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Tutorial

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Theoretical Approaches to Behavior Change in Myofunctional Therapy

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The effectiveness of myofunctional therapy depends not only on the quality of the individual exercises but also considerably on the patient's compliance. In this paper, factors are described which may decisively influence patients motivation to cooperate during treatment. Based on experience in dealing with patients, clinical studies and psychological knowledge, theoretical approaches to patient motivation are discussed, namely aspects of verbal communication, control, reward, behavior agreement as well as verbal self-control and self-reward.

Several years ago a very critical statement about the value of myofunctional therapy was jointly published by four Swiss professors of orthodontics (Stöckli, Ingerval, Joho and Wieslander, 1987). We felt obliged to publish a counter-statement entitled *15 statements concerning the actual status of myofunctional therapy* (Sergl, 1988). The essence of this statement was *we need myofunctional therapy.* Two cases are shown *(Figures 1 a, 1b, 2a and 2b)* to illustrate situations in which there is no doubt that orthodontic treatment would not be successful without the help of myofunctional therapy.

In the course of orthodontic treatment, we change, usually by mechanical means, morphology of bone and position of teeth. One cannot assume that these will be accompanied by an automatic change of the surrounding soft tissues in their function. Fortunately, this occurs in many cases. However, it does not always happen, especially when a marked malfunction and habits were the cause of the anomaly, and

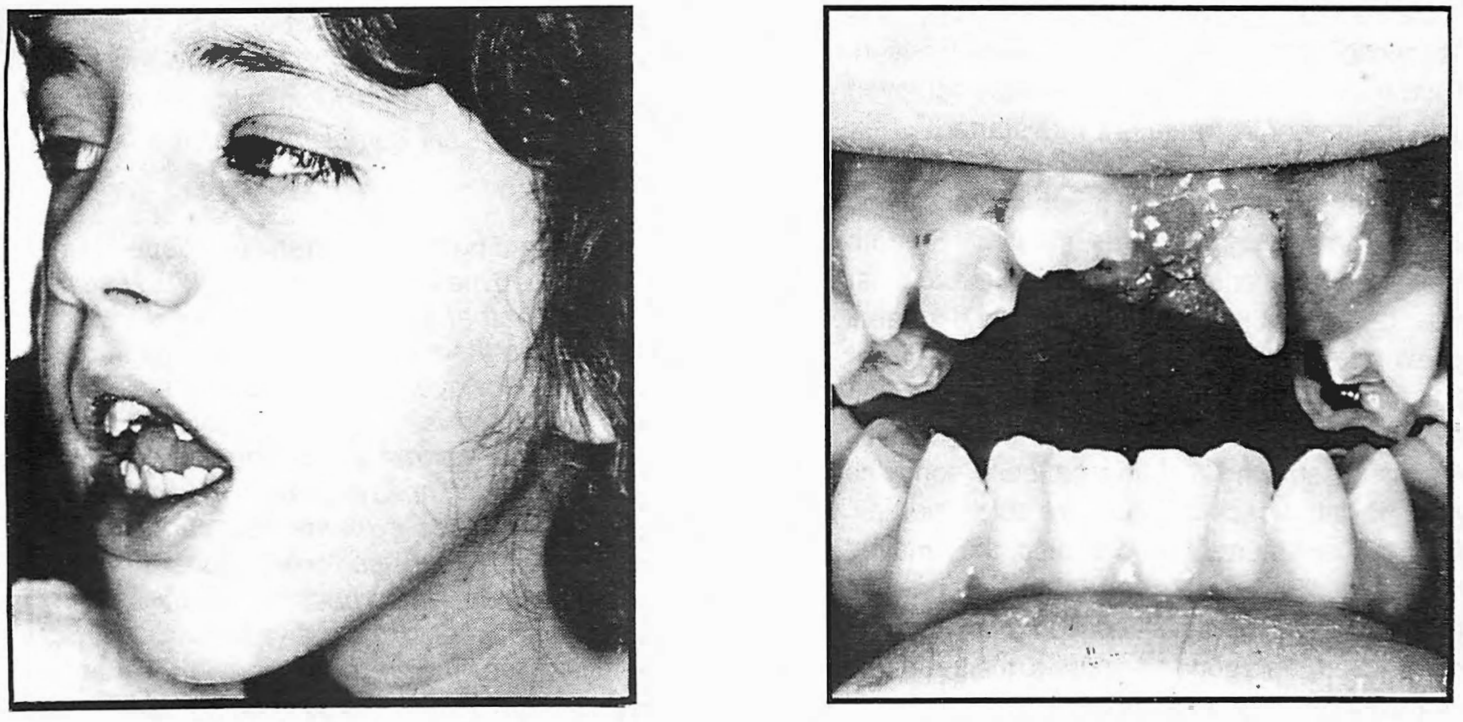

Fig. 1a and 1b: Severe open bite, open mouth, incompetent lips in a 10 year old girl suffering from myotonic dystophy.

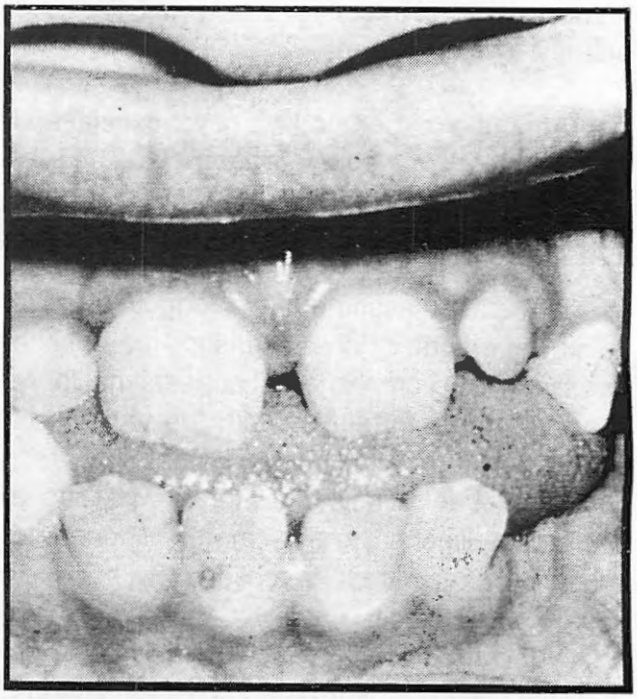

Fig. 2a and 2b: Open bite, bimaxillary protrusion, class III tendency in a 10 year old girl with a tongue thrust habit.

when these hindering malfunctions have to be counteracted during treatment. When muscle function does not adapt, a relapse will usually follow. This means that if existing malfunctions could be corrected using suitable exercises, the success rate of orthodontic treatment would substantially increase. Irrespective of our principally positive view, we have to admit that the overall efficiency of myofunctional therapy in solving the problem of persistent malfunction is still rather low.

There are, at least in Germany, too few therapists who have mastered the methods of myofunctional therapy. Consequently, it is sometimes extremely difficult to find a competent therapist for a patient for whom myofunctional therapy is indicated. Furthermore, not every referred patient is accepted for treatment. Some patients are considered unsuitable, or insufficiently motivated. Finally, only a portion of myofunctional treatments which are started are carried out to the end and completed successfully. Despite impressive success in single cases, the contribution of myofunctional therapy toward the solution of problems in orthodontics still seems to be too small. Therefore, we are all very interested in improving the effectiveness of myofunctional therapy.

One objective would be to improve the exercises themselves. But even the best exercise will not help if the patient does not carry it out due to insufficient cooperation. Similar problems exist in orthodontic treatment regarding patients compliance with the instructions to wear appliances such as headgear, intermaxillary elastics, functional and removable appliances. We would like, therefore, to speak of our experience, findings and reflections concerning patient compliance.

INITIAL MOTIVATION

Both in orthodontic and myofunctional therapy, we impose certain responsibilities on the patient who may perceive them as annoying. First there is a difference between a child and an adult. An adult usually understands the therapist's explanations very well, is reasonable, and decides freely to accept the treatment. Only a sufficiently motivated person will make such a decision. Children, in contrast, do not make such decisions.

They do not volunteer for treatment; they are brought by their parents.

A number of personality, psychosocial and time factors also affect motivation.

Personality factors

It has been assumed for a long time that a patient's personality characteristics may play a decisive role in compliance. It appears that there is not a strong correlation with the variable of intelligence, although Dausch-Neumann (1967) described a tendency of children with above average intelligence, to show more willingness to cooperate in contrast to children with below average intelligence. This correlation is probably misleading as this variable presumably depends on the social milieu surrounding these children. Accordingly to El-Mangoury (1981), patients who believe themselves to be capable of shaping their own lives develop higher compliance than those who consider themselves victims of existing circumstances (locus of control theory).

In our own study (Sergl, 1991), patients whose compliance was judged by their clinicians as good were compared with those showing remarkably poor cooperation. Tests suitable for children and adolescents were chosen from existing psychological diagnostic methods to evaluate willingness to cooperate, sense of duty, conscientiousness and stamina. The study demonstrated a number of statistically significant differences. For instance, according to psychological measurements, a particular type of uncooperative patient was distinguished from cooperative patients. This type can be given the following description: the sex bias leans towards male; irrespective of gender this patient exhibits rather masculine attitudinal preference expressed in active, aggressive and realistic experience and self-image, rather than sensitive, esthetic and idealistic ones. This type would, for instance, prefer reading westerns to stories dealing with animals, would watch boxing matches on television rather than figure skating, would choose to become a military commander rather than a teacher. The uncooperative children have an aggressive desire to enforce their own ego, always want to be the first, are not willing to give in, do not accept contradiction, create confrontation, are critical and disrespecting of others, show malicious joy and destructive frenzy. Because of their strong impulsiveness they are less thoughtful, have no scruples, tend to exaggerate, are excessive in their demands, would more easily break social rules and are neglectful rather than conscientious. These children usually try to avoid effort.

Psychosocial factors

When we tried, in the same study, to investigate the potential influence of the style in which parents educate their children, no statistically significant relationship could be found. There is interesting information regarding the influence of parental socioeconomic status on children's motivation. Erpenstein's work (1965), has shown that motivation of children from working class families and those of self-employed individuals is less satisfactory than the motivation of children of public employees and civil servants. Kirchner (1957), found a relationship between treatment failure and mothers working full time, or the child living in an institution.

Time factors

It has been long assumed that patient compliance may be affected by age and stage of personal development as well as by duration of orthodontic treatment, which in some cases may be particularly prolonged. As these factors might be superimposed, we recently carried out an investigation aiming to differentiate between them. In this investigation (Sergl, Klages, Zentner and Stalter, 1994), cooperation of 148 orthodontic patients was assessed by their clinicians using various assessment methods. Patients were assigned into four different age groups, and a distinction was made between patients who had been under treatment for less than 2 years and those treated for more than 2 years at the time the study was carried out. The results *(Figs. 3 and 4)* show that poor cooperation was associated with

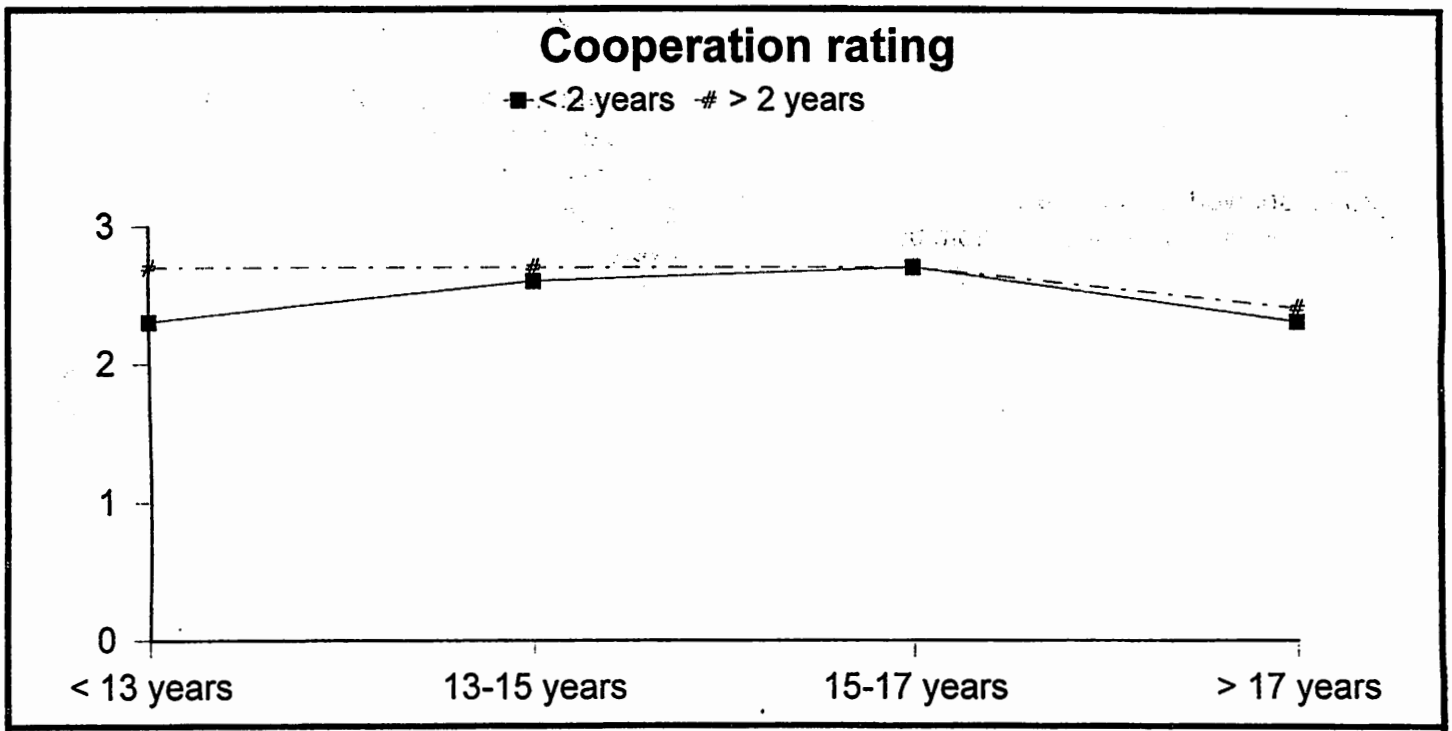

Figure 3: Cooperation of orthodontic patients wearing removable, functional appliances and/or headgear as assessed by their therapists. Patients in 4 different age groups were placed into 2 groups according to the duration of treatment carried out up to the time of the assessment (below 2 years and above 2 years) their cooperation was assessed by using a 6 point scale (rating of 1 being the best). Y-axis shows the average cooperation rating given to patients of different age groups (x-axis).

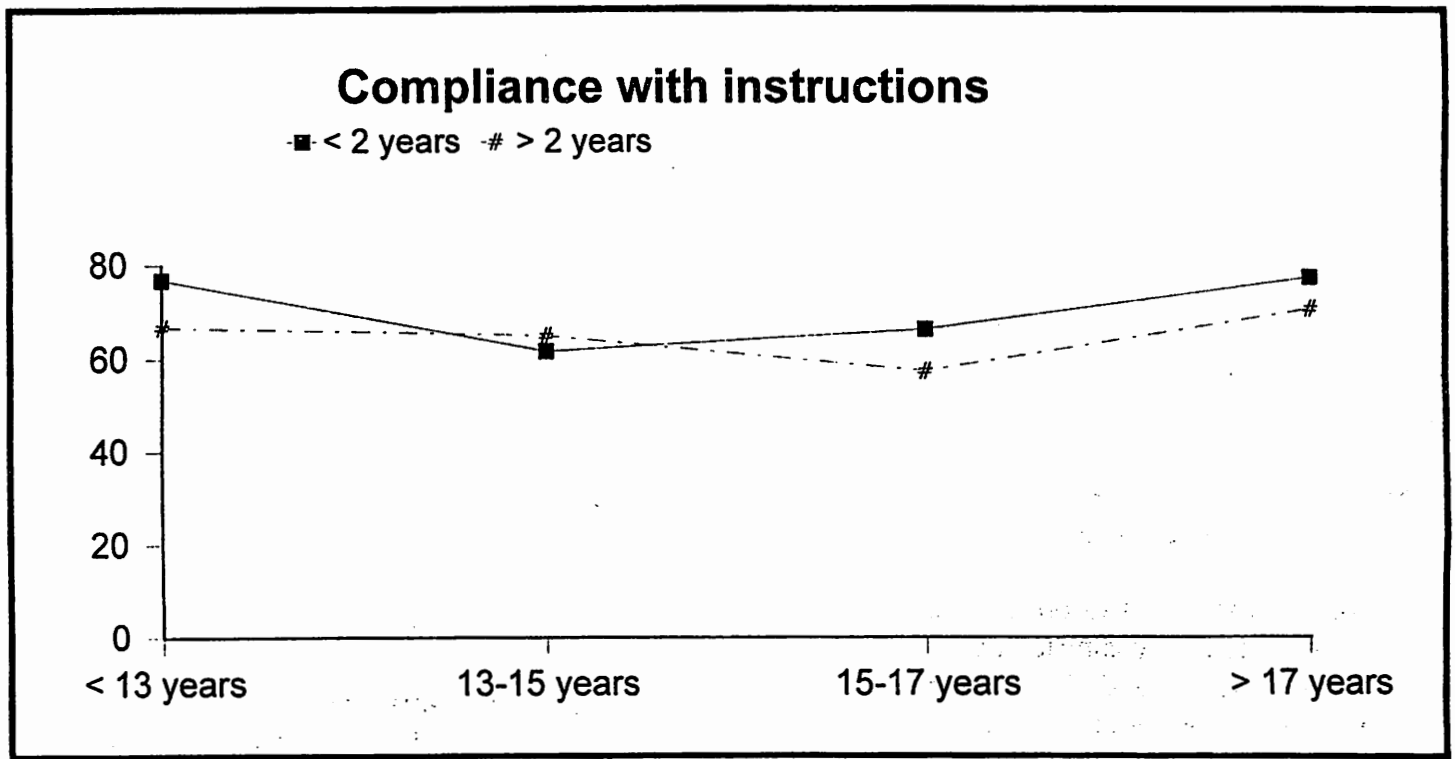

Figure 4: Compliance with instructions to wear removable, functional appliance and/or headgear expressed as percentage (y-axis). The compliance was assessed in patients in 4 different age groups (x-axis) placed into 2 groups according to the duration of treatment up to the time of the investigation (below 2 years and above 2 years).

prolonged treatment duration. Regarding age, it appears that patients from the youngest and the oldest group showed a relatively adequate compliance in contrast to the subjects from both intermediate groups who were passing through the stage of social puberty.

PREDICTION OF COOPERATION

It is difficult to predict the quality of compliance at the beginning of treatment. Most therapists rely on the general impression left by children and their parents. At our department such an impression is usually made during a conversation about how everyday duties are carried out by the child such as doing homework, keeping things tidy, regular oral hygiene, etc. Information gathered from such a discussion may be viewed as an indicator for future compliance.

EVALUATION OF CURRENT COMPLIANCE

To judge actual compliance is a difficult task as it depends on information provided by the patient and family, which, unfortunately, may not correspond with reality. The progress of treatment can be used as an indicator. However, insufficient progress may not necessarily originate from poor compliance as many other concealed, difficult to recognize factors can create complications during treatment. Having the patient write a protocol of appliance wear may help as a control mechanism for an honest and motivated patient, and presents an opportunity to judge compliance.

MOTIVATING THE PATIENT TO COOPERATE

The new duties imposed on our patients such as home practice of myofunctional exercises or wearing an appliance during orthodontic treatment may be perceived as annoying. Motivating the patient to cooperate is, therefore, an important aspect of our work. Psychological research has provided us with some helpful information in this respect.

VERBAL COMMUNICATION

Verbal communication is effective when persuasive and convincing conversations are used to increase patient cooperation. Sufficient explanation and clear instructions should precede every treatment. In order to awaken a patient's interest in treatment, the necessity, purpose and mode of action of each exercise must be clearly explained. This interest can subsequently be supported by keeping the patient informed about and involved in treatment progress. When planning the communication, the therapist should always take into account the patient's age, maturity, intellectual and social conditions.

Resistance against behavioral change

Previous studies have shown that gentle pressure aimed at changing behavioral patterns and exercised during persuasive communication may successfully lead to changing attitudes. Increasingly sustained influence, however, will decrease the effect and may finally cause the opposite. This is the so-called *boomerang effect.* Janis and Feshback (1953), showed in their experimental investigation that frightening persuasion is less suitable to effect a positive change in attitude towards oral hygiene than appeals inducing some or little fear. This phenomenon can be explained as the human need to maintain a range of personal freedom. It can be concluded that moderate pressure only should be applied by the therapist on the patient to effect changes in attitudes. Adolescents are particularly sensitive to attempts to influence their behavior. Possible consequences of failure to comply with the instructions should not be dramatized unreasonably. Moral pressure on the patient will also lead to strong resistance.

Own responsibility

An experimental investigation (Cooper, 1979), has shown that the awareness of acting under one's own consent is the most decisive variable amongst factors influencing changes of attitudes. An individual will more easily accept

something new after having made his or her own decision and having taken on the responsibility for change. This applies especially to the situation when the individual is allowed to choose from various alternatives albeit sham ones. The therapist's task is, therefore, to find and use opportunities which allow the patient to participate in decision making.

Preparing the patient for difficulties

Clinicians often tend to trivialize problems and complications to avoid distressing the patient. Controlled clinical studies (Brehm, 1980), show, however, that patients are very distressed when confronted with unexpected difficulties without prior preparation. In such cases, they tend to ascribe the responsibility to the clinician. Distrust and abandonment of treatment may follow. According to the theory of self-responsibility, the therapist should present the treatment as a difficult but manageable task which is controlled primarily by the patient.

Communication pattern

There are various effective communication techniques suitable for directing patients' attention and increasing their willingness for discussion. These include questions and listener signals (Klages, Sergl and Burucker, 1992). Such techniques can be learned and practiced in specially designed courses. The non-verbal behavior of the therapist and the style of communication should correspond with the topic of the conversation and the intended effect.

Mode of personal interaction

The interaction of the therapist with the patient should be shaped by trust, respect and careful attention. Any blaming, insulting, threatening or even corporal punishment are absolutely disallowed. Even in difficult cases of non-compliance these methods must be avoided. Educational psychology has shown that a partnership-like conduct is far more effective.

CONTROLLING

Clinical experience shows that patients' cooperation decreases even when it was favorable initially if adequate supervision is lacking. A child's knowledge of the therapist's and parents' attention appears to improve motivation. Necessary questioning of the patient can be carried out sporadically or, to be more effective, regularly in systematic manner. Supervising, reminding and warning could, however, easily become too much of a good thing. Repetitive neglect of instructions causes guilty feelings in a child. When the latter are continuously accompanied by parents and clinician reproach, the treatment may become a burden. Following the suppression of unpleasant thoughts, the duties will be suppressed which may finally lead to abandonment of the treatment. The external supervision should be complemented by internal control. We know from psychotherapy, that patients who learn to observe and note their own aberrant behavior begin at an early stage to control it (Fliegel, Groeger, Künzel, Schulte and Sorgatz, 1981).

REMINDING

A forgetful patient can be given something to serve as a reminder which can be placed so that it is not overlooked. Suitable reminders can be discussed with the patient, taking into account daily routine and home surroundings.

REWARD

Reward is used in psychology as an important tool to modify behavior. In the process of the so-called *reinforcement*, material reward such as presents, social reward such as praise and attention, or symbolic reward (token) can be used. To be effective, the reward must be individualized to each patient.

BEHAVIOR AGREEMENT

In a contract between the therapist and the patient, realistic behavioral goals should be

defined and their achievement rewarded gradually. Finally an arrangement should be made regarding supervision and self-control, then formalized as a contract between the therapist, the patient and the parents. Investigations by White (1974), have confirmed that such arrangements (for instance, using a token system) can be helpful.

VERBAL SELF-CONTROL AND SELF-REWARD

Merchenbaum has described hyperactive children who, by using specific exercises of *internal language* by means of self-instructions and self-reinforcement, learn to control impulsive behavior. Such exercises may be very useful for improving compliance in orthodontic and myofunctional therapy.

The suggestions made here are starting points which seem fundamentally suitable to increase patients' motivation. They should be used, then reevaluated in further studies.

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