

A Neurological Approach to Speech Therapy for the Cerebral Palsied

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This new approach, which has revolutionised speech therapy for the Cerebral Palsied child, is based on Neurophysiology. Unlike lesions of the lower motor neuron which cause paralysis, the brain damage resulting in Cerebral Palsy will lead to abnormalities of muscle tone which can produce inco-ordination of muscles, so that the patient is unable to control his muscle function in the normal way. It is because of the abnormalities in muscle tone, as well as the dominance of primitive reflexes, and the absence of higher postural reflexes that normal posture and therefore, normal movements are impossible for these children. The peripheral nervous system is intact and the power in the muscles necessary for performing movements is there, but the child is unable to direct or grade the impulses in order to obtain smooth and separate movements. It is not possible for the child to contract or relax individual muscle groups, nor to move parts of the body independently. The disorder of motor function is often associated with defects of speech and hearing. The treatment is based on inhibition of abnormal reflexes and normalising of muscle tone. These are the pre-requisites for normal movement patterns. It is this which allows the maintenance of posture against gravity and also for easy, smooth and purposeful movements.

The speech therapist's aim is to give the child the normal sensations of speech, so that she will have to break down and prevent any abnormal reactions associated with the act of articulation. In order to do this the child must be positioned so that the normal speech developmental sequences can be followed. It must be remembered that as the speech musculature obeys the same laws as the skeleton muscles, the child must be treated as a whole. It is because of the abnormal and fluctuating muscle tone and lack of grading of movements that the athetoid has involuntary movements. This is seen in the twitching lips and snake-like movements of the tongue. The muscle tone must be

steady before one can expect the smooth movements required for speech. In the floppy athetoid one might have to increase tone, being careful not to get spasms — this is done by grading of stimuli. In the spastic, the problem is often one of hypertonicity, and here one must reduce muscle tone by inhibiting the action of the agonists, and where there is co-contraction, of the antagonists as well. When speaking of reducing muscle tone we refer to that of the whole body.

Next, any primitive, pathological reflexes, affecting the speech mechanism must be inhibited and at the same time higher reflex activity must be introduced, for example: If the child has the bite reflex, and bites whenever the inside of the mouth is stimulated, desensitise this area and then encourage chewing movements.

Speech must function as an activity, independent from the rest of the body. This means that the child must be able to talk without associated reactions occurring or spasms being initiated. It is true that movement and speech go together, but here the grading is important. Stimuli must be carefully graded so that the child is neither under- nor over-stimulated. When encouraging a child to talk, see that the situation is interesting and if you want a certain word, instead of demanding this, talk to and question the child in order to get him to say the required word.

In order to develop speech we must give the child the normal sensation of speaking as he learns through sensory intake. It is unrealistic to expect a child to be able to produce sounds unless he has experienced the feeling kinaesthetically, so that no amount of visual or auditory aids will be of assistance unless the child is given the opportunity to acquire these normal sensations. Thereafter, one can use these different avenues to re-inforce what has been facilitated.

Let us now examine the pre-requisites for speech. Firstly, one must ascertain that the child's hearing is adequate for speech. A hearing assessment is, therefore, one of our initial tasks, and must be carried out as early as possible. Here one must ascertain that the baby is at a maturation level in keeping with his age, allowing for the usual lee-way in maturing found in all children. When carrying out these hearing tests, be sure that the child cannot only hear, but can localise the sound source. As there is often a high-frequency loss associated with athetosis, these children should be very carefully assessed and the possibility of a hearing aid discussed. The testing of these children, particularly those under the age of five, presents many added difficulties, for often their physical handicap prevents a response. In such cases, one must observe the child and use any reaction he can produce. Example: Some babies respond by blinking, others by stilling; the older child may only be able to protrude his tongue and this response must then be conditioned so that testing can be carried out.

As speech is superimposed on the basic functions, feeding must precede speech, so that a knowledge of the Gesell norms is required. Here again the therapist must remember that these developmental stages are subject to individual variation, and that this variation will depend on the severity of the physical handicaps. At 8-12 weeks when tongue-tip movement should have developed, this will often only occur during a spasm. At 16 weeks, when biting occurs, the Cerebral Palsied child is often not yet able to bite or presents the biting reflex and will bite whenever the inside of the mouth, and especially the molar area, is stimulated, so that chewing is prevented. To inhibit this reflex, hold the jaw open and stimulate the inside of the mouth by rubbing with your finger, or a wooden spatula or spoon if the reflex is very strong. At 28 weeks the baby is chewing and eating semi-solids which it can take from a spoon; it will be found that many Cerebral Palsied children cannot yet chew at this stage, nor can they purse their lips in order to take food from a spoon. At 40 weeks the baby can hold his own bottle and here again we find that many Cerebral Palsied babies have not yet reached this stage as they cannot bring their fingers to their mouth, nor their hands to the mid-position. At this stage the child is able to keep his mouth closed

and dribbling ceases, but this is long delayed in a Cerebral Palsied child. Another stage which is delayed is drinking from a cup, which the 48 week old child does, although still spilling. Here, the difficulty in mouth closure will mean that liquid escapes down the corner of the mouth. At the end of the first year, the normal child has learned that in order to drain his cup, his head must tilt back. Often flexor spasm prevents the Cerebral Palsied child from so doing. Should the child have extensor spasms swallowing will be difficult. So through all the remaining stages, leading to self-feeding of a full diet, we will see a delay in most Cerebral Palsied children. The feeding patterns must be carefully assessed so that, by positioning the head, neck, trunk and limbs we can inhibit the pathological reflexes and prevent spasms, and so progress to a later stage in our developmental sequence.

In the same way as we compare the feeding stage at which the child is, so too must we watch the sucking and see at what stage of development the child is. At 16 weeks the normal child, when presented with food, opens his mouth, waits for the teat and closes its mouth around it. During the sucking movement the posterior part of the tongue is elevated. If solids are introduced at this stage, the baby will make chewing movements with his tongue, as he would for sucking. Poor sucking movements are usually associated with the following:— (a) the tongue cleaving to the roof of the mouth; (b) imperfect approximation of the lips; (c) drawing in of the lower lip; (d) inability to release the teat as the child cannot part his lips; and (e) choking and swallowing air as breathing and swallowing are not synchronised.

As voice is dependent on breathing we must examine the breathing pattern exhibited by the child and note any existing abnormalities. Note any blocking on inspiration or expiration. Often it will be seen that the athetoid will breathe in, then block and with great effort get out one word and then the breath supply is finished. Breathing must be automatic, and once a rhythmic pattern is obtained, speech can be superimposed. Begin with vocalisation and aid this by vibrating on the chest wall, larynx, abdomen and spine. It must be borne in mind that movements of the head and neck influence breathing, so that Reflex Inhibiting Postures (R.I.P's) must

be used and head control facilitated. These Reflex Inhibiting Postures are positions which favour more normal muscle tone and which break up primitive reflex postural patterns and therefore, reduce spasm and spasticity. In the case of the athetoid and the ataxic, R.I.P's give stability and are used preventatively. Our emphasis is on expiration, for once this occurs adequately, inspiration must follow. The voice of the child will supply information as to the breathing. If blocking is noted, the therapist must find where and in what position this occurs. The manner in which one vibrates alters the rhythm of breathing as well as the loudness of the sound, while a change in the position of the head will alter the pitch. Aim at a sustained sound, so that the child will not only get the feeling of breathing out, but will hear his own voice. Once voluntary vocalisation can be obtained, without great effort, babbling can be facilitated. Here the vowels are aimed at first, and as choice is important, it is wise to remember the following: "AH" is an extensor sound and is said with an open mouth. Because of this, it would not be our choice with a child whose pattern was predominantly one of extension as this would re-inforce and not break down the pattern. It is often easier to facilitate the "Ah" sound when the child is in a prone or a sitting position as this will break down the extensor spasm. As "AU" is also an extensor sound the above holds true. The "OO" sound is a flexion one and the prone position can be favoured. The "OU" sound, while a flexion one, is more difficult to produce as it requires pursing of the lips. The "ER", which is a neutral sound, is a good starting point. When vowels can be produced, consonants are facilitated by touching the lips and under the chin. The position of the therapist's finger under the chin will raise or lower the tongue in the required position, e.g. place your finger under the chin for "t, d, l" or "n", so pushing the tongue forward and up. Push further back, so moving the tongue up and back for "k, g" and "ng". Facilitate for "p" and "b" by holding the lips together and then releasing them. Often releasing the lips is very difficult for the child. Production of plosives usually increases spasm and this must be watched. When consonants can also be produced, vowel and consonant combinations are worked on. Remember always, that what has been achieved in one position can and

must be achieved in other positions. The sensory motor pattern must be laid down for each sound, and the child must progress to as many different positions as possible, the idea being that eventually the child will be able to talk and move without setting up spasms in any part of the body.

The criteria for good articulation is a spasm-free trunk and head. With poor head control there can be but little speech. This is seen in a normal child, where, once head control is established, babbling will begin — at about 6 months of age. One cannot have a selective activity without fixation, and as speech is our most selective activity, one cannot expect the intricate speech mechanism to function when the head is all over the place.

Dribbling and swallowing are also dependent on head control. Children dribble because they have not established the skill of obtaining mouth closure, and thus cannot swallow their saliva. One may start working on obtaining mouth closure and facilitating the swallowing reflex, while the child is in supine or side-lying positions. However, when the child progresses to sitting the difficulty in sustaining mouth closure will re-occur where there is poor head-neck and trunk control. If head control can be established in all positions, dribbling will cease. To dissociate breathing and speech from the posture and movement of the rest of the body we work in R.I.P's initially. In these postures, once the initial struggle has died down, muscle tone becomes normalised temporarily. Before attempting speech we must be able to place the child in at least one or two R.I.P's. This is because, once muscle tone becomes normalised, proprioceptive sensations can also become normal, so that the speech organs will not only look normal, but will feel normal to the child. In a younger child this position will often induce babbling, or even single words. In older children, where speech has already set up abnormal reactions, R.I.P's will reduce spasticity and normalise muscle tone so that speech will improve. Here, one must facilitate sustained vocalisation and babbling with one's hands, so that the patient makes no effort. Often these areas which are facilitated must first be desensitised, so that the patient can tolerate the handling. These areas are usually the

neck, chest, gums and under the chin.

Let us now turn to the assessment of the Cerebral Palsied child. This is the most important item in treatment and should consist of a complete physical assessment, carried out in consultation with a physiotherapist. It is from this assessment that abnormalities will be noted and the therapist will be able to plan her programme accordingly. Re-assessment is equally important, for in this way progress can be noted. From the assessment, both abnormal and normal reactions will have been seen and the therapist must decide which are pathological and which primitive, depending on the age of the child. The pathological reactions must be inhibited and then the normal ones encouraged, advancing to higher patterns of co-ordination as the more primitive patterns are replaced.

From the assessment the therapist will also see what the child can perform voluntarily and which movements are involuntary, as well as those which can be performed under emotional stress only; e.g. when examining breathing, see if a child can voluntarily hold his breath; can he bite voluntarily or does he only exhibit the bite reflex. It is important to note whether the abnormal reactions of the child are due to tonic reflex activity, to voluntary compensation, or, in many cases, to both. During the assessment watch the child carefully and observe what he can and cannot do, and the manner in which skills are performed. Note the reactions which certain movements will have on other parts of the body. If the child can speak, listen carefully and assess it generally.

As a detailed assessment does not fall within the scope of this paper, suffice it to say that a full assessment of the following must be carefully made:—

- (a) Sucking.
- (b) Swallowing.
- (c) Chewing.
- (d) Biting.
- (e) Jaw and Tongue Movements.
- (f) Head Control.
- (g) Developmental History, both Social and Motor.
- (h) Breathing.

As observation of all the above, with the possible exception of breathing, will be familiar to the reader, let us turn to the

neurophysiological approach to breathing.

Breathing is the background on which speech is built. The crying of the infant develops tone generally and with this, breathing and voice increase and can be sustained. It is important to note whether any abnormalities are present. To prevent these we use the following positions:—

1. Supine, with flexed legs arms at the sides. Vibrate under the dorsal spine, on the sternum and if necessary on the larynx. Later on vibrate on the lower ribs and abdomen.
2. In side-lying vibrate on the upper side of the ribs, the abdomen and sternum.
3. In prone vibrate on the spine and lower back.
4. Heel-sitting, with the spine extended and arms forward. Vibrate on the spine, back, abdomen and sides.

Remember that vibration is movement, that there is a connection between movement and sound and that movement without spasm encourages sound. When the child moves it vocalises and consequently movement can be used to stimulate sound. It is easier to do this from a sitting position.

When examining the breathing pattern it should be borne in mind that breathing difficulties lead, not only to speech difficulties, but also to difficulties in feeding, as in order to swallow, breathing and swallowing must be synchronised to avoid choking and the swallowing of air with food, which would cause wind and indigestion. The breathing pattern of the athetoid will usually present abnormalities. At best the breathing is shallow and of short duration, so that there is not enough volume of breath to initiate speech. The important considerations as regards all breathing patterns are (1) rate, (2) vital capacity and (3) control. They naturally all depend upon adequate functioning of the muscles of respiration. Once we can improve motor function, breathing should become normalised. In athetoids who have weak flexor muscles in the neck and shoulders, and in those spastics whose pattern is predominantly one of flexion, excessive belly-breathing occurs. When the child is in this flexed position the chest is cramped and squashed together, so that the muscles of respiration cannot function normally. Coupled with this, the fluctuating muscle tone of the athetoid

prevents a rhythmic pattern of breathing. Such a child would, therefore, be treated by breaking up the flexion and introducing extension in the trunk neck and limbs, depending on the existing flexor pattern. The child would be maintained in a controlled R.I.P. so that the tone does not become markedly extensor, but remains as near normal as possible. Total R.I.P's must never be used because of the danger of shunting spasticity. Often a spastic is unable to inhale without a backward movement of the head as well as other signs of extension throughout the body. Here the child can be placed in a sitting position, with the therapist behind, so that she can hold his head and help to superimpose rhythmic breathing by moving the head backwards and forwards so that the neck extends with inspiration and flexes with expiration.

To improve breathing function we must aim at better head control so that the chest is maintained in the desired position. With a child who has a predominantly extensor pattern it is possible that blocking on expiration will occur because the child is in a position of inspiration, and cannot exhale. By placing the child into a position which favours flexion one will facilitate expiration and therefore, normal breathing will follow. It can thus be seen that the chest must be in a position which favours normal breathing and which is neither markedly flexor nor extensor, but where muscle tone will be normalised.

Usually from the speech therapist's point of view, better results are gained in a flexed child if we can improve extensor tone first, so that the flexed position can be overcome. Flexor spasms are associated with difficulties in inspiration. When the sitting balance is poor, in a flexed child who lacks extensor tone, the child will sit in a hunched-up position with the result that the chest cannot expand. Once sitting is improved the upper chest movement will often show a similar improvement. In supine, positioning can facilitate use of the muscles of inhalation because they will be in a position which favours inspiration. Here a rolled-up towel placed along the vertebral column, between the scapuli so that the shoulders are pressed down and touch the plinth, will help increase inspiration. The upper chest and anterior neck muscles, which serve inhalation are now in a favourable position so that upper thoracic activity should increase. Care must

be taken not to elicit a stretch reflex by using a position which is too extreme. To encourage the thoracic expansion of diaphragmatic breathers, it helps to shift the emphasis from the diaphragm to the thorax. Here the palms are placed on the anterior thoracic wall, with the fingers fanned out to control movements and encourage use of the whole chest. One must establish balance between the intercostals and the diaphragm for normal breathing and in order to prevent deformities. In my experience, Cerebral Palsied children who present speech difficulties due to improper breathing, have usually shown predominantly flexor patterns. Adequate breath support for speech requires voluntary control of both inhalation and exhalation, with sufficient air intake for sustained phonation. Furthermore, length of expiration must be adequate for a series of words to be spoken between breaths. The breathing rate of babies varies from twenty to forty per minute and by 2 years of age, should be in the low twenties. Athetoids, due to fluctuations in muscle tone have rates which vary and therefore it is necessary to take several counts and then to average them. Diaphragmatic breathing can be regarded as normal till 2 years of age; after this, there should be a visible lifting of the upper chest when breathing in. When the upper chest is depressed during inspiration, we get reversed breathing, which in a normal infant disappears within the first few months. If this reversed breathing pattern persists, the rib-cage will be reduced in size and it follows that the volume of air inhaled will be similarly reduced. Where there is difficulty with expiration the prone position is most favourably used, as the chest is then in a position of expiration. Watch for any spasm which will disrupt the expulsion of air. It is not sufficient to watch passive breathing patterns, one must see whether activity in other areas will trigger off involuntary activity in the muscles of respiration. To see whether this does in fact occur, let the child move his arms or head while breathing and note the reaction. Once breathing abnormalities are noted the best positions for facilitation must be found. These positions are never used statically. By using rotation as well as positioning, better breathing movements will be obtained.

If there is spasm in the vocal cords, phonation will be interfered with. Vocal cord ad-

duction seems to be associated with extensor patterns and the child may extend the trunk and neck to assist adduction of cords if there is hypotonicity. In the athetoid, where there is fluctuation in the laryngeal muscle-tone, fluctuation in voice will result. One must ascertain that these fluctuations are due to the above, and not to poor breath support. To facilitate vocalisation vibrate on the fixed area, which may be the spine, chest, diaphragm or the larynx. Once there is a rhythmic, co-ordinated breathing pattern, attention should be paid to encouraging sound production, depending on the abnormal patterns which exist, as has been discussed and remembering that, for a child whose pattern is predominantly one of extension, extensor sounds would not be facilitated and similarly with the predominantly flexed child, flexor sounds would not be the first to be facilitated.

From this discussion it will be seen that success in treatment will depend on the link-up between the physiotherapist, occupational therapist and speech therapist. The Cerebral Palsied child presents a problem of control and development in all fields. The speech therapist must take into account both language and articulation. The language ability of the child is the concern of the speech therapist, and here she will guide the physiotherapist as well as the educationalist. When discussing this neuro-physiological approach, it must be remembered that the problem of aphasia is excluded.

Articulation is, of course, the concern of both the physiotherapist and the speech therapist. In dysarthrics, the disturbance of sensation around the oral area leads to lack of speech or, at best, indistinct articulation with great effort. Often a difficulty in voluntarily closing the eyelids is seen in the dysarthrics, and is linked with bulbar palsy.

The isolated small movements of the face must relate to the isolated movements of the lips for speech, while any activity of the muscles of the face will be related to the muscles of the whole body. Any spasm can change the position of the tongue or the jaw; this is seen in the sublaxated jaw of the athetoid, or the retracted mandible of the spastic. Spasm will naturally also involve the diaphragm and muscles of respiration, as well as the larynx. Change in muscle tone

affects movement and thus the articulation and voice of the patient. This is demonstrated in the athetoid, whose fluctuating muscle tone has such an effect on his speech, as well as the loudness and speed at which he can speak. For this reason it is better, at the beginning, to use single sounds. Grading of stimuli, in this case the increase of speed of the speech required, will make speaking more difficult. Speech is a complicated pattern of co-ordination between the body musculature and the fine co-ordination of the tongue. That is why we find good speech in children with head and neck control, and where the upper part of the body is least affected. As the muscles which control head and neck and shoulder girdle control the arms, it will be found that a child with no speech will often be unable to use his hands adequately.

From this discussion of the difficulties relating to speech, breathing, the basic functions and hearing, will emerge the fact that the speech therapist now treats the child as a whole. This means that an even closer relationship must exist between the occupational therapist, physiotherapist and speech therapist because our work depends on the stage the child has reached in its physical developmental sequence. Because the therapists have problems which affect them mutually, much can be gained from this close co-operation. It can also be seen that while the aims in speech therapy may not have changed over the past few years, this neuro-physiological approach to Cerebral Palsy, as advocated by the Bobaths, has radically altered the attitude to the speech problems which arise.

Our ultimate goal is to develop speech as a means of communication, so that our aim will be the achievement of intelligible speech within the limits of each child's potential. We are realising more and more clearly that there are some Cerebral Palsied children, who, due to a bulbar involvement, will never speak. Here we concentrate on increasing understanding of the spoken and written word, so that the child will be able to gain as much pleasure as possible through the use of these avenues.

The importance of early diagnosis and treatment cannot be over emphasised and it is this which must be brought to the attention of medical practitioners throughout the

country. Once incorrect patterns have been established it is extremely difficult to break them down. It is for us to see that this is accomplished if the Cerebral Palsied child is to derive the maximum benefits which treatment can offer.

SUMMARY

The brain damage resulting in Cerebral Palsy leads to abnormalities in muscle tone. Because of this abnormality and the dominance of abnormal reflexes, as well as the absence of higher postural reflexes, normal movements are impossible. The child cannot contract or relax individual muscle groups, nor can he move parts of the body independently. The approach discussed is a neurophysiological one, as advocated by Dr. and Mrs. Bobath, and around which other techniques can be adapted.

The Aims of Treatment are:—

- (1) To normalise muscle tone.
- (2) To inhibit the abnormal and primitive patterns in order to achieve the more normal sensations of speech, on a background of more normal muscle tone.
- (3) To establish head control as the fine and selective movements of the tongue, lips and larynx cannot occur unless there is fixation.
- (4) To correct any abnormalities in breathing as breathing is a prerequisite for speech. A rhythmic, co-ordinated breathing pattern must therefore be established.
- (5) To inhibit the bite reflex by holding the jaw open, and stimulating the inside of the mouth.
- (6) To mobilise the jaw of the spastic. In the athetoid the grading of jaw positions is important as they cannot achieve mid-positions.
- (7) To stimulate the teeth for chewing.
- (8) To inhibit the sucking reflex.
- (9) When the above has been achieved, facilitate speech sounds in the following order:—
 - (a) vowels,
 - (b) consonants and
 - (c) combinations of vowels and consonants, which will facilitate babbling.
- (10) Now guide and direct the tongue from under the chin, e.g. push the tongue forward and up to facilitate t,d,l, or n. Push further back, directing the tongue up and back for k,g,ng.

- (11) Watch for and correct any compensating movements the child might have.
- (12) Study the feeding patterns and compare the stage at which the child is, with the feeding "norms".

A careful assessment of the patient must be made, in consultation with a physiotherapist. From this assessment abnormalities will be noted, as well as the stage of development the child has reached. The therapist will also notice the pathological reactions which must be inhibited, as well as the normal ones which will be encouraged.

Early assessment is important because the earlier treatment is introduced, the more favourable will be the prognosis. Once incorrect patterns have been established they are difficult to break down.

The child must be treated as a whole and therefore close co-operation must exist between the occupational therapist, physiotherapist and speech therapist.

OPSOMMING

Die breinbesering wat Serebrale Verlamming veroorsaak, lei tot abnormaliteite in spiertonus. As gevolg van hierdie abnormaliteit en die oorheersing van abnormale reflekse, asook die afwesigheid van hoër houdingsreflekse, is normale bewegings onmoontlik. Die kind kan nie afsonderlike spiergroepe saamtrek of verslap nie; hy kan nie liggaamsdele onafhanklik van mekaar beweeg nie. Die benadering hier bespreek, is neurofisiologies van aard, soos voorgestaan deur Dr. en Mev. Bobath, en ander tegnieke kan hierby aangepas word.

Die Doele van Behandeling is:—

- (1) Om spiertonus terug te bring na die normale.
- (2) Om die abnormale en primitiewe patrone te verhinder, en sodoende die meer normale reaksies van spraak te bereik, teen 'n agtergrond van meer normale spiertonus.
- (3) Om beheer oor die kop te verkry en dit stil te hou, want die fynere en selektiewe bewegings van die tong, lippe en strottehoof kan nie andersinds teweeggebring word nie.
- (4) Om enige asemhalingsabnormaliteite reg te stel, omdat asemhaling 'n voorvereiste is vir spraak. 'n Ritmiese, gekoördineerde asemhalingspatroon moet dus verkry word.

- (5) Om die bytrefleks te verhinder deur die kakebeen oop te hou en die binnekant van die mond te prikkel.
- (6) Om die kakebeen van 'n spastiese pasiënt te mobiliseer. By die atetotiese pasiënt is die gradering van kakebeenposisies belangrik, aangesien geen tussenposisies verkry kan word nie.
- (7) Stimuleer die tande vir koubewegings.
- (8) Verhinder die suigrefleks.
- (9) Nadat die bogenoemde bereik is, kan met die aanmoediging van spraakklanke in die volgende volgorde begin word:—
 - (a) Klinkers
 - (b) Medeklinkers
 - (c) Kombinasies van (a) en (b) wat brabbeltaal sal aanhelp.
- (10) Lei en beweeg die tong nou van onder die ken af bv. stoot die tong vorentoe en op vir t, d, l, of n. Stoot verder terug en beweeg die tong op en terug vir k, g, ng.
- (11) Let op na, en verbeter enige kompensasielbewegings wat die pasiënt mag openbaar.
- (12) Bestudeer die voedingspatrone en vergelyk die stadium waarop die pasiënt is, met die voedings-,norme'.

'n Noukeurige opsomming moet van die pasiënt gemaak word in samewerking met 'n fisioterapeut. Hiervolgens kan abnormaliteite onderskei word, asook die stadium van ontwikkeling waarin die pasiënt hom bevind. Die terapeut moet ook die patologiese reaksies wat verhinder moet word, merk, asook die normales wat aangemoedig sal word.

Vroegtydige diagnose is belangrik, want hoe vroeër met behandeling begin kan word, hoe beter die prognose. As verkeerde patrone eers gestabiliseer is, is dit moeilik om hulle af te breek.

Die pasiënt moet ook as 'n geheel behandel word en dus is noue samewerking tussen die beroepsterapeut, fisioterapeut en spraakterapeut noodsaaklik.

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