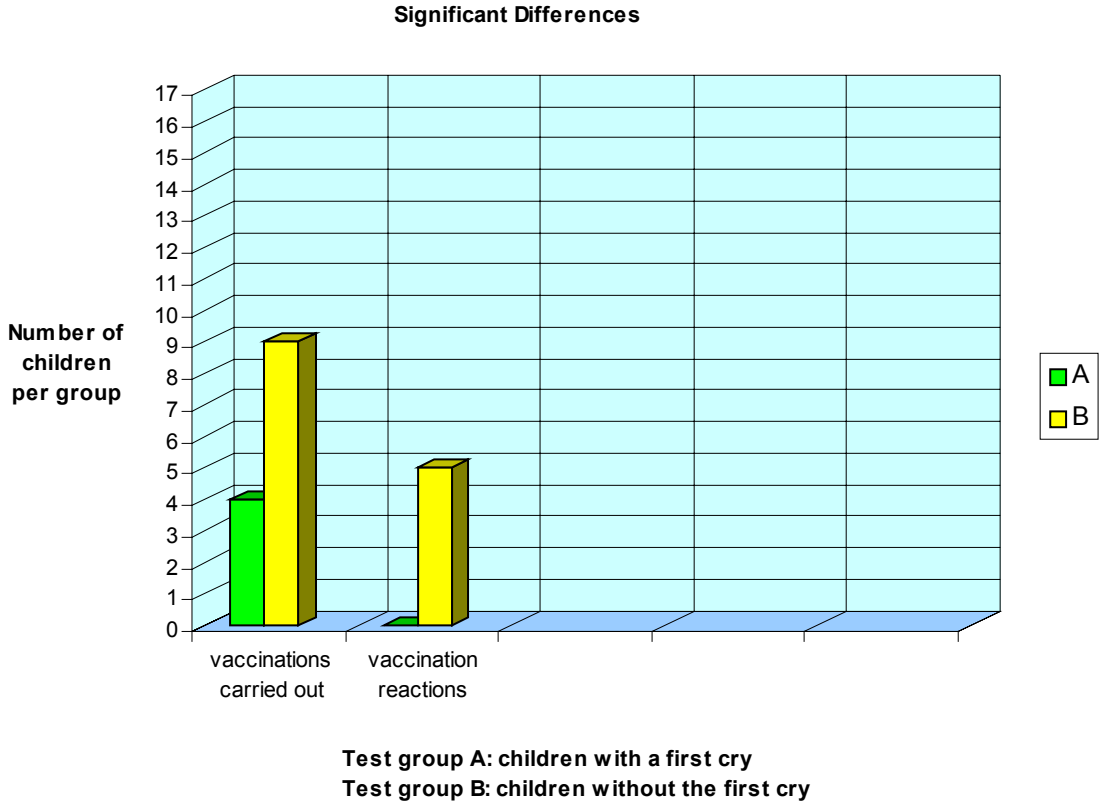
7.2. Vaccinations

I have already mentioned in the *methodology section* that I would like to take a closer look on the children's vaccinations.

This topic definitely is a disputed one for all people concerned: Osteopaths and general practitioners, the parents, the state and the children themselves.

7.2.1. Look at the diagrams

When analyzing the statistics and looking at the diagram, you will see that in Test Group B, i.e., the children without a first cry, many more children were vaccinated than in Test Group A.



In figures, this means that nine children in Group B – thus more than half of the children in this group – were vaccinated, in contrast to Group A, where only four children were vaccinated.

The diagram illustrating vaccinations shows the children's reactions after the vaccination, which is a rather major intervention.

Compared to the control group, more of the children without a first cry showed reactions to vaccination. If we compare the figures, we can see five children with reactions in Group B and no children in Group A.

In this context, a number of important questions arise concerning the third ventricle, reactions because of vaccinations and the number of vaccinations:

7.2.2. Questions resulting from the diagrams

7.2.2.1. Regarding the third ventricle

Did I find the third ventricle not entirely expanded because the child had already been vaccinated and reacted by a contraction of the third ventricle (because of the strong exterior impulse on the child's immune system)?

Thus I took another look at individual test babies and compared their data, which led me to the following conclusion (let me remind you of the figures so that you can comprehend the following statements):
17 children lacked a first cry. The first diagnosis showed that six children of the 17 had a third ventricle which was not entirely expanded. Nine children in the test group were vaccinated.

Looking at these figures conveys the impression that vaccination does not necessarily have an influence on the ventricle system.

7.2.2.2. Closer contemplation

Upon closer investigation, however, I discovered that:
The third ventricle of five of the nine children who had no first cry and who had been vaccinated was not entirely developed. In other words five of the nine vaccinated children showed particularities/problems in their third ventricle.

In Test Group B there were two children who were not vaccinated but showed a third ventricle which was not fully developed.

Another child in Group B had a fully developed third ventricle. This child received its first vaccination only after its second osteopathic treatment and did not show a negative reaction in the third ventricle.

This also shows that vaccination does not necessarily have a direct influence on the third ventricle.

In Group A, i.e., the children who had a first cry, four children were vaccinated. In this group, one child with and one child without vaccination showed particularities of a not fully expanded third ventricle.

These findings do not allow us to establish a direct relation between vaccinations and their influence on the third ventricle.

In order to achieve a meaningful result in this context, one would have to use a much larger test group.

However, the results show that the third ventricle tends to be more reactive to the first cry than to vaccination.

7.2.2.3. Conemplation of vaccination reactions

Were there more vaccination reactions in Group B than in Group A because in the latter the third ventricle was not fully developed? This would mean that the child's immune system was not able to react appropriately and the child's system was not sufficiently adapted.

Upon taking a closer look at Group B, I noticed that all children who showed vaccination reactions did not have a fully developed third ventricle. To my mind, this was a much more meaningful finding with regard to the survey's statistics than the one in the preceding paragraph.

It shows that the probability of vaccination reactions is relatively high if the third ventricle is not clearly expanded. This means that the body and thus the immune system cannot react too well to a strong external stimulus like that of a vaccination.

7.2.2.4. The number of vaccinations in the two test groups

Why did more children in Group B, i.e., the children who lacked a first cry, been vaccinated in comparison to the control group? Was this mere coincidence? When I looked at the ages of the children in the two groups, I noticed that they were relatively well balanced, thus a difference in age could not be the reason. One could only answer this question by restricting the ages of the test groups to an even smaller range and possibly examining and comparing different age groups in another study.

8. Conclusion

The aim of my thesis is to take scientific a look at the baby's first cry right after birth and the effects if it does not occure within the first 20 seconds. To me personally the topic is so important since I strongly believe that many diseases such as weakness of the immune system or recidivious infectsions, parcially disturbed abilities or learning difficulties derive from the lack of the baby's first cry.

My examination consisted of 34 children of both sexes aged two to 12 month. One half performed the first cry within 20 seconds after birth, the other half didn't. For the reason of documentation I used a patient data sheet provided by the Osteopathic Childrens Clinic in London. An additional statistic-sheet was used for the evaluation.

The evaluation proved an obvious and interesting differnece between critical or rather uncritical course of pregnancy and birth. Babies who performed their first cry within 20 seconds came from more difficult pregnancies than those who did not cry out loud. Sometimes even the umbilical cord was twisted around their necks. In comparison the ones without the cry came from rather untroubled pregnancies.

A great differnce was also noticed in term of suctioning: non-crying-babies got suctioned more often than crying-babies.

The most tremendous difference between the two groups were the physical changes of the children's bodies. With non-cryers I examined more often tentions on the sternum, on C0/C1 and on anterioren dura girdle, a not completely expanded diaphragm and third ventricle as well as an unclear midline.

There were also interesting diffenrecens in terms of symtoms. Non-cryers were diagnosed more often with restlessness, weaping and re-accuring congested sinuses.

No obvious differences I found concerning the duration of contaractions and drip. There were also no differences in terms of insymetry of head bones, strains, thorathic spine tentions and flatulence.

Originally unintentional I found interesting information on vaccination while working on this survey. There were more vaccinated children who were non-cryers within their first 20 seconds of birth. Having examined this I supposed that there was an influende on the third ventricle. But further examination proved that wrong; there seems to be no immediate correlation between vaccination and the reaction on the third ventricle. However, a fully expanded third ventricle supports the child's organism to handle the vaccination in an adequate way.

9. Closing Regards

In analyzing my findings, I paid careful attention to interpreting the results objectively. Some of the results I had already expected before conducting the study, while some of the findings were surprising and thus very interesting.

In the future, it would certainly be important to carry out another survey with a larger test group but more limited as regards the age of the children tested in order to come to more meaningful results and to gain more information about the newborn's first cry.

It would also be of interest to carry out a similar study among slightly older children to find out more about the history and the course of the children's various diseases. This would help to conclude whether the lack of a first cry and an only partly expanded third ventricle really cause a higher number of asthmatic diseases and allergies. However, it is of great importance to inform parents and the obstetricians about the topic.

For the osteopath, it is extremely important to pay careful attention to the midline, the expansion of the diaphragm, the anterior dura girdle, C0/C1 and in particular to a fully expanded third ventricle.

10. Bibliography

Carreiro E. Jane: An osteopathic approach to children, 68-70, 122; Churchill Livingstone, 2003;

Comeaux Zachary: Robert Fulford and the Philosopher Physician, 73-82; Eastland Press, 2002;

Duus Peter: Neurologisch – topische Diagnostik, 249-250, 260-273; Thieme Verlag, 1987;

Fulford Robert and Stone Gene: Dr. Fulford´s Touch of Life, 41, 42, 58, 63-69; Pockets Books, 1996;

Goerke Kay: Taschenatlas der Geburtshilfe, 32, 168, 232, 236; Thieme Verlag, 2002;

Hassauer Werner: Die Geburt der Individualität, Menschwerdung und moderne Geburtshilfe, 62-63, 69, 97, 98; Verlag Urachhaus, 1995;

Jealous James: Phase 4, March 2001;

Kahle Werner: Taschenatlas der Anatomie, Band, Nervensystem und Sinnesorgane, 164, 180, 182; Thieme Verlag, 1986;

Klinke Rainer und Silbernagel Stefan: Lehrbuch der Physiologie, 254-255, 506-507; Thieme Verlag, 1994;

Netter Franz: Nervensystem 1, Neuroanatomie und Physiologie, 32, 35; Thieme Verlag, 1987;

Schedlowski Manfred und Tewes Uwe: Psychoneuroimmunologie, 237; Spektrum Akademischer Verlag, 1996;

Upledger John: A brain is born, p. 210-211; North Atlantic Books, 1996;

11. Appendix

11.1. Depictions

Picture 1	p. 9	Klinke Rainer, Silbernagel Stefan; Lehrbuch der Physiologie; 1994;
Picture 2	p. 11	Goerke Kay; Taschenatlas der Geburtshilfe; 2002;
Picture 3	p. 12	Klinke Rainer, Silbernagel Stefan; Lehrbuch der Physiologie; 1994;
Picture 4	p. 14	Goerke Kay; Taschenatlas der Geburtshilfe; 2002;
Picture 5	p. 14	Goerke Kay; Taschenatlas der Geburtshilfe; 2002;
Picture 6	p. 18	the author
Picture 7	p. 19	Netter Frank; Nervensystem 1; 1987;

11.2. Patient data sheet

SURNAME FIRST NAME(S): M / F:

ADDRESS:

TOWN: COUNTY: POSTCODE:

DOB AGE:

PARENTS'/GUARDIANS' FULL NAMES: TEL - H:

SIBLINGS:: -W:

REF: *1. Patient 2. Osteopath 3. Consultant/GP 4. Midwife/Health Visitor 5. Other Organisations 6. Other Practitioners*

7. TV/Radio 8. Newspaper/Magazine DATE:

REASONS FOR CONSULTATION

OTHER PRESENTING SYMPTOMS

HISTORY

PRE-NATAL HISTORY

Prev. Pregnancies:

Obstetric History: (inc foetal mvts)

Medication:

BIRTH

Narrative

Place:

Post-partum maternal health: (inc bonding)

Maternal Age:			
Amniocentesis:		Yes	No
CVS:		Yes	No
Ultrasound No.:			
Birth Weight	:		
Gestation (weeks)	:		
Spontaneous	:	Yes	No
Amniotomy	:	Yes	No
Induced	:	Yes	No
First stage (hrs)	:		
Second Stage (hrs)	:		
Third stage comps.	:	Yes	No
Analgesics - G&A	:	Yes	No
- TENS:		Yes	No
- Pethidine:		Yes	No
- Epidural:		Yes	No
- Other:		Yes	No
Episiotomy	:	Yes	No
Tears	:	Yes	No
Forceps	:	Yes	No
Ventouse	:	Yes	No
Caesarian	:		
Presentation	:		
APGAR (1 min)	:		
APGAR (5 min)	:		

NEONATAL PERIOD

Length of stay in Hospital:

Moulding/Bruising:

Alertness:

Breathing/Crying:

Sleeping:

Feeding:

Special Investigations:

GROWTH AND DEVELOPMENT

MEDICAL HISTORY

Accident:

Illness:

Operation:

Investigations: (inc X-Rays, Scans etc)

CURRENT MEDICATION AND TREATMENT

Diet:

FAMILY HEALTH

EXAMINATION	MORPHOLOGY AND POSTURE (inc. drawing)
Spine	
Trunk:	
Pelvis	
Limbs	
Head	
Viscera	
Vitality Pattern	
Quality:	

NEUROMOTOR STATUS

OTHER

SIGNIFICANT FINDINGS

Innoculations: Yes No

DIAGNOSTIC CATEGORIES	AETIOLOGICAL FACTORS

MANAGEMENT

SPECIAL PRECAUTIONS

CASE SUMMARY (inc prognosis)

Osteopath: Senior Osteopath:

CHANGES	Date	Senior Osteopath

11.3. Measurement Results

Data sheet/statistics sheet:

Notes – First Cry (without Caesarian sections and prematurely born children):

A: Test group with first cry
B: Test group without first cry

	Test Group A	Test Group B
Pregnancy: normal:	12	15
Complications:	5	2
Birth: normal:	8	7
long contractions:	7	8
with vacuum extractor:	3	2
with forceps:	1	0
UC short:	0	3
Around the neck:	5	2
Drip:	5	7
Breech position	0	1
Suctioning:	0	8
Apgar-rating normal:	15	11
conspicuous, but ok after 10 min:	2	3
conspicuous, but not ok after 10 min:	0	2
Bad sucking:	0	2
Bad respiration:	0	1
Bad burping:	3	2
Vomiting:	3	5
Bad swallowing:	0	0
Intensive care unit:	0	0
Cranial asymmetry:	7	8
PRI reduced:	5	7
3rd ventricle not fully expanded:	2	6

	Test Group A	Test Group B
Cerebral fluids conspicuous:	0	3
SSB compression:	4	0
SSB strain:	4	4
Tension in the anterior dura girdle:	1	5
Tensions in C0/C1:	4	8
Intra-osseous dysfunction of the occiput:	0	4
Intra-osseous dysfunction of the sacrum:	6	6
Midline unclear:	1	6
Sternum tentioned:	6	10
Tension in the thoracic spine:	4	5
Diaphragm not expanded or conspicuous:	3	9
Lungs in IR:	0	2
Hip dysplasia:	1	2
Nutrition: Entirely breast fed:	17	17
Bottle-fed:	0	0
Vaccinations:	4	9
Vaccination reactions:	0	5
Unrest/Crying:	5	8
Flatulence:	8	8
Diseases:		
Congested sinuses/cold:	3	6
Bronchitis/Asthma, Allergies	0	1
Motoric particularities:	0	0