

F.O.T.T. CONSENSUS 2023 (Nusser-Müller-Busch R, Jakobsen D et al. 2023)

PREAMBLE

In a three-stage Delphi process, members of the Special Interest Group (SIG) F.O.T.T. International updated the F.O.T.T. consensus of 2007 (Nusser-Müller-Busch 2008, 2015).

In 2011/12, a task force (Jädicke, Jakobsen and Nusser-Müller-Busch) drew up proposals for revising and restructuring the consensus. Due to more urgent projects, such as e-learning (<https://www.formatt.org/de/angebote/e-learning>), work was not resumed until 2022.

Study design

The three-stage Delphi process (Raine 2006) was conducted in the period from December 2022 to February 2023. Inclusion criteria for participation were working with the concept and membership in the SIG. Exclusion criterion was < 15 participants.

The 24 participants (20 female, 4 male) were aged between 29-66 years (average age: 50 y) and had between 5-40 years of professional experience (average 27 years). They evaluated the proposed statements anonymously online (limesurvey.org) using a 5-point Likert scale (Likert R 1932). The approval level for accepting a statement was set at 80% (Raine 2006). In the 1st round 23 questionnaires were submitted, in the 2nd round 22 and in the 3rd round 21 questionnaires.

In the question and answer sessions, participants were able to formulate comments and suggestions for the inclusion of new statements or changes to existing statements. These were integrated into the next round by the task force. In the first round, a total of 80 content-related statements were voted on. In the three rounds, statements were rejected or summarized. In the third round, 59 content statements were approved.

These recommendations are intended as guidelines for the application of F.O.T.T. for doctors, nurses, therapists and relatives who work with patients of all ages with early childhood, acquired and/or progressive diseases. The consensus can also be used as a reference for scientific work, e.g. for effect studies.

Current evidence: To date, two studies of EbM evidence class level Ib (randomized control trials RCT, Kjaersgaard et al. 2014, Mortensen et al. 2016) and several studies of evidence classes III to V are available for F.O.T.T. (<https://www.fott.eu/de/konzept/literatur>).

The structural model of the Bobath concept by Eckhardt and Viebrock (2011) and the action-theoretical conceptual system of therapeutic work were used for this update.

Theoretical conceptual system according to Ritter and Welling (2007)

- **CONCEPT** Understanding the theoretical framework
- **Principles:** Guiding function for practice, overarching courses of action
- **METHODS:** Framework for action/learning/work processes. How do people learn?
- **TECHNIQUES:** What to do and how to do it, mastering specific skills/abilities

F.O.T.T. CONSENSUS 2023

CONCEPT Understanding the theoretical framework

Facial-Oral Tract Therapy (F.O.T.T.) is a 24-hour approach for the examination and treatment of centrally or peripherally impaired facial-oral functions and activities in the following four areas: swallowing/food intake (eating and drinking) - oral hygiene - non-verbal communication/facial expression (including gestures) - breathing, voice, speech/articulation.

F.O.T.T. practitioners (from occupational therapy, physiotherapy, speech therapy and nursing) work with patients of all ages, with a range of impairment (from severe to mild).

Examination and treatment can take place in an interdisciplinary or interprofessional team at every stage (acute/intensive, sub-acute, chronic/condition-preserving, palliative) including with outpatients.

People close to the patient are encouraged to be part of the therapy process.

Perspective: In the therapeutic process, all participants are seen as bio-psycho-social individuals. F.O.T.T. practitioners treat people with respect, empathy and dignity. They share their knowledge and experience.

Evidence-based practice:

F.O.T.T. examines and integrates *external evidence* of current research findings in medicine and related fields, especially neuroscience, rehabilitation -, movement - and psychomotor sciences as well as learning theories (how people learn).

- F.O.T.T. takes into account the patient's preference, the rights of those affected and social developments (such as informed consent/their social environment, living wills, pandemic, etc.).

- The internal evidence comprises knowledge, skills and competencies from the F.O.T.T. approach as well as our own research work. The clinical expertise is based on many years of professional collaboration between F.O.T.T. practitioners, including in the Special Interest Group F.O.T.T. International and at national and international conferences.

Theoretical assumptions, empirical knowledge and model

In F.O.T.T., the facial-oral processes are seen as sequences (with breathing, swallowing and their coordination adapted to each situation) that alternate with each other - and are coordinated with other functions - day and night, 24/7. The whole body is involved.

Coombes (1987, 1996) described the pre-oral phase as an independent phase of the swallowing sequence, which is of particular importance in examination and treatment of the facial-oral tract (Overview 1).

Overview 1

Theoretical assumptions

In F.O.T.T., the facial-oral processes are seen as sequences (with breathing, swallowing and their coordination adapted to each situation) that alternate with each other - and are coordinated with other functions - day and night, 24/7. The whole body is involved.

The swallowing process is embedded in a swallowing sequence which includes breathing-swallowing coordination that takes place before, during and after actual swallowing.

- The *before*: Coombes described the pre-oral phase as an independent phase of the swallowing sequence, which is followed by the oral, pharyngeal and oesophageal phases.
- In the pre-oral phase, the organism is put into a state of readiness by the stimuli and information entering the nervous system and their central processing generators before the intake of food or liquid. This readiness as well as the feedback and feedforward mechanisms activated in the process enable safe and functional sequences for eating and drinking. This includes the functional coordination of breathing and swallowing.
- During the pharyngeal phase, there is a centrally controlled physiological pause in breathing.
- The *after*: In addition to bolus transportation and airway protection, the assessment of the pharyngeal phase includes breathing-swallowing coordination. Inhalation after swallowing can lead to penetration or even aspiration and thus to uncertainty in the pharyngeal phase.

Brain damage can affect all aspects of facial-oral function such as breathing, swallowing saliva, food intake, speech, facial movements and oral cleaning movements and their coordination.

The F.O.T.T. approach is based on the physiological development of movement (normal movement), and how these processes can be distorted or altered by various factors, e.g. through disorders of postural control, perception, cognition, sensation, mobility of neural structures or fascia.

F.O.T.T. aims to optimize function and activities at all levels of the ICF (International Classification of Functioning, Disability and Health). The overarching goal is a life geared towards participation that is as independent as possible.

After the clinical examination of the facial-oral tract and, if necessary, further instrumental examinations, e.g. Fiberoptic Endoscopic Evaluation of Swallowing FEES, the results, but also the potential of those affected, their resources and contextual factors are analyzed using clinical reasoning. The goals, e.g. SMART goals (specific, measurable, achievable, relevant and time-bound) should be agreed with the affected person if possible and their carer(s)/family. The goals should address both the body structure/function level and the activity level. Examples of objectives can be found in Overview 2.

24-hour approach: Specific problem solving strategies are developed for the individual. Everyone who either works with or supports the individual receives specific training to support the individual 24/7.

Training: Practice-oriented additional training, supervision and critical discourse are essential for F.O.T.T. practitioners. Training is adapted for members of the treatment team and, if applicable, to the family/caregiver(s). (It includes theory, demonstration, self experience and supervised practice).

Overview 2

Examples of aims that have been agreed with or set for those affected/their family/caregiver(s) and formulated as SMART objectives

Those affected should learn facial-oral functions in everyday activities and at a participation level in a contextually adapted and coordinated manner; this includes:

- Safe saliva swallowing, tongue/jaw movements to lick lips, removal of food and then spit out and swallow,
- safely ingesting food or liquids (modified consistencies) from various vessels and equipment, with or without support/facilitation,
- to be able to spontaneously use protective mechanisms such as throat clearing, coughing, clearing the pharynx and the productive transport of secretions from the bronchi and lungs - with subsequent coughing or spitting (+ swallowing) in a coordinated and timely manner,
- to be able to use facial movements in a functionally adapted manner, e.g. when speaking, eating and drinking, wiping the mouth, in non-verbal communication and facial expressions (working on symmetry in facial nerve paresis), closing the eyes (if necessary, protect of the eye with equipment such as tape or sunglasses),
- perform oral hygiene independently or with structured input from an assistant,
- interact, communicate (non-verbally, vocally, verbally, if necessary with the support of a communication aid - Augmentative Alternative Communication (AAC) and
- breathe sufficiently without a tracheostomy tube, swallow saliva, protect the airway adequately in the event of penetration/aspiration and to speak with voice.

References

pre-oral phase

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SMART Methode

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PRINCIPLES: Guiding function for practice, overarching courses of action

Know the normal: Theory, self-experience and analysis of normal (in healthy people) and altered or distorted movement in those affected as well as principles, methods and techniques of F.O.T.T. which are taught in courses.

All F.O.T.T. practitioners respect the facial-oral tract as an intimate sphere. They carefully examine and treat those affected with appropriate preparation and structured interventions in order to prevent pain, discomfort and unhelpful reactions.

Examples:

- Before the visual examination of the mouth, patients are initially positioned for the intervention, which has been adapted to enable their best performance. This involves structured touch, facilitation and safe handling by the practitioner. Only then is the “tactile hello”, the touching of the hands and face, carried out before the oral cavity is carefully inspected with an examination lamp/torch and spatula using a jaw support grip.
- If possible, saliva residues are gently removed from the mouth manually (with moist gauze) instead of using suction.

Examination ↔ Treatment

In the F.O.T.T. model, assessment and treatment are closely interrelated (Coombes and Davies 1987). The investigation is not only aimed at identifying problems, but also at examining the effect of therapeutic interventions, e.g. whether other positions, facilitation and more or perhaps less support produce the desired or functional responses in the affected person or perhaps the opposite, i.e. make things worse.

Clinical reasoning: Clinical thinking and decision-making processes help generate hypotheses, formulate ICF and patient-oriented goals, plan treatment and evaluate the patients responses to therapeutic interventions.

Questions include: What can the affected person do and what is quality of the movement, type and intensity of support? Are the set goals realistic? How can they be achieved or do they need to be modified?

Rehabilitation begins as early as possible in order to prevent/reduce

- undesirable compensation strategies, e.g. due to muscular imbalance,
- secondary complications, such as loss of function due to contractures, deformities, unhelpful reactions to touch, movement and pain and psycho-social difficulties.

Early and regular therapeutic care measures can prevent sensory deprivation in the oral cavity (e.g. hypersensitive response or biting reactions). Sensory deprivation makes mouth opening or oral hygiene more difficult.

Back to physiology

Everyday function and movement sequences should be (re)learned as physiologically and functionally as possible. Principles of neuroplasticity and motor learning are used.

From moving to perceiving - from perceiving to moving

In therapy, those affected are facilitated to achieve active movement or movement patterns in order to experience movement (e.g. helped to feel movement) that they are currently unable to achieve on their own.

Whenever possible F.O.T.T. uses context-related and meaningful everyday activities in assessment and treatment, rather than standardized exercises. The benefits of contextualized daily activities include

- People with acquired conditions with limited understanding of language or situations may be able to recognize familiar things and recall or (re)learn functional everyday movements or movement patterns - in other words, in the same way that they originally acquired skills: Learning by doing.
- Attention is directed to an external focus, i.e. to the action instead of learning individual abstract movements.
- The brain has the opportunity to (co-)plan the task. As a result, postural control and agonists and antagonists adjust reciprocally to the execution of the activity.
- The transfer to the everyday life is easier.
- Use of the pre-oral phase during food and fluid intake for anticipatory swallowing, including hand-hand-/ hand-eye-/ hand-mouth coordination or to make the movements for the oral phase easier. This is also applicable to oral hygiene.

Literatur

Nusser-Müller-Busch R, Gampp Lehmann K (eds, 2021), Facial-Oral Tract Therapy (F.O.T.T.) Springer nature, Switzerland

METHODS: framework for action/learning/work processes. How do people learn?

Clinical reasoning and for the acquisition of skills/competence, the following can be used: Self-experience, movement analysis, the F.O.T.T. model, the ICF and the F.O.T.T. algorithm. These can help in the selection of therapeutic resources, environmental design and evaluation.

Movement responses and learning experiences should be facilitated and/or elicited through multimodal stimulation and contextual sensory information. Activities are planned and carried out in such a way that the whole person (their senses, body and especially their hands) is involved. In F.O.T.T., dynamic stability is regarded as a prerequisite for functional movement in the facial-oral tract and is facilitated wherever necessary or possible.

Questions include: Do those affected need support with the execution of movements and/or postural control? Can therapists/helpers or body, the environment or positioning material provide stability (punctum stabile) and facilitate activity for the mobile structures (punctum mobile)?

Methods (selection)

- Eliciting
- Enable, make possible, facilitate
- Reducing (in terms of inhibiting) unhelpful movements (e.g. overactivity of the less affected side of the face) or reactions (e.g. biting)
- Repetition - variation - altering/adapting degree of severity (shaping)
- Starting position/positioning to facilitate breathing and swallowing as well as movement transitions (e.g. from lying to sitting, turning while lying down)
- Developing dynamic stability by offering stability as a prerequisite for mobility of facial-oral structures
- Use everyday activities in context
- Hands on to improve the quality of movement or activity and hands off to analyze and evaluate the quality of that movement
- Stimulation of the senses (proprioceptive, tactile, visual, vestibular, auditory, olfactory, gustatory) – providing information
- Imitation: the practitioner is a model for the patient (non-verbal, visual, auditory)
- Non-verbal and visual models (if necessary) combined with verbal interaction appropriate to the problems of those affected (concrete, positive feedback, conscious use of voice and choice of words)
- Communication may be supported by alternative means, e.g. Augmentative and Alternative Communication (AAC)
- Individual everyday programs that patients can carry out independently or with the support of others and/or interventions that are carried out with or for them (e.g. positioning, mobilization, eye protection)
- If necessary, F.O.T.T. tracheostomy tube management (examination, treatment and handling) for safe weaning from a tracheostomy tube and optimized care in collaboration with the interprofessional team
- Interprofessional workshops and training courses

Literatur

AAC Augmentative, Alternative Communication <https://isaac-online.org/english/what-is-aac/> Abruf 12.02.2023

Dynamische Stabilität

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F.O.T.T.-Algorithmus

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TECHNIQUES: What to do and how to do it, mastering specific skills/abilities

In order to develop or improve function and activity F.O.T.T. uses starting positions, positioning, specific hands-on techniques, everyday activities and adapts the individual environment to meet the individual's needs.

For examination, evaluation and documentation, F.O.T.T.-specific tests and manuals are also used in European clinics, if necessary in adapted form, including the F.O.T.T.-SAS (Swallowing Assessment of Saliva), F.O.T.T.-Algorithm, F.O.T.T.-Consensus, Berlin Swallowing Test (BST), Berlin Dysphagia Index (BDI).

Positions used for therapy, include e.g. lateral position (side lying), prone position, adapted sitting in bed, riding position, sitting at a table, standing and adapted supine position (rare)

- Positions with a large supporting surface, e.g. prone or side-lying position, are used for severely affected patients.
- Positions that provide a lot of support, e.g. the side-lying position, can also promote selective, coordinated tongue activity and facial movements in more mildly or moderately affected patients.
- After treatment, a context- and time-of-day-related position is selected, e.g. for self-activity, sleep or rest, that make it easier to swallow saliva or food, breathe and protect the airway.

Tactile-kinesthetic, but also vestibular, visual, auditory, olfactory, gustatory input, depending on the problem and task, are provided

- for functional alignment in the selected position,
- for dynamic stability,
- to support breathing and protect the airway,
- for selective facial movements, e.g. for central and peripheral facial paresis and
- for eating and drinking, oral hygiene and other F.O.T.-related everyday activities.

F.O.T.T.-specific techniques

- Facilitating movement transitions and using positions with increased alignment to facilitate breathing and swallowing.
- Facilitating tongue and jaw movement or swallowing by means of
 - o Providing stability for the head/neck and jaw, e.g. head and jaw support grip
 - o Tactile "hello"
 - o Tactile oral stimulation
 - o Mobilizing the tongue and facilitating active tongue movements
 - o Direct and indirect swallowing support: Facilitation of swallowing through the floor of the mouth, via mobilization of individual structures or parts of the body as well as touch (involving the hands or working on breathing and voice)
- Facilitating activity-relevant facial and oral movements
- Facilitating breathing in coordination with vocalization, speech, movement and swallowing

- Therapeutic eating (incorporating food of different consistencies) to investigate/examine and treat problems in the swallowing sequence
- Assisted Eating and Drinking
- Development of effective protective and cleansing mechanisms for the respiratory tract such as nose blowing, throat clearing, coughing, spitting and subsequent swallow
- Therapeutic oral hygiene for structured cleaning of the oral cavity and for the examination and treatment of problems in the swallowing sequence
- F.O.T.T. tracheostomy tube management with therapeutic decuffing, therapeutic suctioning and targeted weaning from the tracheal cannula according to best practice F.O.T.T. criteria.
- Mobilization of target tissue (muscles, joints, fascia, neural structures...)

If necessary, equipment such as positioning materials, specific eating and drinking aids and for oral care, e.g. a padded spatula to stabilize the lower jaw, are used.

24-hour approach: Those affected are offered support in everyday life, e.g. positioning, mobilization and specific handling, e.g. for protective reactions such as coughing (manual tactile support on the thorax and abdomen, if necessary with subsequent facilitation of swallowing and/or spitting).

Training: Observe - Feel - Analyze - Apply - Evaluate - Modify Development of F.O.T.T.-specific techniques, handling, transfers, positioning and positioning in self-experience and partner work as well as supervised practice with patients.

Literatur

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Further Literatur zur F.O.T.T. <https://www.fott.eu/de/konzept/literatur>

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CONFLICT OF INTEREST

The study leaders and some study participants are licensed F.O.T.T. instructors (see list of participants). Some of the participants are partners and/or lecturers of FORMaTT GmbH. This company offers F.O.T.T. courses, seminars and supervision for clinics and institutions. The costs incurred for the study and consensus conferences were not financed by third-party funds.