

## What is Dysphagia? Is it anything we have to care about?

- General Introduction
- Diagnostics: FEES or VFSS?
- Dysphagia after discharge

Kopenhagen, 27.9.2010



## Localization of damage

- Cortical
- Cortico-bulbar tracts
- Brainstem (nucleus of central nerves, Central Pattern Generators)
- Nerves (V, VII, IX, X, XII)
- Neuromuscular Transfer



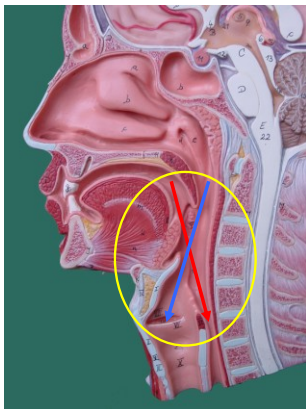
## Aetiology of Dysphagia

- Stroke (50%, with brainstem Involvement >60% )
- Traumatic Brain Injury
- Hypoxia
- ALS
- Parkinson Disease
- Damage of peripher Nerves (G.-B.)
- Myasthenia gravis (Transmitter)



## Phase-model

- | Phase           | responsible locations |
|-----------------|-----------------------|
| • Preoral:      | different             |
| • Oral:         |                       |
| Bolusformation: | cortical              |
| Bolustransport: | corticobulbar tracts  |
| • Pharyngeal:   | Medulla obl. (CPG)    |
| • Oesophageal:  | local                 |



## Warning Symptoms of Aspiration

- Gurgeling Phonation, wet voice
- Bubbling Respiratory Sounds
- Cough before, during or after eating (night!)
- More phlegm
- In case of Tracheostoma: exit of aspirated material



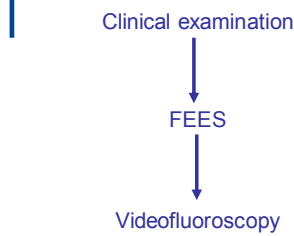
## Clinical signs of pneumonia after Aspiration

- F.U.O
- Typical sound at Auscultation
- Increase of CRP
- Anaemia, Decrease of wight, nightly sweating

## Suspicion! What to do?

Examination: what is the problem?

## Clarification of Swallowing Disorders



## Diagnostic by instrument

endoscopic      radiological



FEES

VFSS

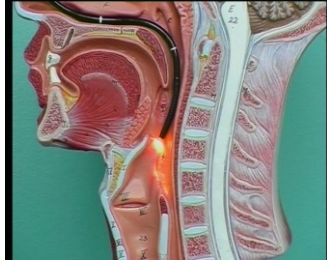
## FEES - VFSS

	FEES	VFSS
Load / risk	0/+	++
Practicability	+++	+
Statement Swallowing	+(+)	+++
Statement Salvia management	+++	0
Statement Structures	+++	0
Cooperation necessary?	+/0	++

## Laryngoscopy FEES



## FEES



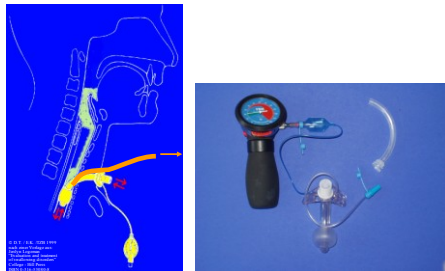
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## FEES - VFSS

	FEES	VFSS
Load / risk	0/+	++
Practicability	+++	+
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Statement Structures	+++	0
Cooperation necessary?	+/0	++

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## TK mit subglottischer Absaugung



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## Types of Tracheal Tubes - Decision -

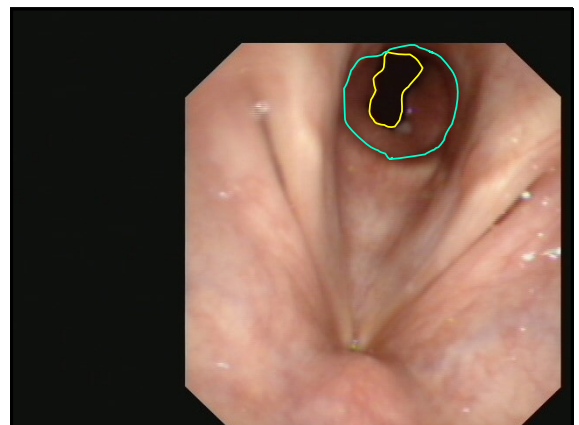
- cuffed – uncuffed
- Which diameter? inner-outer?
- Which length?
- Which form? Curved, angled?
- Flexability important? Spiral wire
- Subglottic suction nessecary?
- Innercanula senceful ?
- Fenestrated tube?

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## FEES - VFSS

	FEES	VFSS
Load / risk	0/+	++
Practicability	+++	+
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Cooperation necessary?	+/0	++

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## Controll of TT- Position

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## Algorithm of weaning Phase

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Dysphagia  
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## Dysphagic Patients with Tracheotomies: A Multidisciplinary Approach to Treatment and Decannulation Management

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<sup>1</sup>Department of Linguistics, University of Potsdam, Potsdam, Germany; and <sup>2</sup>REHAB Basel, Basel, Switzerland

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## Vicious circle

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Neuro Rehabil 2009; 15 (5): 301–307

## Das Trachealkanülenmanagement in der neurologischen Rehabilitation

W. Schlaegel  
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**Tracheal tube management in neurorehabilitation**  
W. Schlaegel

**Abstract**  
The neurorehabilitation of patients with tracheal tube requires an exact knowledge of special features of a cuffed tracheal tube. Based on a selection of international literature, recommendations are recorded about selection of the suited tube-model, daily care and the management in the weaning phase. The definite decannulation represents undisputedly an important target of rehabilitation and is reached more lightly and more quickly by a multidisciplinary management.

**Keywords:** multidisciplinary tracheal tube management, cuffed tracheal tube, weaning phase, sortiment of tracheal tubes

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## Evidence of Dysphagia by FEES-Examination

- directly :
  - Aspiration/Penetration anterograde („white out“)
  - retrograde via Tracheostoma
- indirectly :
  - Leaking
  - Pooling/ Residual
  - „Late Triggering“
  - Deficit of sensibility
  - Cough at Swallowing

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## Points of interest

- What is to see?
  - Pooling
  - Residual = Retentions
- When is a Penetration/Aspiration to see?
  - prädeglutitive – intradeglutitive – postdeglutitive
- Reactions in case of penetration or aspiration (Rosenbek Scale)

## 8-Point Penetration-Aspiration Scale

- 1 Material does not enter airway
- 2 Material enters the airway, remains above the vocal folds, and is ejected from the airway.
- 3 Material enters the airway, remains above the vocal folds, and is not ejected from the airway.
- 4 Material enters the airway, contacts the vocal folds, and is ejected from the airway.
- 5 Material enters the airway, contacts the vocal folds, and is not ejected from the airway.
- 6 Material enters the airway, passes below the vocal folds, and is ejected into the larynx or out of the airway.
- 7 Material enters the airway, passes below the vocal folds, and is not ejected from the trachea despite effort
- 8 Material enters the airway, passes below the vocal folds, and no effort is made to eject

## When is FEES obligatory ?

- Risk of Aspiration is not clear
- Salvia management
- Patient with tracheal tube:
  - airways (Breathing through mouth and nose is not possible)
  - Bleeding out of the tracheostoma
  - Indication for tube weaning

## When is FEES optional?

- Control of oral feeding
- Control during the Tube-Weaning-Phase
- Control of Recurrens-Hemiplegia
- Change to another Type of Tube

## Frequency of Dysphagia

Beginning of Rehabilitation	End of Rehabilitation (discharge)
74%	21,5%

## What happens with patients with dysphagia after discharge ?

- Results of a 5-Years Follow up Study

# Poststationärer Verlauf schluckgestörter Patienten mit Hirnschädigungen – 5-Jahres-Follow-up-Studie

W. Schlaegel  
Therapiezentrum Burgau

5 years follow-up after discharge of patients with brain lesions and dysphagia  
W. Schlaegel

**Abstract**

After discharge from the neurological rehabilitation patients with a persistent swallowing disorder have a significantly higher mortality rate than patients without dysphagia, even if their age and the level of functional independence measure is comparable. The influence of different variables on the mortality rates and the clinical course are analysed. As a result the presence of a tracheal tube and the place of residence (at home or nursing home) were identified as main outcome predictors. On the basis of these findings a program for outpatient aftercare is presented, that targets the reduction of mortality and the updating of recommendations by re-evaluation.

**Key words:** dysphagia, mortality, long-term observation, re-evaluation, outpatient aftercare

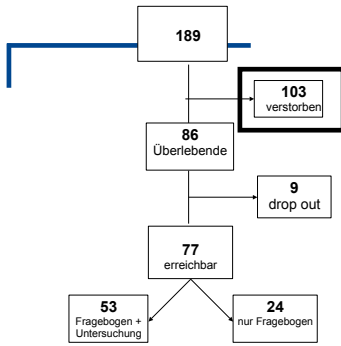
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## Ausgangslage

- Ca. 20 % werden mit einer Schluckstörung entlassen
- Empfehlungen am Ende der stationären Rehabilitation werden oft dauerhaft weitergeführt, auch wenn sich der Zustand des Patienten verändert
- In der Literatur keine Daten (längerfristigen Beobachtung) über poststationären Verlauf (follow up <6 month, n<36)

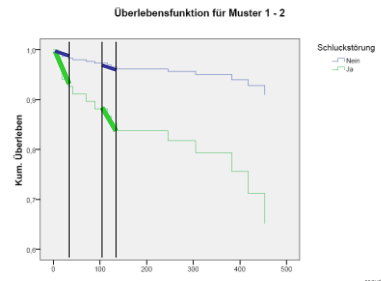
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## 5 years after discharge n=189



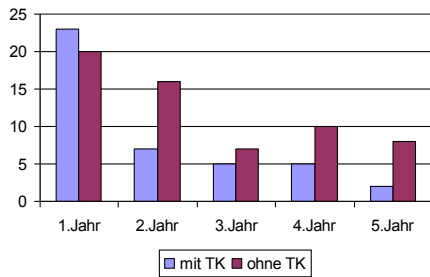
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## Mortalität Schluckstörung



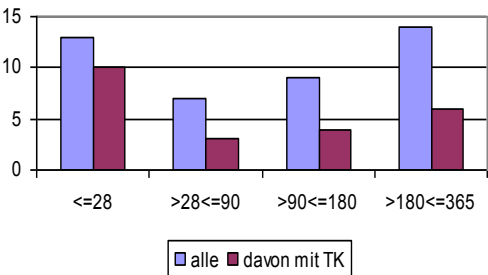
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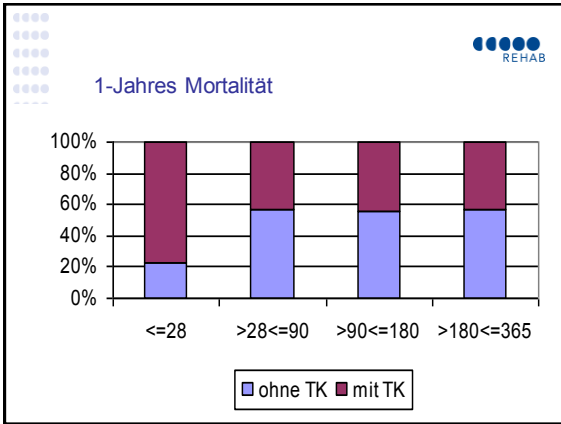
## 5 Jahres Mortalität



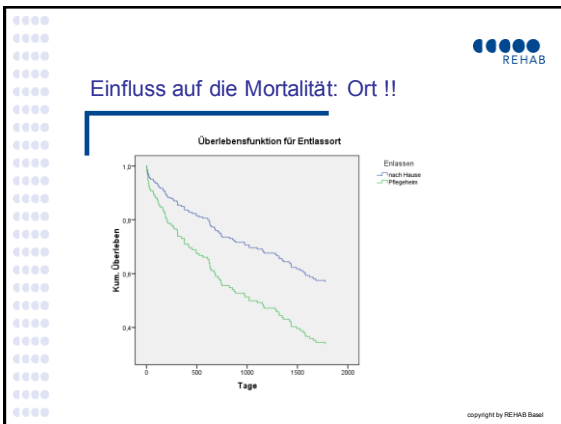
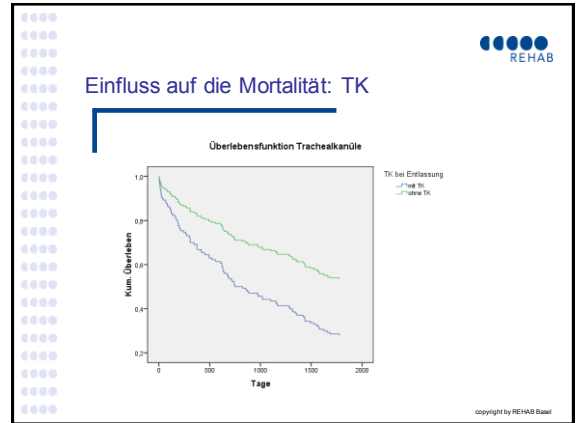
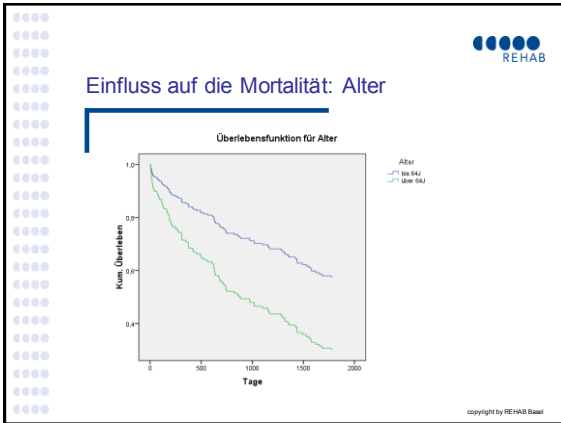
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## 1-Jahres Mortalität





- Einfluss auf die Mortalität: ?
- Alter ?
  - Trachealkanüle ?
  - Diagnose ?
  - Schwere der Schluckstörung ?
  - Ernährungssonde ?
  - Entlassungsart ?



- Einfluss auf die Mortalität: ?
- Alter ja!
  - Trachealkanüle ja!
  - Diagnose nein!
  - Schwere der Schluckstörung nein!
  - Ernährungssonde nein!
  - Entlassungsart ja!

## Signifikanz von Alter, TK, Ort

Variablen in der Gleichung

	B	SE	Wald	df	Signifikanz	Exp(B)
Schritt 1 AlterE	,024	,007	10,870	1	,001	1,024
Schritt 2 TKE_D	,704	,221	10,166	1	,001	2,022
AlterE	,031	,008	15,183	1	,000	1,031
Schritt 3 ENT_D	-,326	,107	9,358	1	,002	,722
TKE_D	,707	,220	10,299	1	,001	2,028
AlterE	,030	,008	14,610	1	,000	1,030

## Outcome

- Ernährungsstatus (FOIS)
- TK
- Selbständigkeit (BI, FIM)
- Dysphagie-bedingten Einweisungen
- Schweregrad der Schluckstörung (Laryngoskopie)

## Functional Oral Intake Scale (FOIS)

Crary et al. 2005

### Nurse Care Intensity

Level	Description
I	Nothing by mouth
II	Tube dependent with minimal attempts of food or liquid
III	Tube dependent with consistent oral intake of food or liquid
IV	Total oral diet of a single consistency
V	Total oral diet with multiple consistencies, but requiring special preparation or compensations
VI	Total oral diet with multiple consistencies without special preparation, but with specific food limitations
VII	Total oral diet with no restrictions

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Low (A)

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High (B)

## FOIS – Nurse Intensity

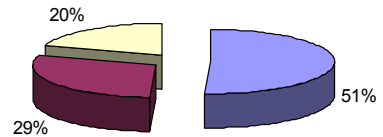
A: FOIS Level 1,2,6,7 B: FOIS Level 3-5

n=77 (survivals)	At discharge	After 5 years
low (A)	64	52
high (B)	12	25

### Dysphagie assoziierte Einweisungen

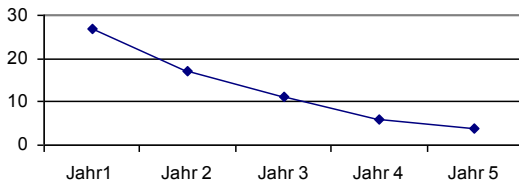
n=77	V.a. Pneumonie	Stoma, PEG
im 1. Jahr n.E	9	1
im 2. Jahr n.E	3	1
im 3. Jahr n.E	3	1
im 4. Jahr n.E	6	1
im 5. Jahr n.E	6	3
Jahre 1-5	27	7

### Interventionen

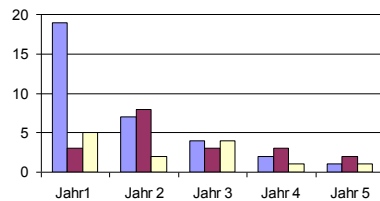


tel. Beratung amb. Unters. Stat. Aufn.

### alle Interventionen



### Interventionen



tel. Beratung Amb. Unters. Stat. Aufn.

### Most requests:

1. TT
2. Function of swallowing
3. PEG-Problems

### Einfluss von ambulanter „Schlucktherapie“ auf den Verlauf?

## Evidence of Swallow-Therapy

- Uneinheitliche Definition
- Intensität und Dauer
- Wie evaluieren?
- Wann evaluieren?

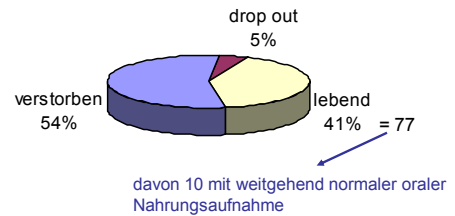
## Häusliche Pflege oder Pflegeheim?

- Mortalität im PH signifikant höher! (v.a. Pat. mit TK)
- In Bezug auf Wegkommen von der Sonde: egal!
- In Bezug auf Wegkommen von der TK: egal!
- Tendenz: Zu Hause mehr Risiko: mehr Komplikationen (Einweisungen), dafür aber mehr Fortschritte!

## Nachsorgeprogramm

- Erfassung der Nachsorge Patienten
  - schwere Schluckstörung
  - TK
  - Einzugsbereich (Sprengel)
- Zusammenarbeit mit Überleitungspflege
- Organisation und Durchführung amb. NU
- „Schluck-Hot line“

## 5 years after discharge n=189



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