Tracheotomie Symposium

Het tracheacanule zorgpad – van plaatsing tot decanulatie

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Coloplast Group

Welkom

Lieselotte Schiltz | Business Unit Manager Atos Medical Benelux

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TRACOE
Vragen voor de experten?
Stel ze via deze link & wij nemen ze mee tijdens de Q&A sessies na de lezingen.
11|20 MEI|23 TRACHEOTOMIE SYMPOSIUM
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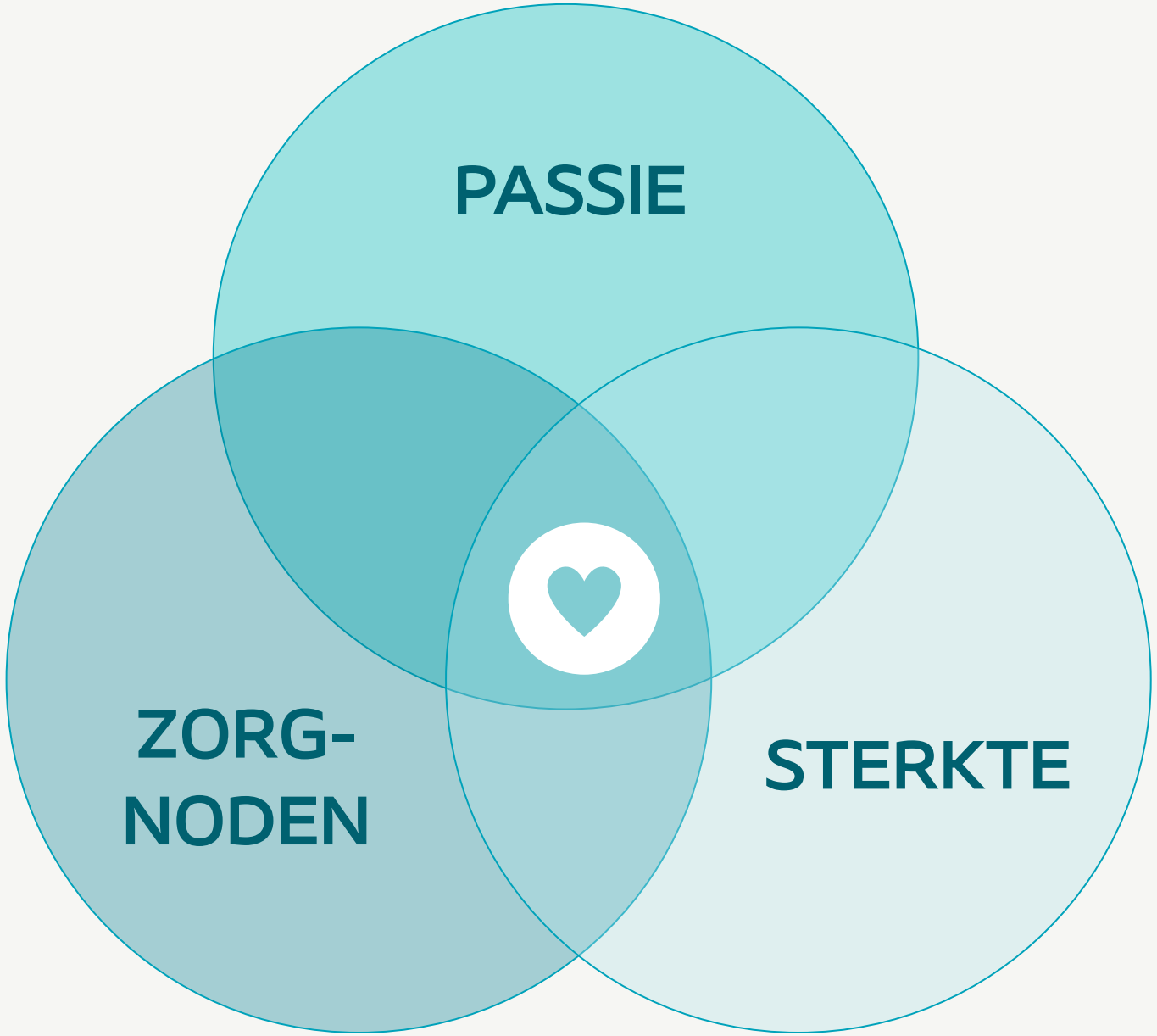

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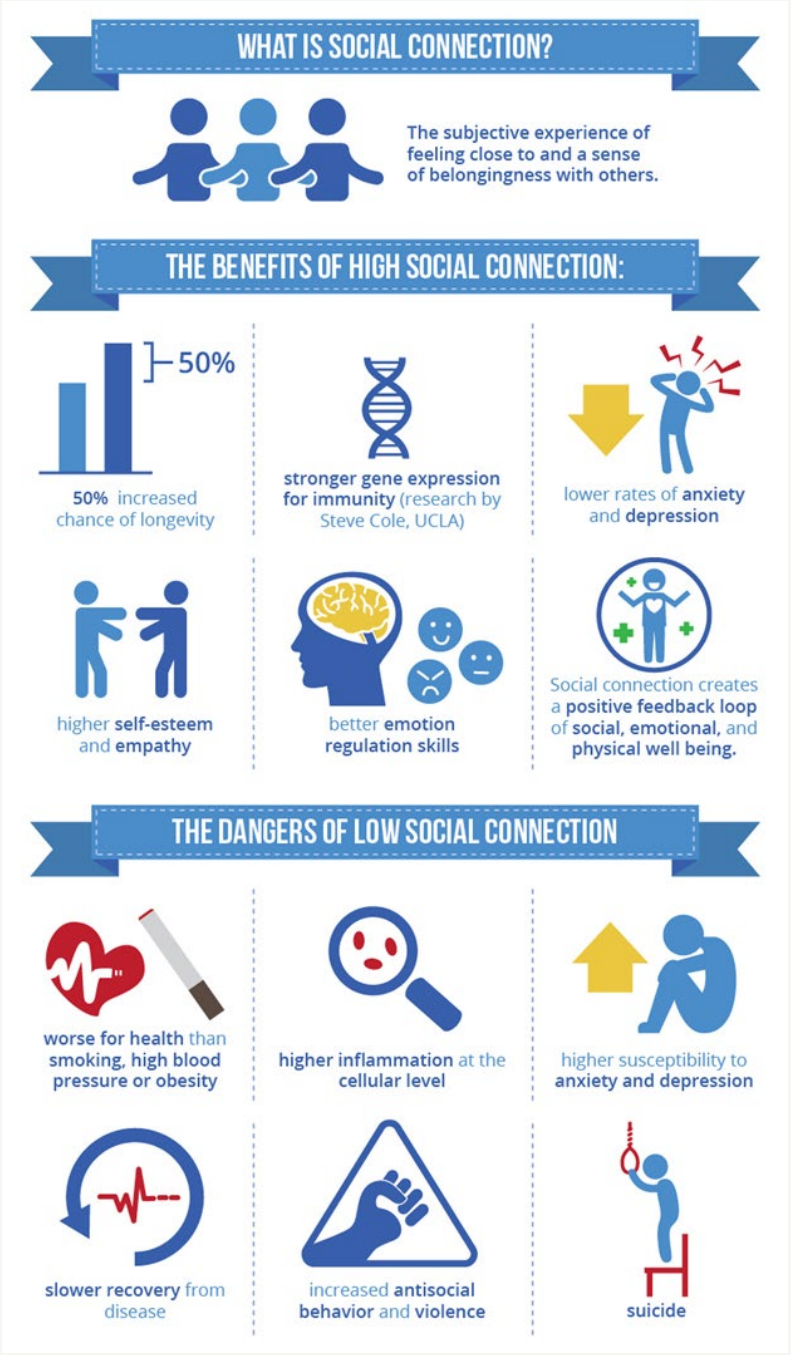

Connectedness & Health: The Science of Social Connection, Emma Sappale


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Peter & Margreta | Frisius MC
Moderatoren van de dag

Tracheotomie Symposium

Het tracheacanule zorgpad - van plaatsing tot decanulatie

20 maart 2026

Het Tracheacanule zorgpad – *van plaatsing tot decanulatie*

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Introductie

Peter Egbers & Margreta Munstra – de Jong

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Vragen?

Scan de QR-code voor het doorsturen van uw vragen

- Uw naam (optioneel)
- Naam van de spreker
- Uw vraag

U kunt het formulier meermaals gebruiken/invullen

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1

01

Percutane dilatatie tracheotomie

Evidence, beeldvorming en interdisciplinaire zorg

Drs. Vincent de Jong | Chirurg-intensivist Haaglanden

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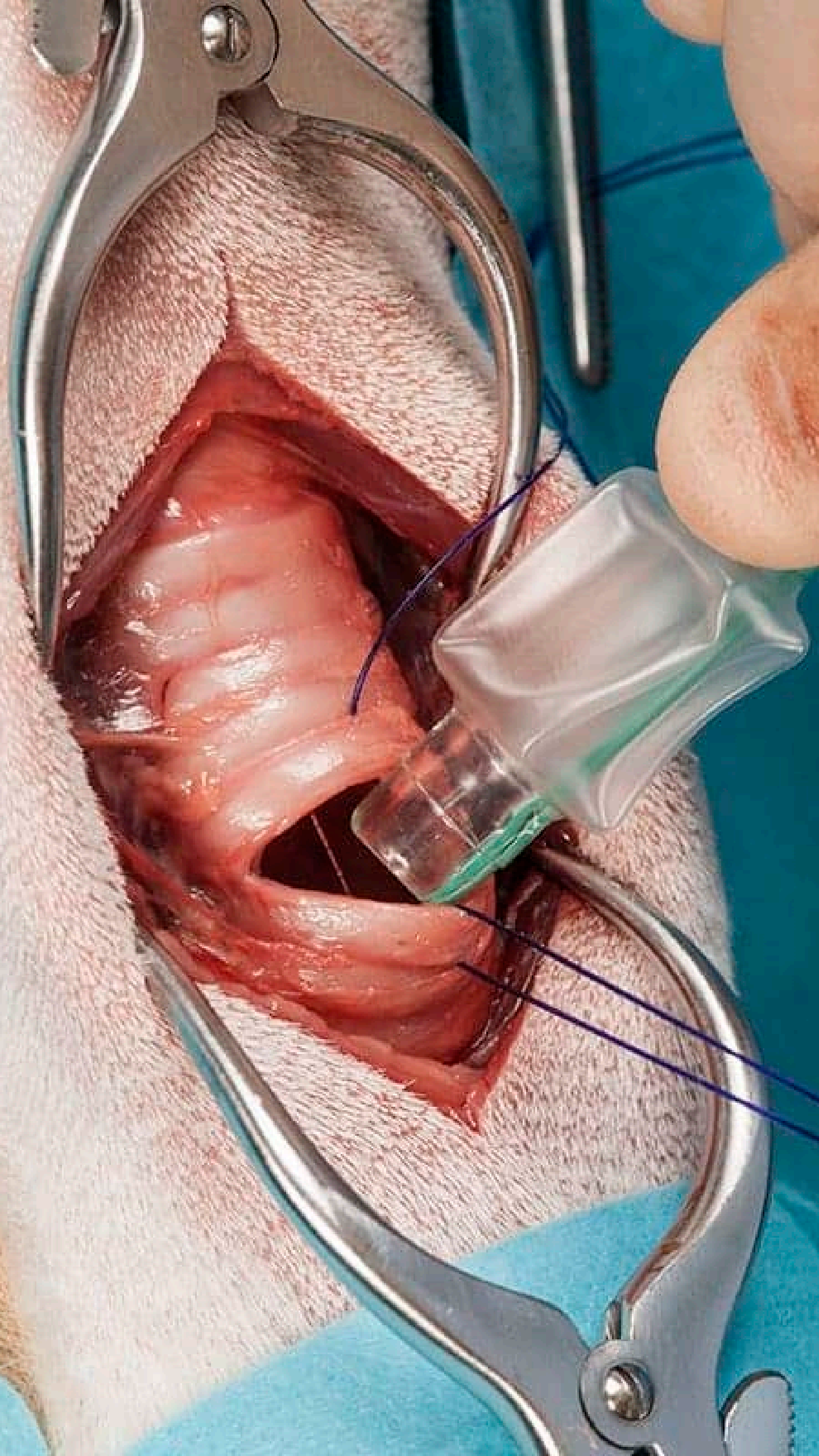


H+ MC Intensive Care

2de tracheotomie Symposium

Even een trach

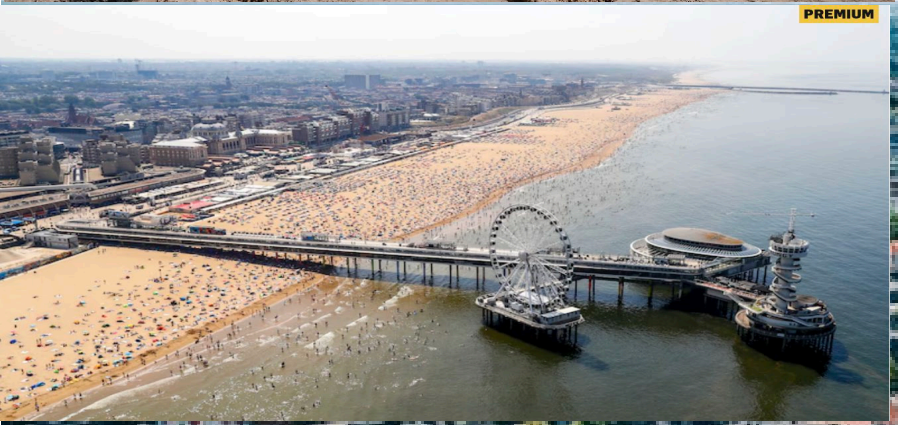
meer dan gewoon even snijden

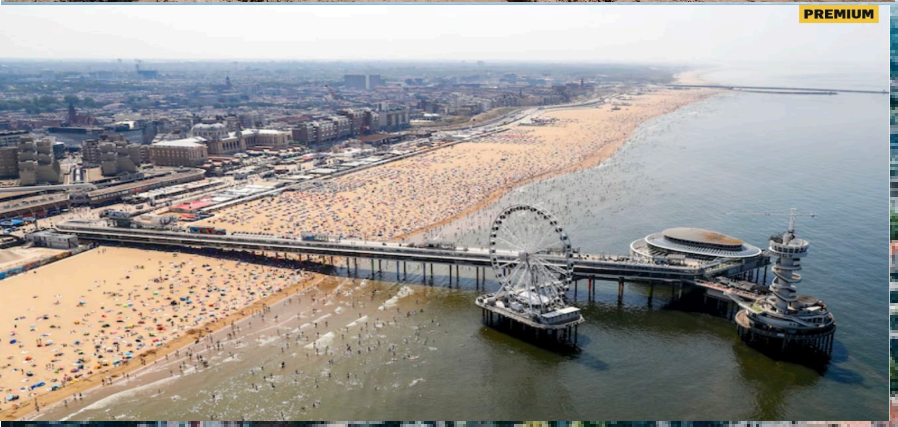
Vincent de Jong

Disclosures: geen

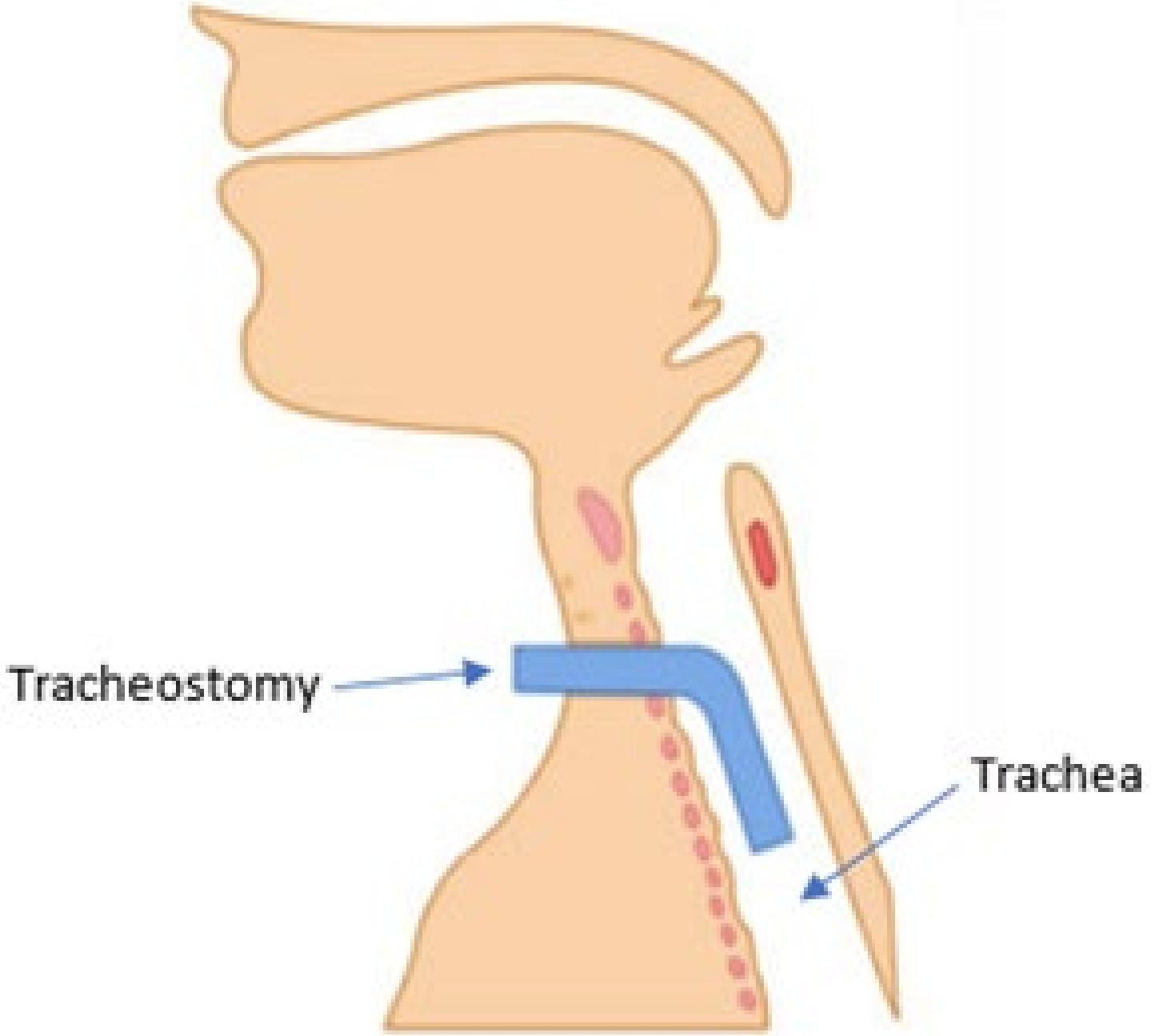
H+
MC Intensive Care

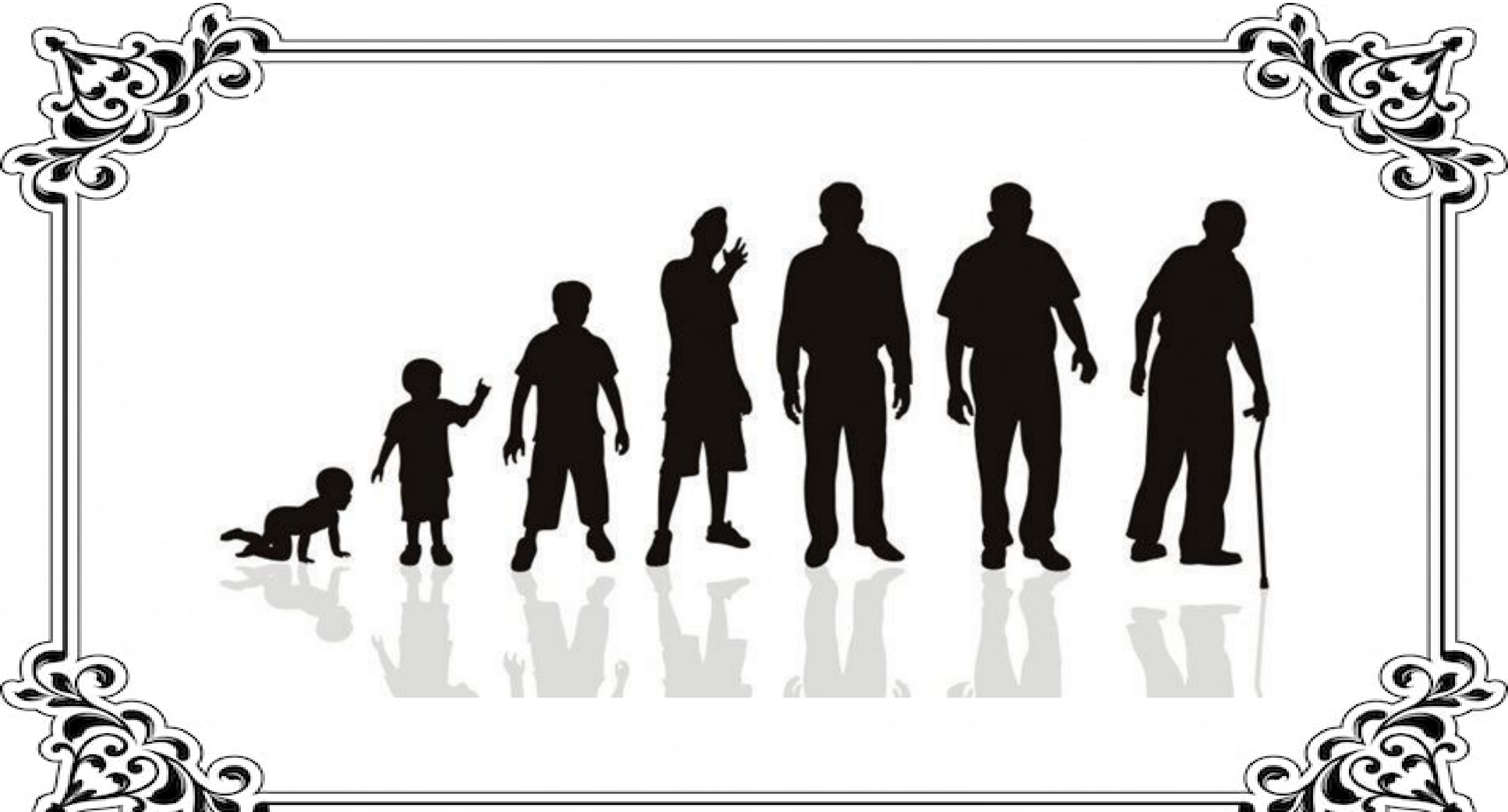
H+
MC Intensive Care


PREMIUM


PREMIUM

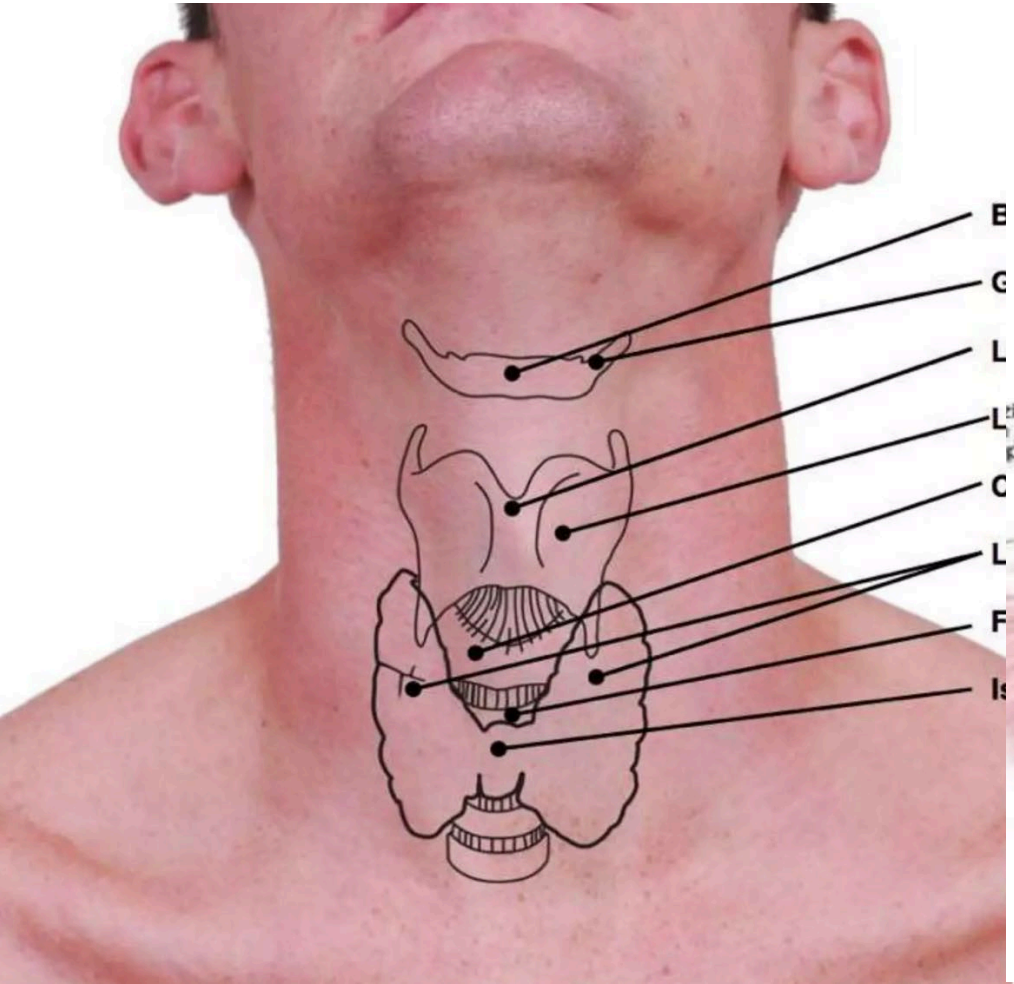

PREMIUM
SPORT NOORD
DAGBLAD VAN HET NOORDEN
Emmer Courant
Kieft all office
Wij laten bedrijven werken

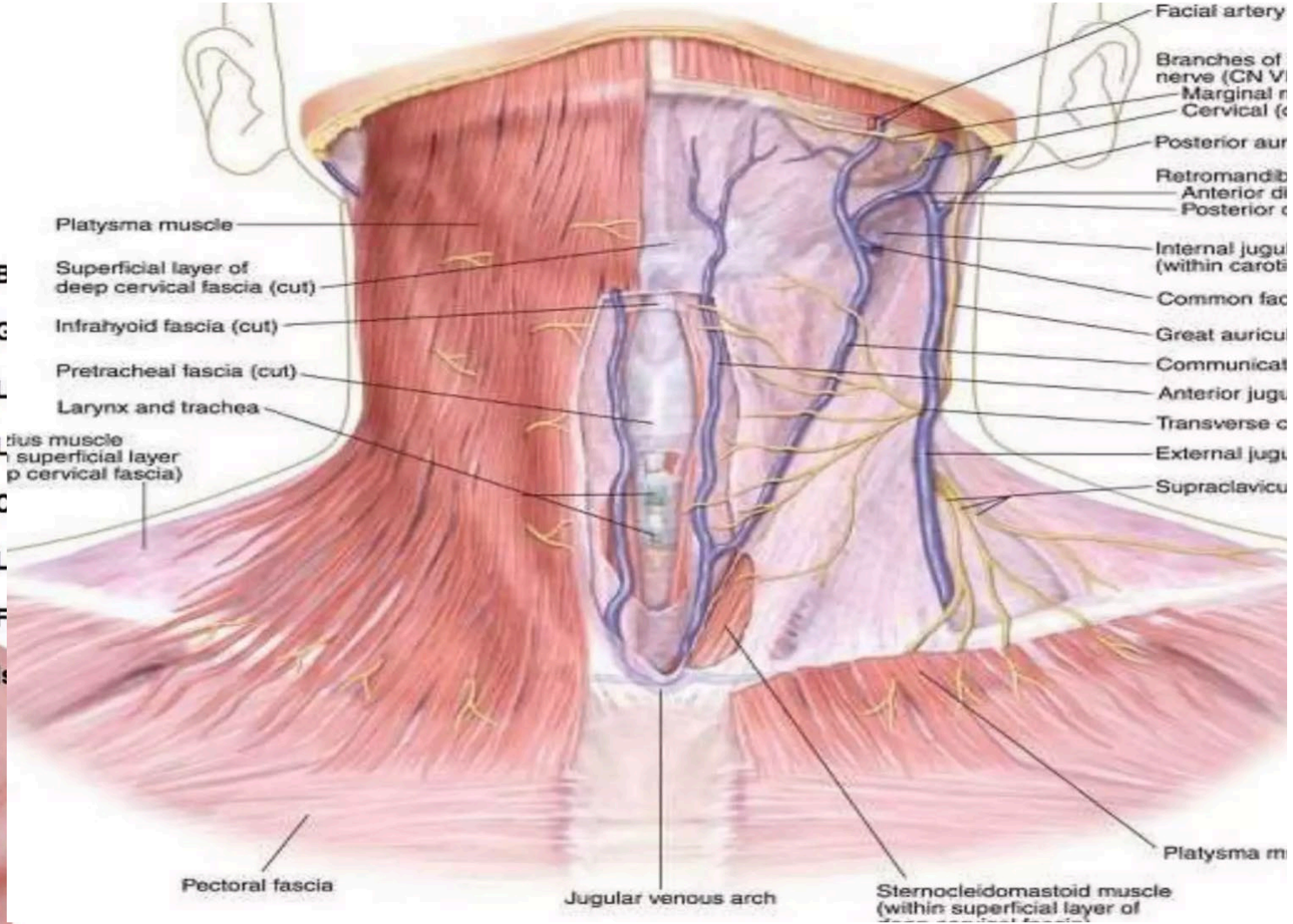

Tracheostomy
Trachea



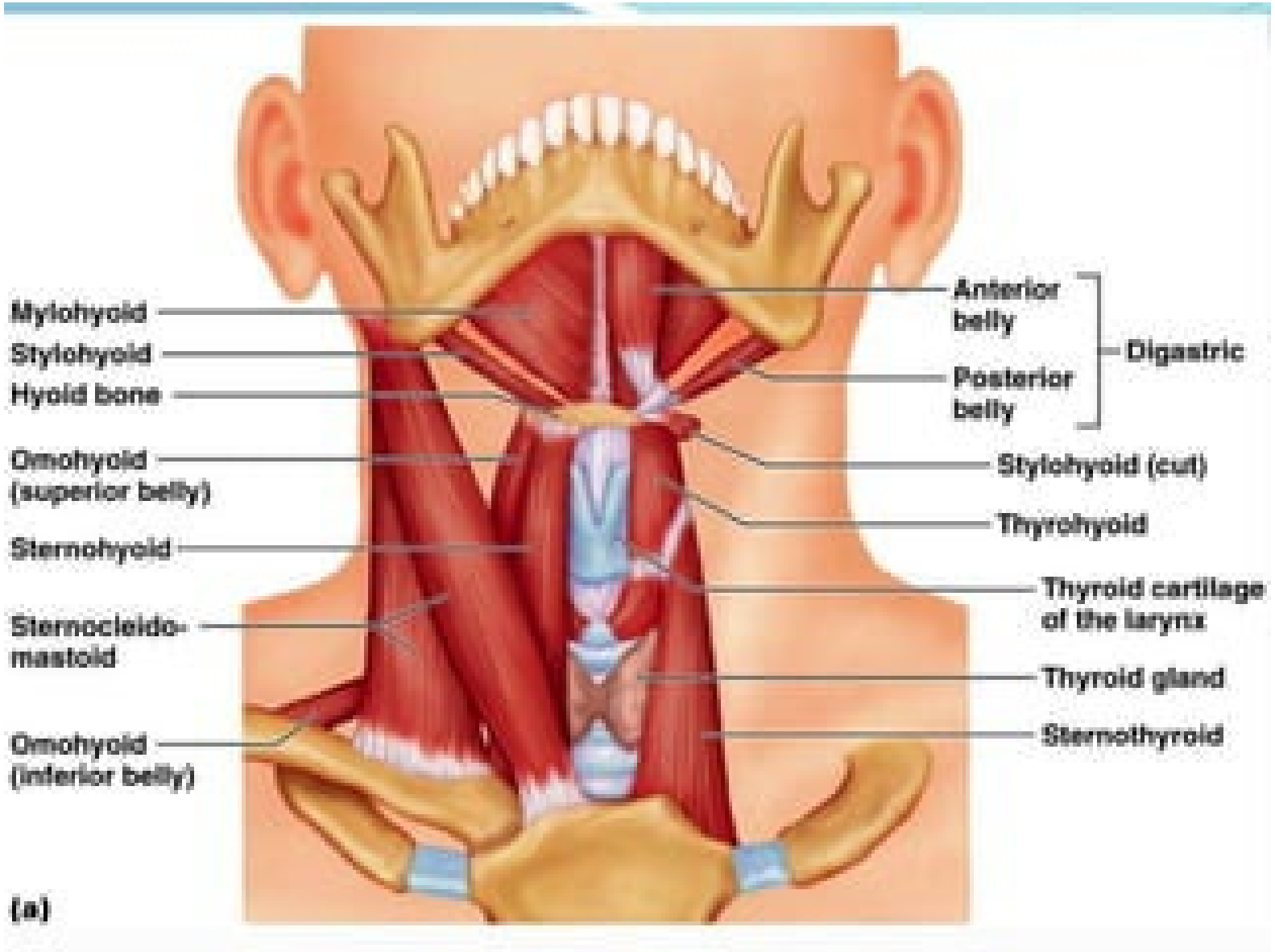
GEPLAND

Anatomie



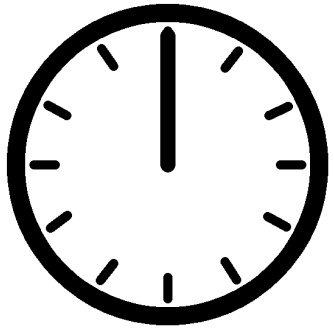

Facial artery
Platysma muscle
Superficial layer of deep cervical fascia (cut)
Infrahyoid fascia (cut)
Pretracheal fascia (cut)
Larynx and trachea
Pectoral fascia
Jugular venous arch
Sternocleidomastoid muscle (within superficial layer of
Platysma m
Great auricul
Communicat
Anterior jugu
Transverse c
External jugu
Supraclavicu

Anatomie

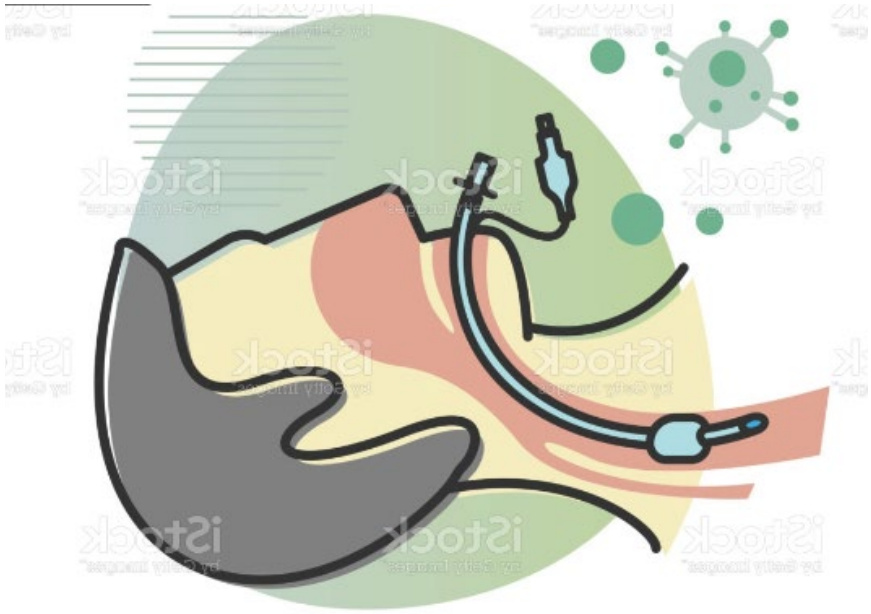

Mylohyoid
Stylohyoid
Hyoid bone
Omohyoid (superior belly)
Sternohyoid
Sternocleido-mastoid
Omohyoid (inferior belly)
Anterior belly
Posterior belly
Digastric
Stylohyoid (cut)
Thyrohyoid
Thyroid cartilage of the larynx
Thyroid gland
Sternothyroid
(a)

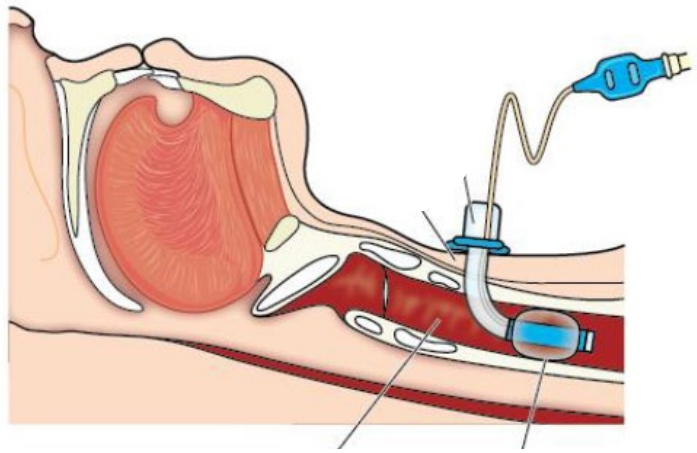
Indicatie

H+ MC Intensive Care



Timing tracheostomie





Predicting the need
admitted to an intensive care unit: A

Cristian Papuzinski[a], Miguel Durante[a], Catalina Tobar, MD[b],
Felipe Martinez, MD[c,*], Eduardo Labarca, MD[d]

[a] Escuela de Medicina, Universidad de Valparaíso, Valparaiso, Chile
[b] Departamento de Medicina, Universidad de Valparaíso, Valparaiso, Chile
[c] Centro de Investigaciones Biomédicas, Escuela de Medicina, Universidad de Valparaíso, Valparaiso, Chile
[d] Unidad de Cuidados Intensivos, Hospital Naval Almirante Nef, Valparaiso, Chile

tracheostomy decreases ven

berger, MD[1],
ltman, MD, PhD[1]

Tracheostomy Update
When and How

Bradley D. Freeman, MD

To breathe or not to breathe: a review of artificial airway placement and related complications

John Donatelli · Ayushi Gupta · Ramya Santhosh · Todd R. Hazelton · Leelakrishna Nallamshetty · Alvaro Macias · Carlos A. Rojas

Contents lists available at ScienceDirect

Oral Oncology

journal homepage: www.elsevier.com/locate/oraloncology

Review

Systematic review of international guidelines for tracheosto in COVID-19 patients

Carlos M. Ch
Nicola
rome R. Lechien[a,c,1], Christian Calvo-F
[f], Shazia Peer[a,g], Jon A. Sistiaga-Sua
Cammaroto[a,h], Miguel Ma

Vorige/Volgende

the Critical

Charles C
Jacqueli

Review

Tracheostomy: clinical review and guidelines☆

Paul De Leyn[a,*], Lieven Bedert[b], Marion Delcroix[c], Pieter Depuydt[d],
Geert Lauwers[e], Youri Sokolov[f], Alain Van Meerhaeghe[g], Paul Van Schil[h]

[a] Department of Thoracic Surgery, University Hospital Leuven, Belgium
[b] Department of Pneumology, Middelheim Hospital, Belgium
[c] Department of Pneumology, University Hospital Leuven, Belgium
[d] Department of Intensive Care, University Hospital Ghent, Belgium
[e] Department of Thoracic and Vascular Surgery, ZOL Hospital Genk, Belgium
[f] Department of Thoracic Surgery, Erasme University Hospital Brussels, Belgium
[g] Department of Pneumology, CHU A. Vesale, Montigny-le-Tilleul, Belgium
tment of Thoracic and Vascular Surgery, University Hospital Antwerp, Belgium

received in revised form 1 May 2007; accepted 24 May 2007; Available online 27 June 2007

e Tracheostomy
val in Patients
ical Ventilation

Ulc

The Triological Society
Best Practice

What Is the Optimal Timing for Tracheostomy in Intubated Patients?

Bharat A. Panuganti, MD; Philip Weissbrod, MD; Edward Damrose, MD

cheo-oesophageal fistula during
racheostomy and intermittent
pressure ventilation[1]

S. HARLEY
spital, Sully, Penarth, Glam.

Timing of Tracheostomy in Intensive Care Unit Patients

Terug/Vooruit

PICO

P- Langdurig geïntubeerde patiënt

I- Vroege tracheotomie

C- Late tracheostomie

O- Mortaliteit, ic-opname dagen

PubMed.gov

timing tracheostomy OR early AND late tracheostomy

Search

Advanced Create alert Create RSS User Guide

RESULTS BY YEAR

Reset

20112021

TEXT AVAILABILITY

- Abstract
- Free full text
- Full text

ARTICLE ATTRIBUTE

- Associated data

ARTICLE TYPE

- Books and Documents
- Clinical Trial
- Meta-Analysis
- Randomized Controll

Filters applied: Meta-Analysis, Randomized Controlled Trial, Systematic Review, in the last 10 years, Adult: 19+ years. Clear all

Did you mean ***timing of tracheostomy*** *OR early AND late tracheostomy* (8 results)?

1 **Timing** of **tracheostomy** in patients with prolonged endotracheal intubation: a systematic review.

Cite Adly A, Youssef TA, El-Begermy MM, Younis HM.

Share Eur Arch Otorhinolaryngol. 2018 Mar;275(3):679-690. doi: 10.1007/s00405-017-4838-7. Epub 2017 Dec 19.

PMID: 29255970 Review.

2 Incidence of sternal wound infection after **tracheostomy** in patients undergoing cardiac surgery: A systematic review and meta-analysis.

Cite Toeg H, French D, Gilbert S, Rubens F.

Share J Thorac Cardiovasc Surg. 2017 Jun;153(6):1394-
10.1016/j.jtcvs.2016.11.040. Epub 2016 Nov
PMID: 27964980 Free artic

3 Effect of ear
pa

PUBLICATION DATE

- 1 year
- 5 years
- 10 years
- Custom Range

AGE

- Adult: 19+ years

Additional filters

4 **Early** versus **late** percutaneous dilational **tracheostomy** in critically ill patients anticipated requiring prolonged mechanical ventilation.

Cite Zheng Y, Sui F, Chen XK, Zhang GC, Wang XW, Zhao S, Song Y, Liu W, Xin X, Li WX.

Share Chin Med J (Engl). 2012 Jun;125(11):192
PMID: 22884055 Clinical T

5 Early tra
e but has no impact on
ed study.
Schmelzer T, Padberg
doi:

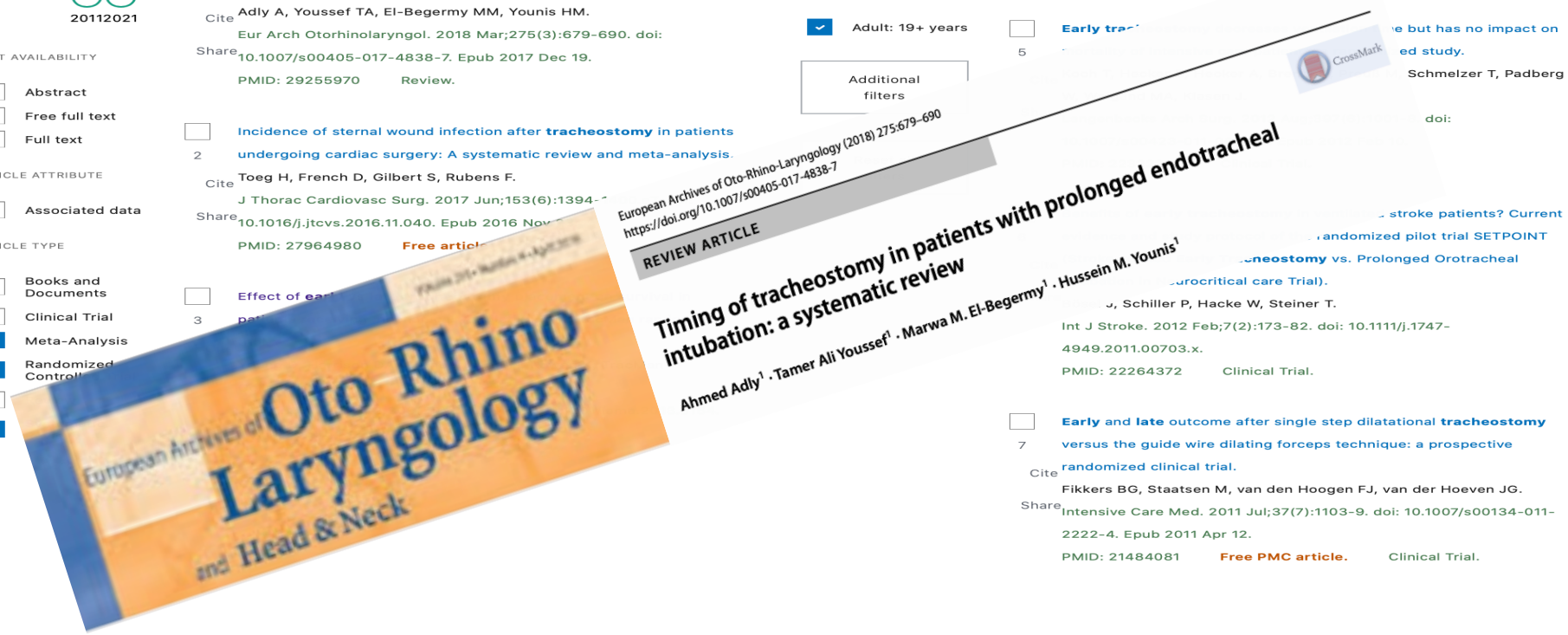
stroke patients? Current
randomized pilot trial SETPOINT
neostomy vs. Prolonged Orotracheal
urocritical care Trial).
, Schiller P, Hacke W, Steiner T.
Int J Stroke. 2012 Feb;7(2):173-82. doi: 10.1111/j.1747-4949.2011.00703.x.
PMID: 22264372 Clinical Trial.

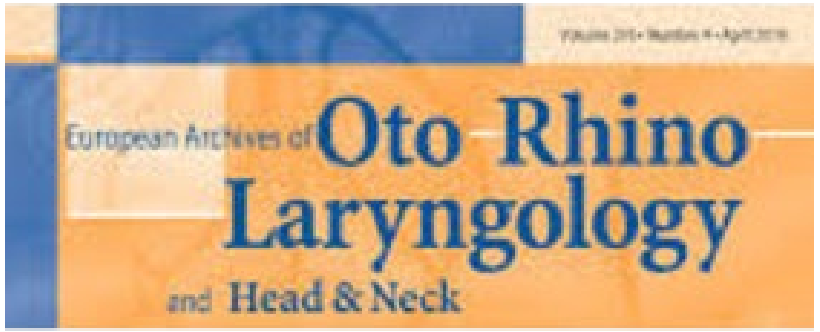
7 **Early** and **late** outcome after single step dilatational **tracheostomy** versus the guide wire dilating forceps technique: a prospective randomized clinical trial.

Cite Fikkers BG, Staatsen M, van den Hoogen FJ, van der Hoeven JG.

Share Intensive Care Med. 2011 Jul;37(7):1103-9. doi: 10.1007/s00134-011-2222-4. Epub 2011 Apr 12.

PMID: 21484081 Free PMC article. Clinical Trial.





European Archives of Oto-Rhino-Laryngology (2018) 275:679–690
https://doi.org/10.1007/s00405-017-4838-7

REVIEW ARTICLE

Timing of tracheostomy in patients with prolonged endotracheal intubation: a systematic review

Ahmed Adly[1] · Tamer Ali Youssef[1] · Marwa M. El-Begermy[1] · Hussein M. Younis[1]

Meta-analyse

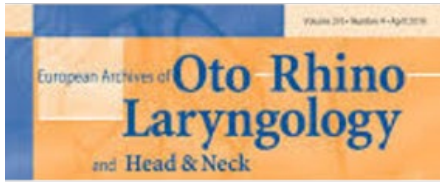
1987-2017
English
RCT

Groepen

< 7 dagen
<14 dagen
<21 dagen

Medline search:

timing of trachestomy
early vs late tracheostomy
tracheostomy after intubation



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Ahmed Adly[1] · Tamer Ali Youssef[1] · Marwa M. El-Begermy[1] · Hussein M. Younis[1]

resultaten

690 artikelen
43 voldeden aan criteria
222.501 volwassenen

Table 1 Data collected from the articles involved in comparing early and late tracheostomy in adults

Author	Type of study	Patients with early tracheostomy						Patients with late tracheostomy					
		NO_	at (Days)	HAP	Mortality	MV Mean ± SD	ICU stay Mean ± SD	NO_	at (Days)	HAP	Mortality	MV Mean ± SD	ICU stay Mean ± SD
Ahmed and kuo [6]	Retrospective cohort	29	<7	11	4	15.7 ± 6	19 ± 7.7*	107	>7	14	1	20 ± 16	25.8 ± 11.8
Alali et al. [7]	Retrospective cohort	62	<8	–	48	10 ± 5.65*	13 ± 5.65*	59	>8	–	39	16 ± 6.36	19 ± 7
Alhajhusain et al. [8]	Retrospective cohort	39	<9	5*	5	15.1 ± 8.2*	16.6 ± 7.6*	63	>9	25	23	27.2 ± 10.9	27.2 ± 9.1
Arabi et al. [9]	Prospective cohort	29	<7	–	5	9.6 ± 1.2*	10.9 ± 1.2*	107	>7	–	15	18.7 ± 1.3	21 ± 1.3
Armstrong et al. [10]	Retrospective cohort	62	<7	–	7	–	15 ± 12*	95	>7	–	11	–	29 ± 26
Barquist et al. [11]	Prospective cohort	29	<8	28	2	8.57 ± 7.9	4.96 ± 6	31	>28	28	5	8.83 ± 9	5.26 ± 6.5
Ben-Avi et al. [12]	Retrospective cohort	90	<14	–	16*	16 ± 11	27 ± 21	109	>14	–	17	21 ± 14	31 ± 23
Bickenbach et al. [13]	Retrospective cohort	237	<10	–	53*	20.1 ± 11.4*	25.5 ± 15.7*	59	>10	–	24	29.5 ± 13.8	34.2 ± 24.1
Blot et al. [14]	Prospective cohort	61	<4	–	21	–	–	95	>14	–	20	–	–
Bosel et al. [15]	Prospective cohort	30	<3	–	4	15 ± 4.94	17 ± 6.36	30	7–14	–	2	12 ± 5.65	18 ± 7
Chen et al. [16]	Retrospective cohort	22	<21	–	–	44.4 ± 10.4*	–	38	>21	–	–	59.5 ± 9.6	–
Choi et al. [17]	Retrospective cohort	10	<10	4*	–	5.2 ± 6.5*	20.8 ± 6*	11	>10	9	–	29.2 ± 22.9	38 ± 18.5
Devarajan et al. [18]	Retrospective cohort	114	<10	63*	24*	–	526.5 ± 351.2*	114	14–28	71	46	–	698.7 ± 332.5
Flaatten et al. [19]	Retrospective cohort	230	<6	–	51*	–	–	231	>6	–	75	–	–
Ganuza et al. [20]	Retrospective cohort	101	<7	75	1	33.79 ± 29.62*	40.31 ± 26.49*	114	>7	83	4	40.73 ± 22.71	49.42 ± 19.24
Gatti et al. [21]	Prospective cohort	14	<7	–	–	12.6 ± 6.5*	15 ± 6.5*	10	>7	–	–	20.9 ± 10.7	27.1 ± 11.1
Gessler et al. [22]	Retrospective cohort	39	<7	19*	3*	17.4 ± 1.98*	–	109	>7	75	8	22.3 ± 1.77	–
Holloway et al. [23]	Retrospective cohort	24	<14	–	1	–	15 ± 7.5*	49	>14	–	1	–	19 ± 11.8
Hossseinian et al. [24]	Retrospective cohort	13,386	<10	–	2837*	–	–	26,625	>10	–	7147	–	–
Huang et al. [25]	Retrospective cohort	11	<10	–	1*	–	16 ± 8*	27	>10	–	4	–	29 ± 13
Hyde et al. [26]	Retrospective cohort	53	<5	–	–	16.7 ± 11.4*	21.4 ± 11*	53	>5	–	–	21.9 ± 12.9	28.6 ± 16.3
Jeon et al. [27]	Retrospective cohort	39	<10	2*	2	11.4 ± 5.6*	19.9 ± 10.6*	86	>10	16	6	21.5 ± 15.5	31.1 ± 18.2
Keenan et al. [28]	Retrospective cohort	5402	<10	2479	568	–	–	4260	>10	2094	372*	–	–
Koch et al. [29]	Retrospective cohort	50	<4	19*	10	15.3 ± 5.4*	21.5 ± 7.5*	50	>4	32	11	21.1 ± 7.24	30.6 ± 7.5
Mahafza et al. [30]	Retrospective cohort	70	<21	20*	13*	–	–	26	>21	15	13	–	–
Mehta et al. [31]	Retrospective cohort	7595	<7	–	831	–	–	12,230	>7	–	1850	–	–
Moller et al. [32]	Retrospective cohort	81	<7	22*	–	12.2 ± 0.9*	16.7 ± 1*	104	>7	44	–	21.9 ± 1.3	26 ± 1.3
Pinheiro et al. [33]	Retrospective cohort	11	<8	6*	1*	–	–	17	>8	12	8	–	–
Puentes et al. [34]	Retrospective cohort	32	<7	–	8*	–	–	115	>7	–	34	–	–
Rizk et al. [35]	Prospective cohort	1577	<7	861*	–	–	–	1527	>7	1118	–	–	–
Rodrigues et al. [36]	Prospective cohort	51	<7	33*	–	12 ± 1*	16 ± 1*	55	>7	53	–	32 ± 3	37 ± 4
Rumback et al. [37]	RCT	60	<2	5*	19*	7.6 ± 4*	4.8 ± 1.4*	60	>14	15	37	17.4 ± 5.3	16.2 ± 3.8
Scales et al. [38]	Retrospective cohort	1081	<9	–	426	–	–	4773	>13	–	1768	–	–
Tong et al. [40]	Case series	128	<7	3*	8*	21.47 ± 1.86*	17.52 ± 1.38*	464	>7	15	71	39.33 ± 1.33	26.27 ± 0.73
Villwock et al. [41]	Retrospective cohort	5591	<10	347*	699	–	29.1 ± 24.4*	7574	>10	644	894	–	36.8 ± 26
Villwock and Jones [42]	Retrospective cohort	53,749	<10	2429*	8947*	–	24 ± 9.6*	71,244	>10	3576	15,466	–	33 ± 11.6
Wang et al. [43]	Retrospective cohort	16	<10	7*	2*	14.9 ± 8.9*	–	50	>10	38	4	22.1 ± 7.6	–
Young et al. [44]	RCT	315	<4	–	139	–	13 ± 5.46	312	>10	–	141	–	13.1 ± 8.2
Yue et al. [45]	RCT	58	3	17*	–	–	–	61	15	30	–	–	–

resultaten

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REVIEW ARTICLE

Timing of tracheostomy in patients with prolonged endotracheal intubation: a systematic review

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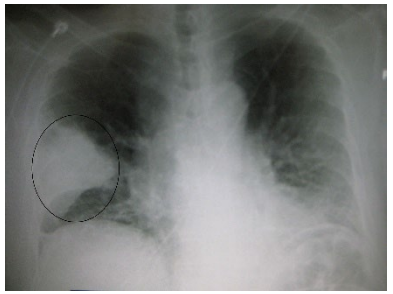
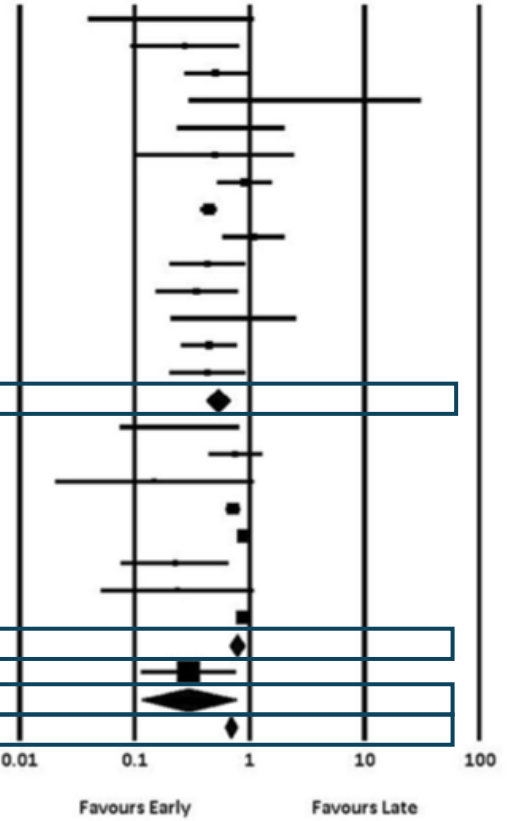
resultaten



Incidence of HAP

Group by WEEK	Study name	Odds ratio	Lower limit	Upper limit	Z-Value	p-Value
1st week	Rodriguez et al 1990	0.21	0.04	1.09	-1.86	0.06
1st week	Rumback et al 2004	0.27	0.09	0.81	-2.34	0.02
1st week	Moller et al 2005	0.51	0.27	0.95	-2.12	0.03
1st week	Barquist et al 2006	3.00	0.29	30.62	0.93	0.35
1st week	Ahmed & Kuo 2007	0.69	0.24	2.00	-0.69	0.49
1st week	Pinheiro et al 2010	0.50	0.10	2.43	-0.86	0.39
1st week	Zagli et al 2010	0.90	0.53	1.55	-0.37	0.71
1st week	Risk et al 2011	0.44	0.38	0.51	-10.69	0.00
1st week	Ganuza et al 2011	1.08	0.59	1.98	0.24	0.81
1st week	Yue et al 2012	0.43	0.20	0.91	-2.20	0.03
1st week	Koch et al 2012	0.34	0.15	0.78	-2.57	0.01
1st week	Tong et al 2012	0.72	0.20	2.52	-0.52	0.61
1st week	Terragni et al 2010	0.44	0.26	0.77	-2.90	0.00
1st week	Gessler et al 2015	0.43	0.20	0.91	-2.21	0.03
1st week		0.53	0.42	0.66	-5.48	0.00
2nd week	Wanga et al 2012	0.25	0.08	0.80	-2.33	0.02
2nd week	Devarajan et al 2012	0.75	0.44	1.27	-1.08	0.28
2nd week	Choi et al 2013	0.15	0.02	1.08	-1.88	0.06
2nd week	Villwock et al 2014	0.71	0.62	0.82	-4.92	0.00
2nd week	Villwock & Jones 2014	0.90	0.85	0.94	-4.09	0.00
2nd week	Alhajhusain et al 2014	0.22	0.08	0.65	-2.76	0.01
2nd week	Jeon et al 2014	0.24	0.05	1.08	-1.86	0.06
2nd week	Keenan et al 2015	0.88	0.81	0.95	-3.19	0.00
2nd week		0.78	0.67	0.90	-3.39	0.00
3rd week	Mohafza et al 2012	0.29	0.12	0.75	-2.57	0.01
3rd week		0.29	0.12	0.75	-2.57	0.01
Overall		0.68	0.60	0.77	-6.09	0.00

Odds ratio and 95% CI



European Archives of Oto-Rhino-Laryngology (2018) 275:679–690
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REVIEW ARTICLE

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Ahmed Adly[1] · Tamer Ali Youssef[1] · Marwa M. El-Begermy[1] · Hussein M. Younis[1]

resultaten

Mortality

Group by WEEK	Study name	Odds ratio	Lower limit	Upper limit	Z-Value	p-Value
1st week	Armstrong et al 1998	0.97	0.36	2.66	-0.06	0.96
1st week	Rumbak et al 2004	0.29	0.14	0.61	-3.24	0.00
1st week	Arabi et al 2004	1.28	0.42	3.87	0.43	0.66
1st week	Flaatten et al 2005	0.59	0.39	0.90	-2.47	0.01
1st week	Ahmed & Kuo 2007	4.70	0.49	45.03	1.34	0.18
1st week	Barquist et al 2006	0.39	0.07	2.16	-1.08	0.28
1st week	Blot et al 2008	1.10	0.52	2.33	0.26	0.80
1st week	Pinheiro et al 2010	0.11	0.01	1.08	-1.89	0.06
1st week	Zagli et al 2010	0.76	0.49	1.17	-1.24	0.21
1st week	Guanza et al 2011	0.28	0.03	2.50	-1.15	0.25
1st week	Bosel et al 2012	2.15	0.36	12.76	0.85	0.40
1st week	Tong et al 2012	0.37	0.17	0.79	-2.57	0.01
1st week	Koch et al 2012	0.89	0.34	2.32	-0.25	0.81
1st week	Young et al 2013	0.97	0.73	1.29	-0.21	0.83
1st week	Alali et al 2014	1.25	0.81	1.94	1.00	0.32
1st week	Gessler et al 2015	1.05	0.26	4.18	0.07	0.94
1st week	Puentes et al 2016	0.79	0.32	1.94	-0.50	0.61
1st week	Mehta et al 2016	0.69	0.63	0.75	-8.34	0.00
1st week		0.76	0.62	0.93	-2.62	0.01
2nd week	Scales et al 2008	1.11	0.97	1.27	1.45	0.15
2nd week	Wang et al 2012	1.64	0.27	9.94	0.54	0.59
2nd week	Bickenback et al 2011	0.42	0.23	0.77	-2.82	0.00
2nd week	Devarajan et al 2012	0.39	0.22	0.71	-3.12	0.00
2nd week	Husseinian et al 2013	0.73	0.70	0.77	-12.30	0.00
2nd week	Huang et al 2013	0.58	0.06	5.81	-0.47	0.64
2nd week	Ben-avi et al 2014	1.17	0.55	2.47	0.41	0.68
2nd week	Villwock et al 2014	1.07	0.96	1.19	1.21	0.22
2nd week	Villwock & Jones 2014	0.72	0.70	0.74	-22.37	0.00
2nd week	Alhajhusain et al 2014	0.26	0.09	0.75	-2.50	0.01
2nd week	Jeon et al 2014	0.72	0.14	3.74	-0.39	0.70
2nd week	Holloway et al 2015	2.09	0.12	34.87	0.51	0.61
2nd week	Keenan et al 2015	1.23	1.07	1.41	2.93	0.00
2nd week		0.85	0.72	0.99	-2.03	0.04
3rd week	Mohafza et al 2012	0.23	0.09	0.61	-2.97	0.00
3rd week		0.23	0.09	0.61	-2.97	0.00
Overall		0.80	0.70	0.90	-3.57	0.00

Odds ratio and 95% CI

0.01 0.1 1 10 100

Favours Early Favours Late

European Archives of Oto-Rhino-Laryngology (2018) 275:679–690
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REVIEW ARTICLE

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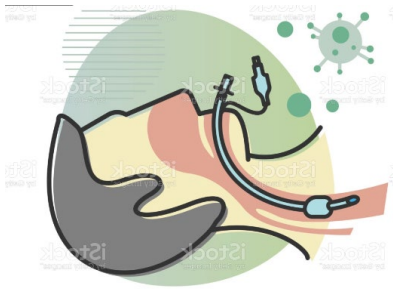
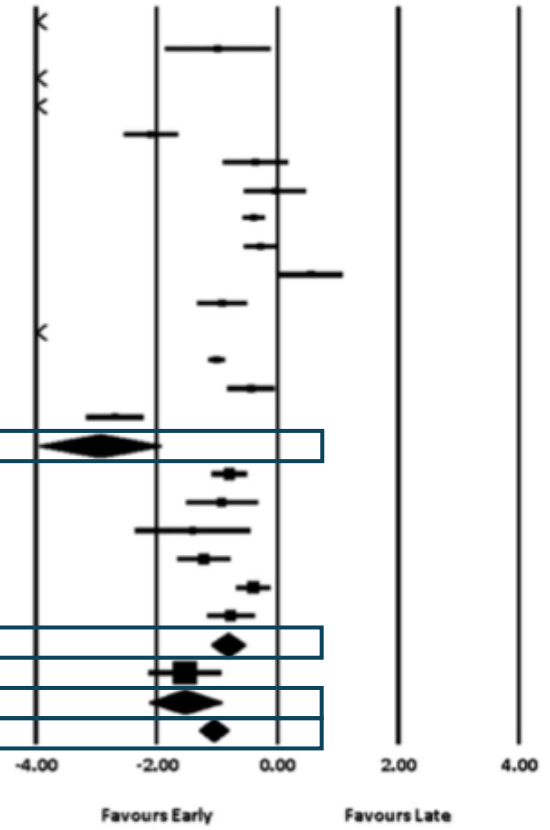
resultaten



Duration of Mechanical Ventilaton

Group by WEEK	Study name	Std diff in means	Standard error	Variance	Lower limit	Upper limit	Z-Value	p-Value
1st week	Rodriguez et al 1990	-8.81	0.64	0.40	-10.06	-7.56	-13.86	0.00
1st week	Gatti et al 2004	-0.98	0.44	0.19	-1.84	-0.12	-2.24	0.03
1st week	Arabi et al 2004	-7.11	0.48	0.23	-8.05	-6.17	-14.84	0.00
1st week	Moller et al 2005	-8.49	0.47	0.22	-9.40	-7.58	-18.24	0.00
1st week	Rumbak et al 2004	-2.09	0.23	0.05	-2.53	-1.64	-9.20	0.00
1st week	Ahmed & Kuo 2007	-0.35	0.27	0.07	-0.89	0.18	-1.30	0.19
1st week	Barquist et al 2006	-0.03	0.26	0.07	-0.54	0.48	-0.12	0.91
1st week	Zagli et al 2010	-0.38	0.09	0.01	-0.55	-0.20	-4.22	0.00
1st week	Ganuza et al 2011	-0.27	0.14	0.02	-0.53	0.00	-1.93	0.05
1st week	Bosel et al 2012	0.57	0.26	0.07	0.05	1.08	2.15	0.03
1st week	Koch et al 2012	-0.91	0.21	0.04	-1.32	-0.50	-4.32	0.00
1st week	Tong et al 2012	-12.23	0.37	0.14	-12.95	-11.51	-33.13	0.00
1st week	Alali et al 2014	-1.00	0.06	0.00	-1.12	-0.87	-15.89	0.00
1st week	Hyde et al 2014	-0.43	0.20	0.04	-0.81	-0.04	-2.17	0.03
1st week	Gesssler et al 2015	-2.68	0.24	0.06	-3.16	-2.21	-11.03	0.00
1st week		-2.94	0.52	0.27	-3.95	-1.93	-5.71	0.00
2nd week	Bickenback et al 2011	-0.79	0.15	0.02	-1.08	-0.50	-5.29	0.00
2nd week	Wang et al 2012	-0.91	0.30	0.09	-1.49	-0.32	-3.05	0.00
2nd week	Choi et al 2012	-1.39	0.49	0.24	-2.35	-0.44	-2.86	0.00
2nd week	Alhajhusain et al 2014	-1.21	0.22	0.05	-1.65	-0.78	-5.50	0.00
2nd week	Ben-avi et al 2014	-0.39	0.14	0.02	-0.67	-0.11	-2.73	0.01
2nd week	Jeon et al 2014	-0.76	0.20	0.04	-1.15	-0.37	-3.83	0.00
2nd week		-0.82	0.14	0.02	-1.09	-0.55	-5.88	0.00
3rd week	Chen et al 2016	-1.53	0.30	0.09	-2.12	-0.93	-5.05	0.00
3rd week		-1.53	0.30	0.09	-2.12	-0.93	-5.05	0.00
Overall		-1.06	0.12	0.02	-1.30	-0.82	-8.61	0.00



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REVIEW ARTICLE

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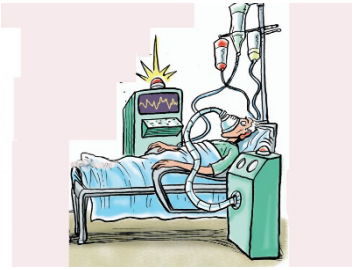
resultaten



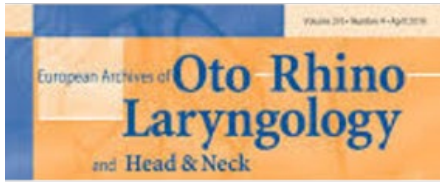
ICU Length of Stay

Group by WEEK	Study name	Std diff in means	Standard error	Variance	Lower limit	Upper limit	Z-Value	p-Value
1st week	Rodriguez et al 1990	-7.08	0.52	0.27	-8.11	-6.06	-13.52	0.00
1st week	Armstrong et al 1998	-0.65	0.17	0.03	-0.98	-0.32	-3.87	0.00
1st week	Gatti et al 2004	-1.39	0.46	0.21	-2.29	-0.49	-3.02	0.00
1st week	Arabi et al 2004	-7.89	0.52	0.27	-8.92	-6.87	-15.11	0.00
1st week	Moller et al 2005	-7.89	0.44	0.19	-8.75	-7.04	-18.09	0.00
1st week	Rumbak et al 2004	-3.98	0.32	0.10	-4.60	-3.36	-12.63	0.00
1st week	Ahmed and Kuo 2007	-0.68	0.28	0.08	-1.22	-0.14	-2.45	0.01
1st week	Barquist et al 2006	-0.05	0.26	0.07	-0.55	0.46	-0.19	0.85
1st week	Zagli et al 2010	-0.34	0.09	0.01	-0.52	-0.17	-3.89	0.00
1st week	Garnuza et al 2011	-0.40	0.14	0.02	-0.67	-0.13	-2.88	0.00
1st week	Bosel et al 2012	-0.15	0.26	0.07	-0.66	0.36	-0.58	0.56
1st week	Koch et al 2012	-1.21	0.22	0.05	-1.64	-0.79	-5.58	0.00
1st week	Tong et al 2012	-9.62	0.30	0.09	-10.20	-9.03	-32.40	0.00
1st week	Young et al 2013	-0.01	0.08	0.01	-0.17	0.14	-0.18	0.86
1st week	Alali et al 2014	-0.94	0.06	0.00	-1.07	-0.82	-15.12	0.00
1st week	Hyde et al 2014	-0.52	0.20	0.04	-0.90	-0.13	-2.62	0.01
1st week		-2.61	0.43	0.18	-3.44	-1.77	-6.10	0.00
2nd week	Bickenback et al 2011	-0.49	0.15	0.02	-0.78	-0.20	-3.35	0.00
2nd week	Wang et al 2012	-0.95	0.30	0.09	-1.53	-0.36	-3.17	0.00
2nd week	Chi et al 2012	-1.22	0.48	0.23	-2.16	-0.29	-2.57	0.01
2nd week	Devarajan et al 2012	-0.50	0.13	0.02	-0.77	-0.24	-3.74	0.00
2nd week	Alhajhusain et al 2014	-1.24	0.22	0.05	-1.67	-0.80	-5.59	0.00
2nd week	Ben-avi et al 2014	-0.18	0.14	0.02	-0.46	0.10	-1.27	0.21
2nd week	Huang et al 2013	-1.10	0.38	0.14	-1.84	-0.36	-2.90	0.00
2nd week	Jeon et al 2014	-0.69	0.20	0.04	-1.08	-0.30	-3.49	0.00
2nd week	Villwock et al 2014	-0.30	0.02	0.00	-0.34	-0.27	-17.14	0.00
2nd week	Villwock & Jones 2014	-0.83	0.01	0.00	-0.85	-0.82	-140.20	0.00
2nd week	Holloway et al 2015	-0.38	0.25	0.06	-0.87	0.11	-1.50	0.13
2nd week		-0.66	0.13	0.02	-0.91	-0.41	-5.13	0.00
Overall		-0.82	0.12	0.01	-1.06	-0.58	-6.67	0.00

Std diff in means and 95% CI

-4.00 -2.00 0.00 2.00 4.00

Favours Early Favours Late



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beperkingen

- Heterogene studies
- Gemiste studies
- Klinisch oordeel: langere beademing nodig
- Co-morbiditeit en RvO vaak onduidelijk

European Archives of Oto-Rhino-Laryngology and Head & Neck

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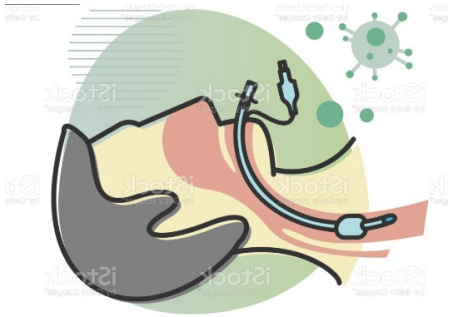
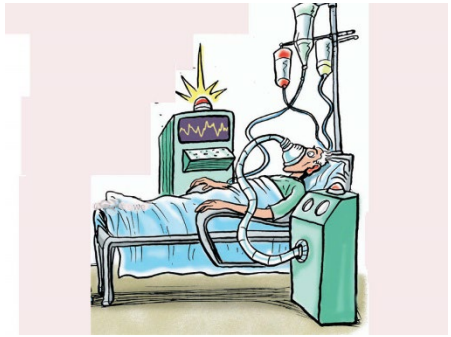
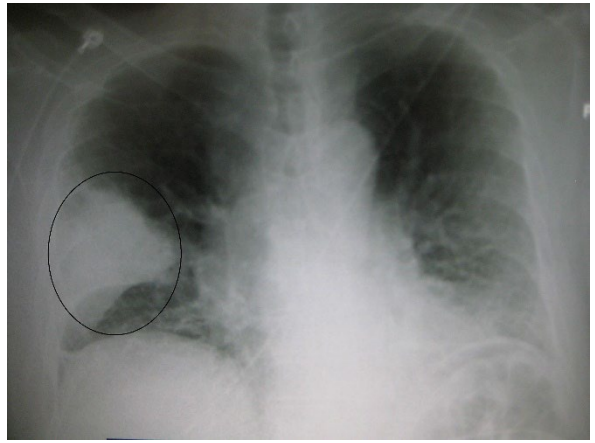
conclusie

Vroege tracheostomy geassocieerd met:



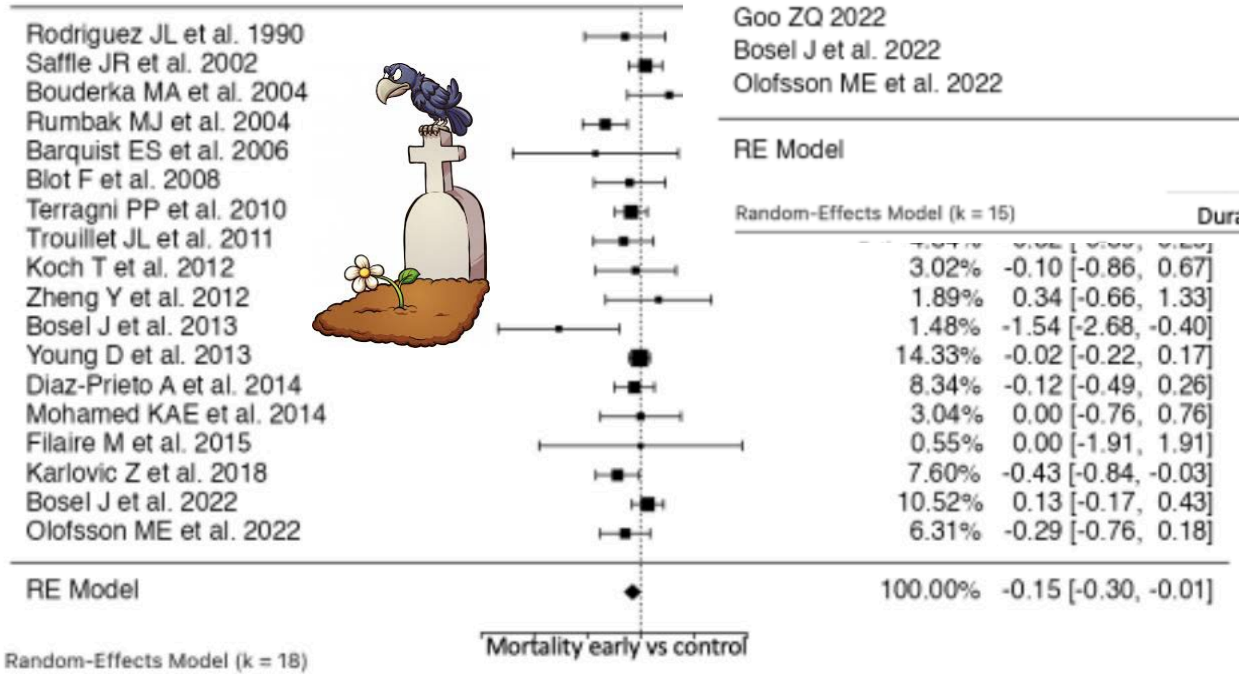


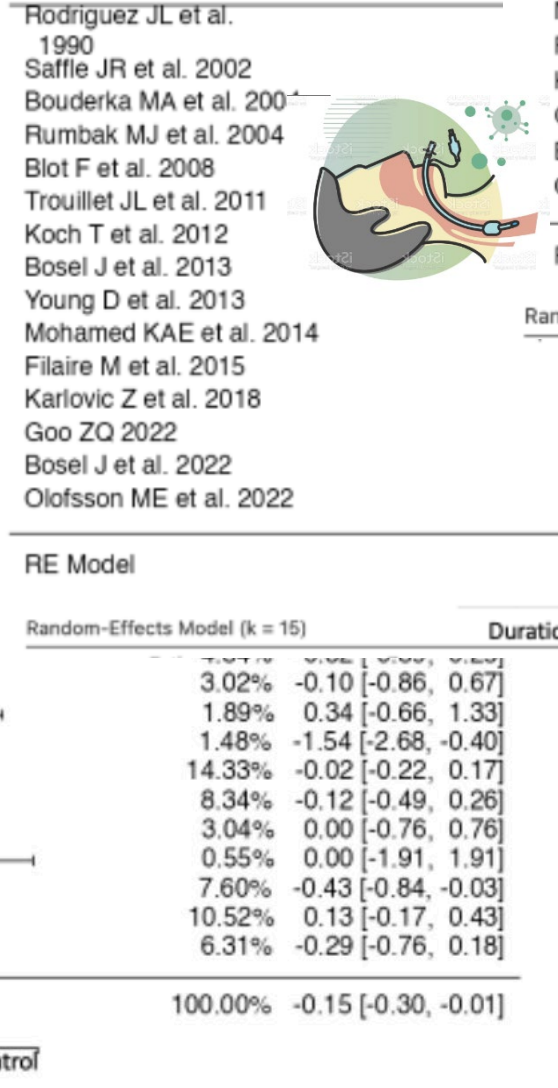


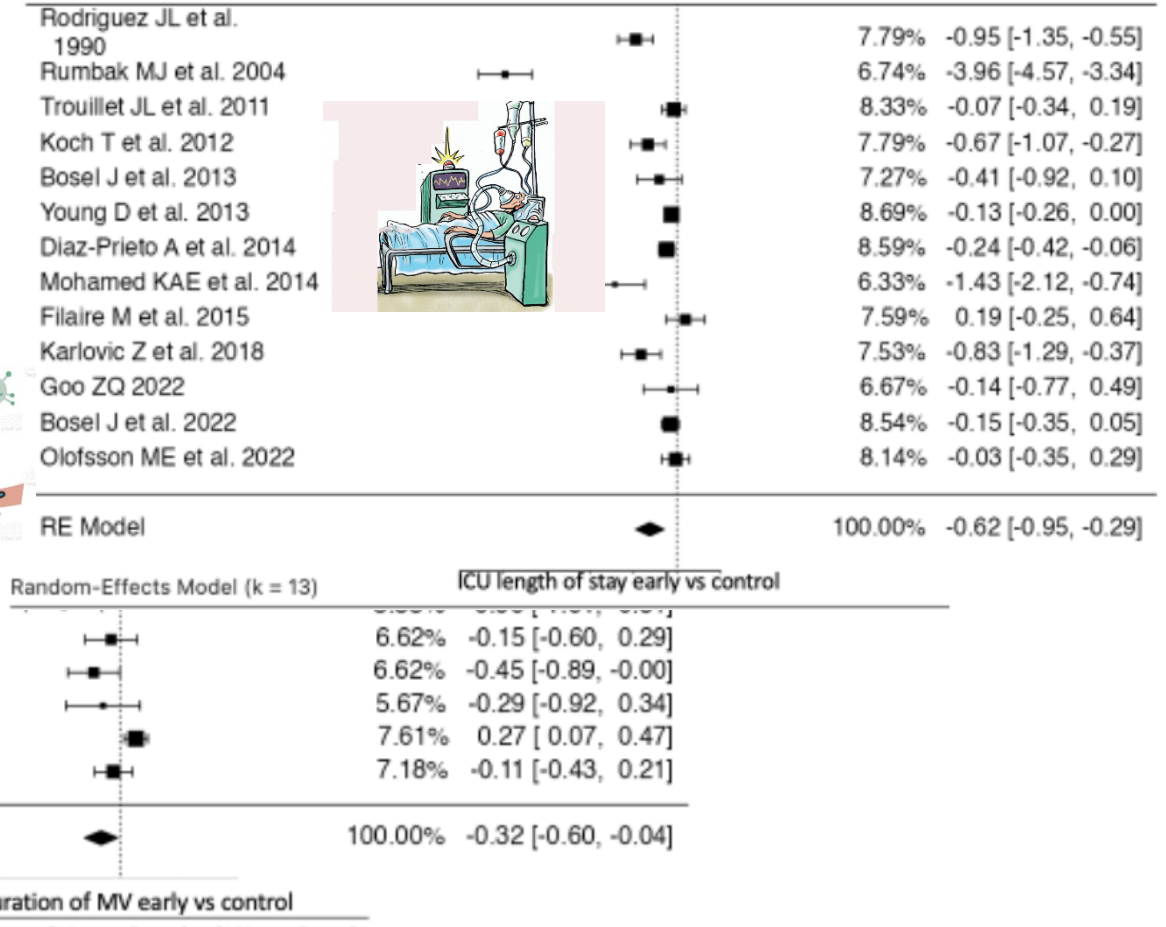
Systematic Review

Timing of Tracheostomy in ICU Patients: A Systematic Review and Meta-Analysis of Randomized Controlled Trials

Raffaele Merola [1,*], Carmine Iacovazzo [1], Stefania Troise [2], Annachiara Marra [1], Antonella Formichella [1], Giuseppe Servillo [1] and Maria Vargas [1]







BJA

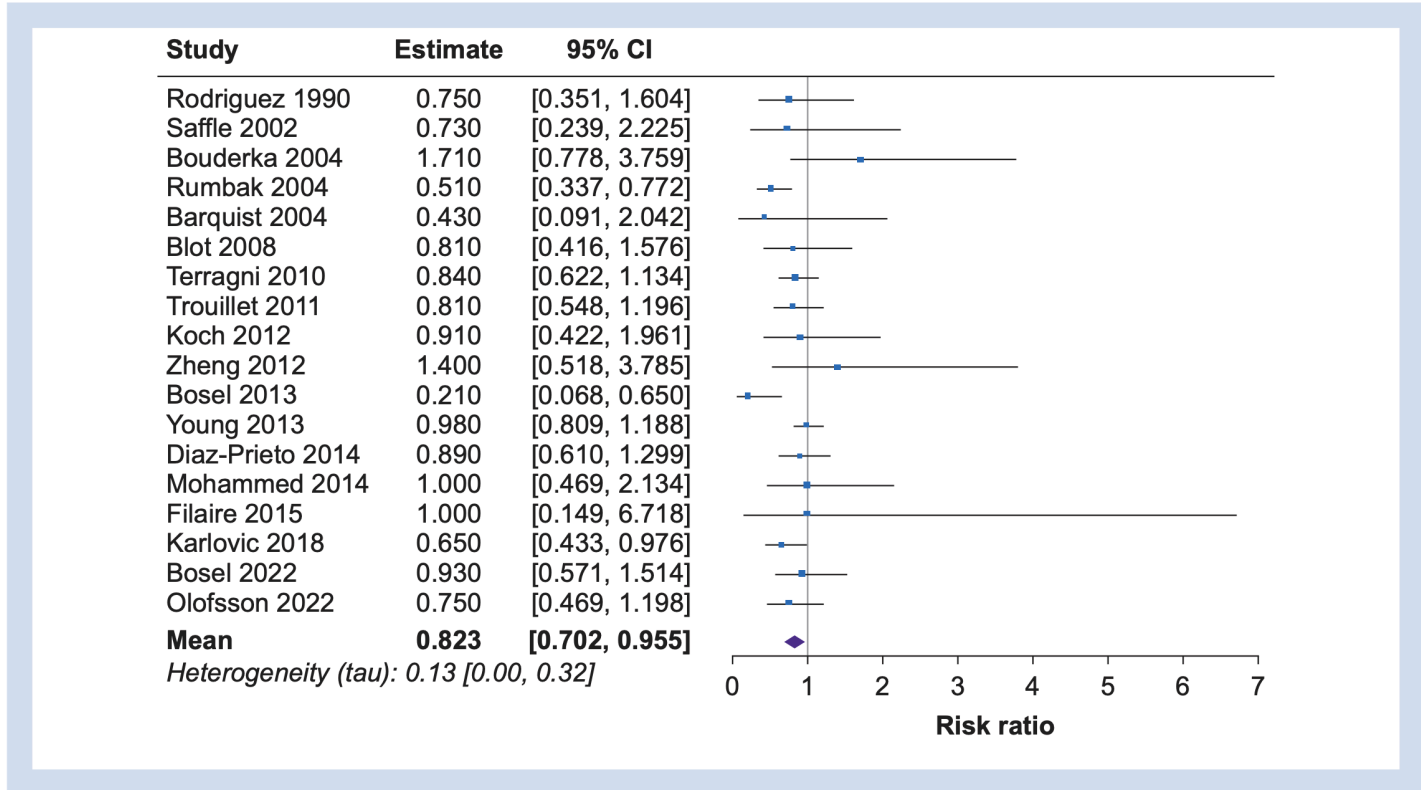
British Journal of Anaesthesia, 129 (5): 693–702 (2022)

doi: 10.1016/j.bja.2022.08.012
Advance Access Publication Date: 24 September 2022
Review Article

Bayesian analysis of a systematic review of early *versus* late tracheostomy in ICU patients

Laura Quinn[1,2,*], Tonny Veenith[3], Julian Bion[4], Karla Hemming[1], Tony Whitehouse[3] and Richard Lilford[1]

[1]Institute of Applied Health Research, University of Birmingham, Birmingham, UK, [2]NIHR Birmingham Biomedical Research Centre, University Hospitals Birmingham NHS Foundation Trust and University of Birmingham, Birmingham, UK, [3]Department of Critical Care and Anaesthesia, Queen Elizabeth Hospital Birmingham, Birmingham, UK and [4]Intensive Care Medicine, University of Birmingham, Birmingham, UK

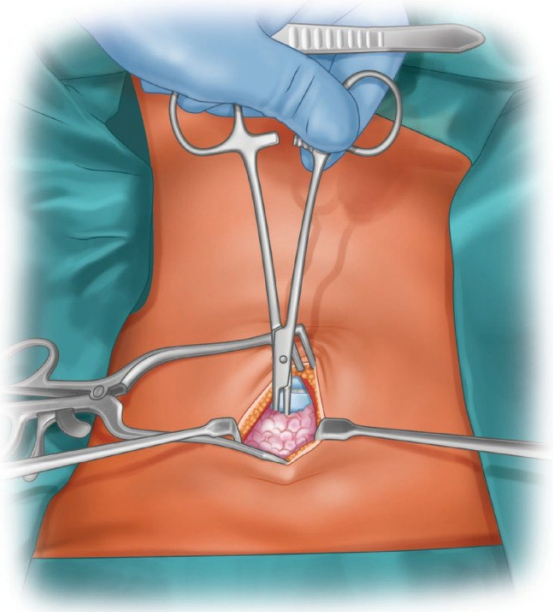


Tracheostomy: Epidemiology, Indications, Timing, Technique, and Outcomes

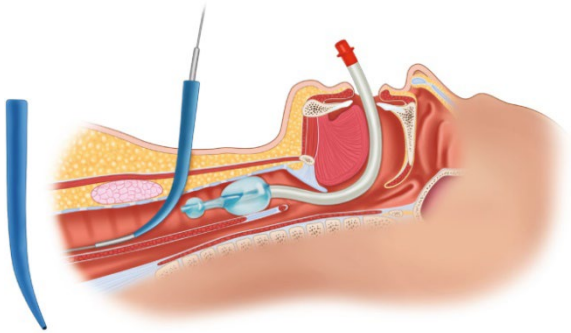
Nora H Cheung MD and Lena M Napolitano MD

In conclusion, there is no benefit to early tracheostomy in most ICU patients with acute respiratory failure, and waiting until ≥ 10 d of intubation and mechanical ventilation is recommended to determine whether ongoing respiratory support is required. Special patient populations

considered. Based on the available information, one could consider a tracheostomy as soon as it is apparent that weaning from artificial ventilation is unlikely to happen within two weeks after endotracheal intubation, in particular in neurological patients (Level C). Since this prediction is very difficult, tracheostomy generally should be delayed until at least 10 days after initiation [52].



VS



Putensen et al. Critical Care (2014) 18:544
DOI 10.1186/s13054-014-0544-7

CRITICAL CARE

RESEARCH Open Access

Percutaneous and surgical tracheostomy in critically ill adult patients: a meta-analysis

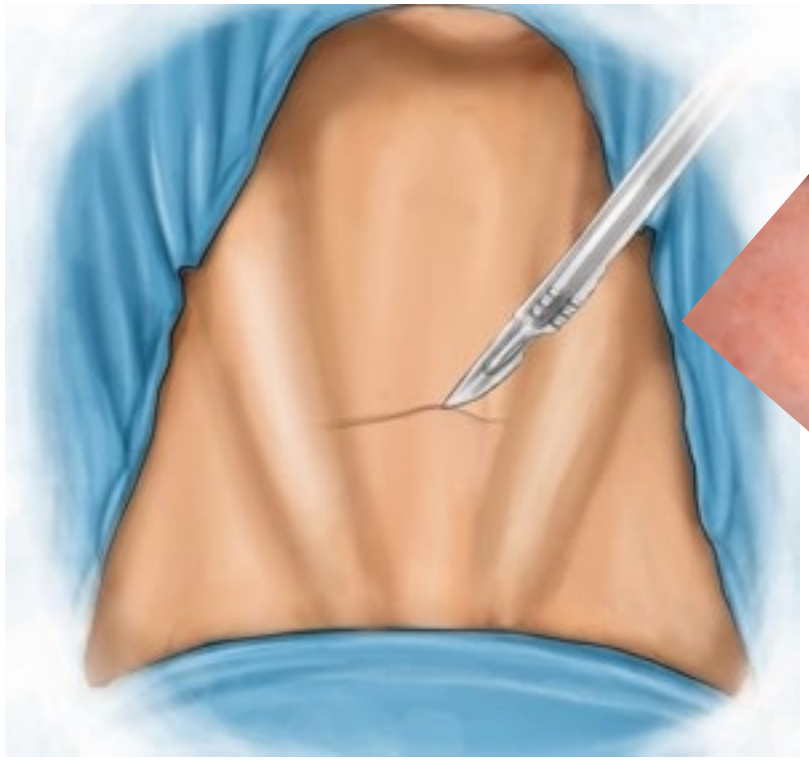
Christian Putensen[1*], Nils Theuerkauf[1], Ulf Guenther[1], Maria Vargas[2] and Paolo Pelosi[2]

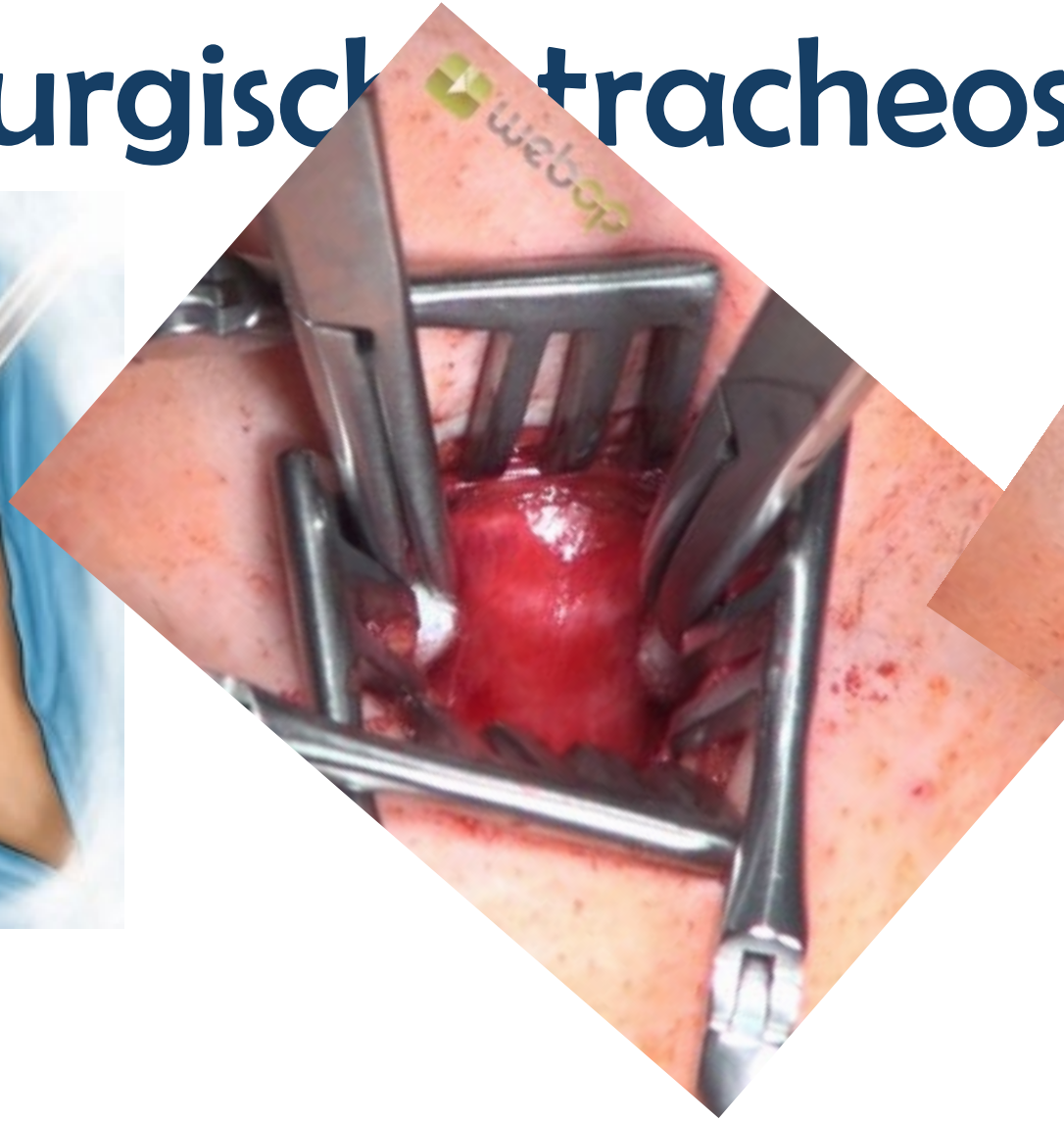
Key messages

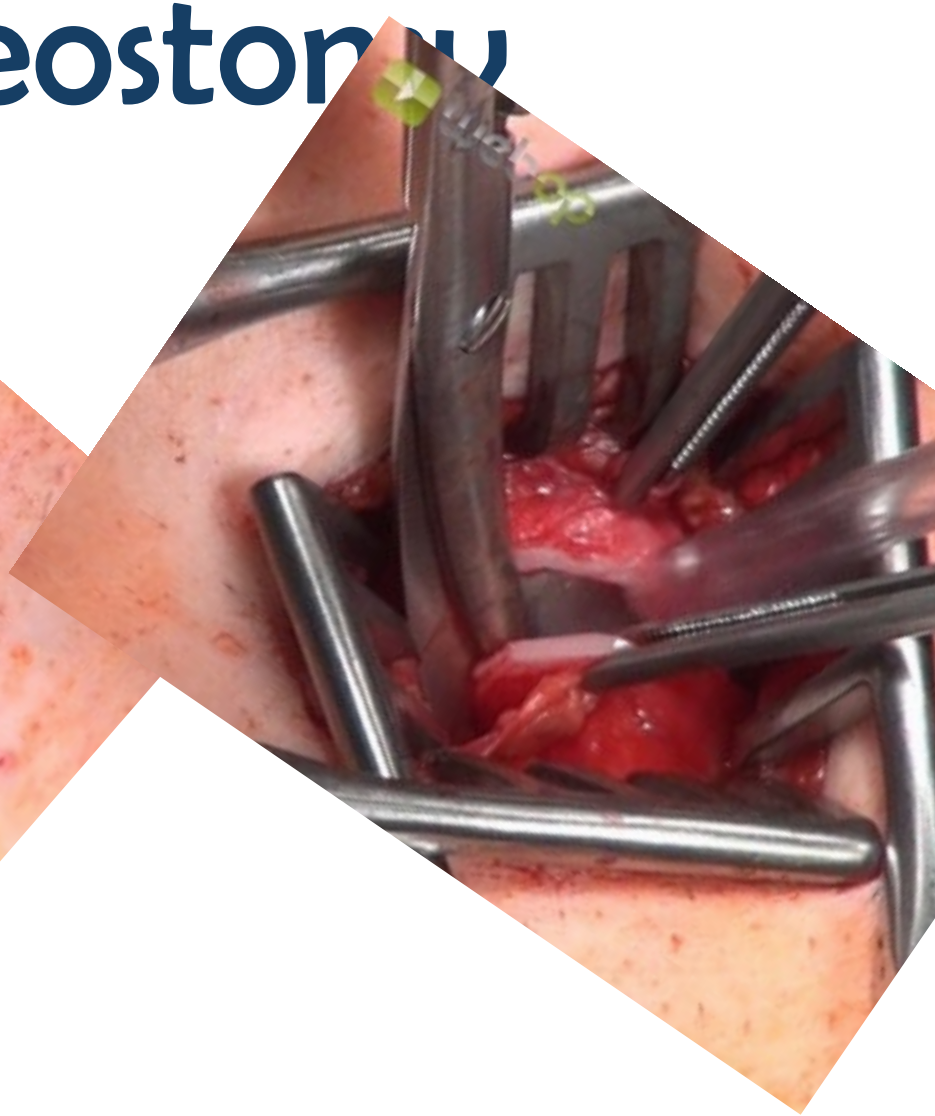
- PT can be performed faster and reduces the risk for stoma inflammation and infection when compared with ST.
- PT is associated with increased technical difficulties when compared with ST.
- Among PT techniques, MDT and SSDT were associated with the lowest risk of intraprocedural technical difficulties and major intraprocedural bleeding.
- Risk for tracheal stenosis and odds for hospital survival were not different between PT techniques and ST.

H+ MC Intensive Care

Chirurgisch tracheostomy





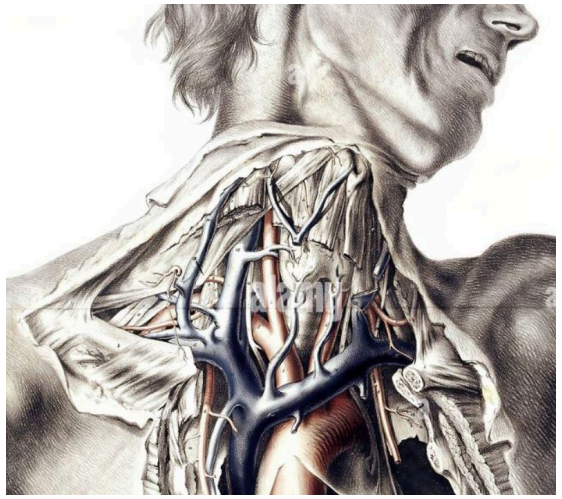


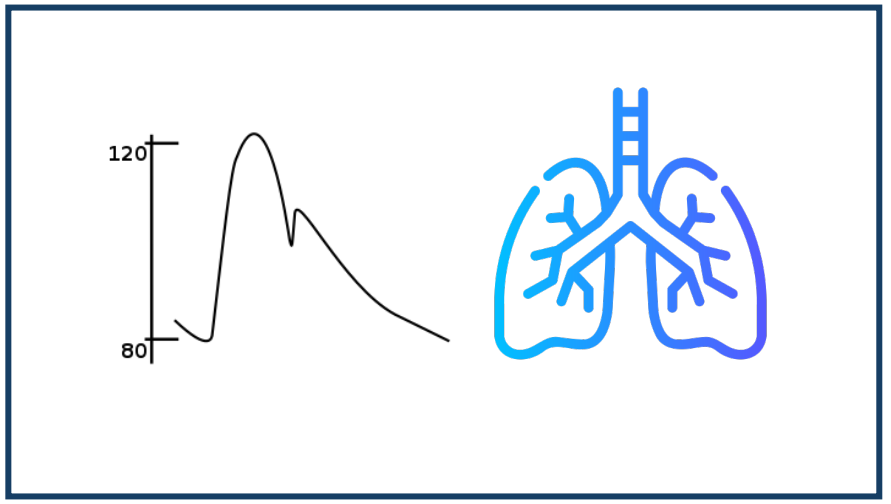
H+
MC Intensive Care

Percutane tracheostomy

Contra-Indicatie

absoluut

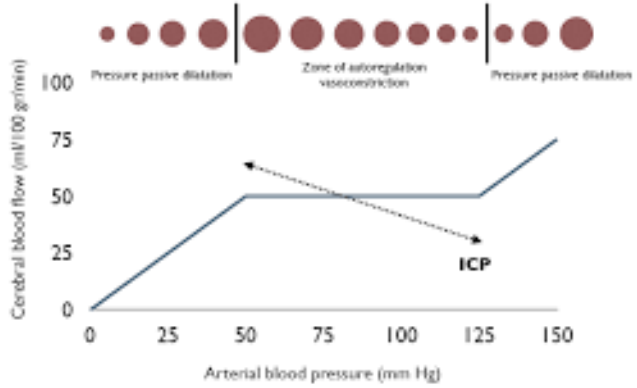


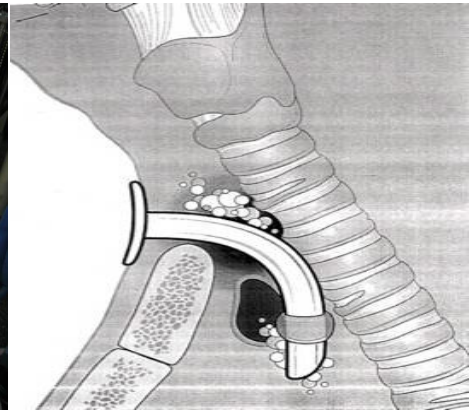


H+ MC Intensive Care

Contra-Indicatie

relatief





H+ MC Intensive Care

Wat heb je nodig?

H+ MC Intensive Care

Wat heb je nodig?

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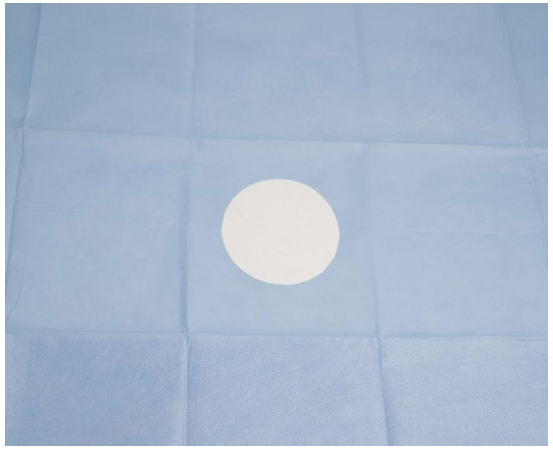
H+ MC Intensive Care

Wat heb je nodig

H+
MC Intensive Care

Wat heb je nodig



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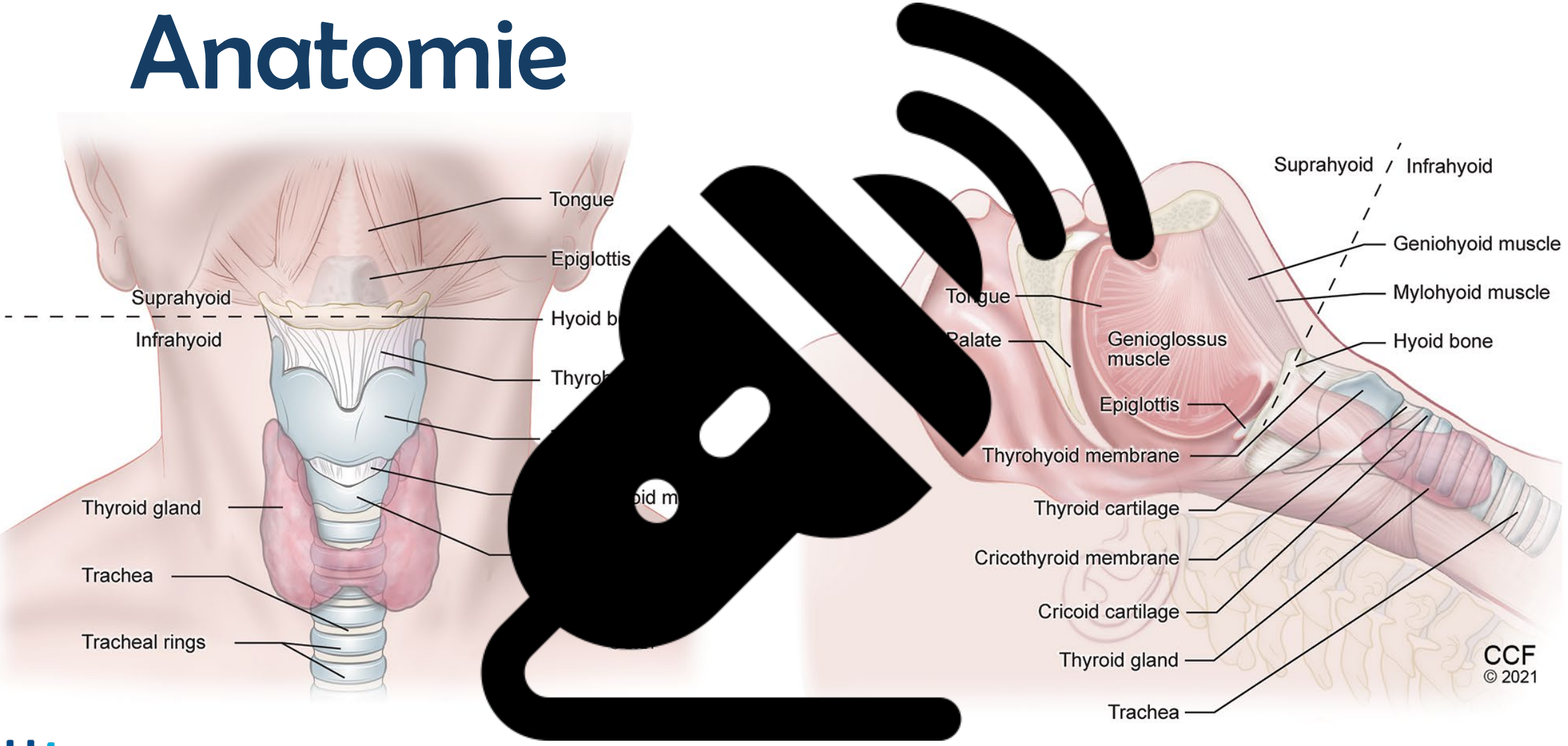
Toys for the boys

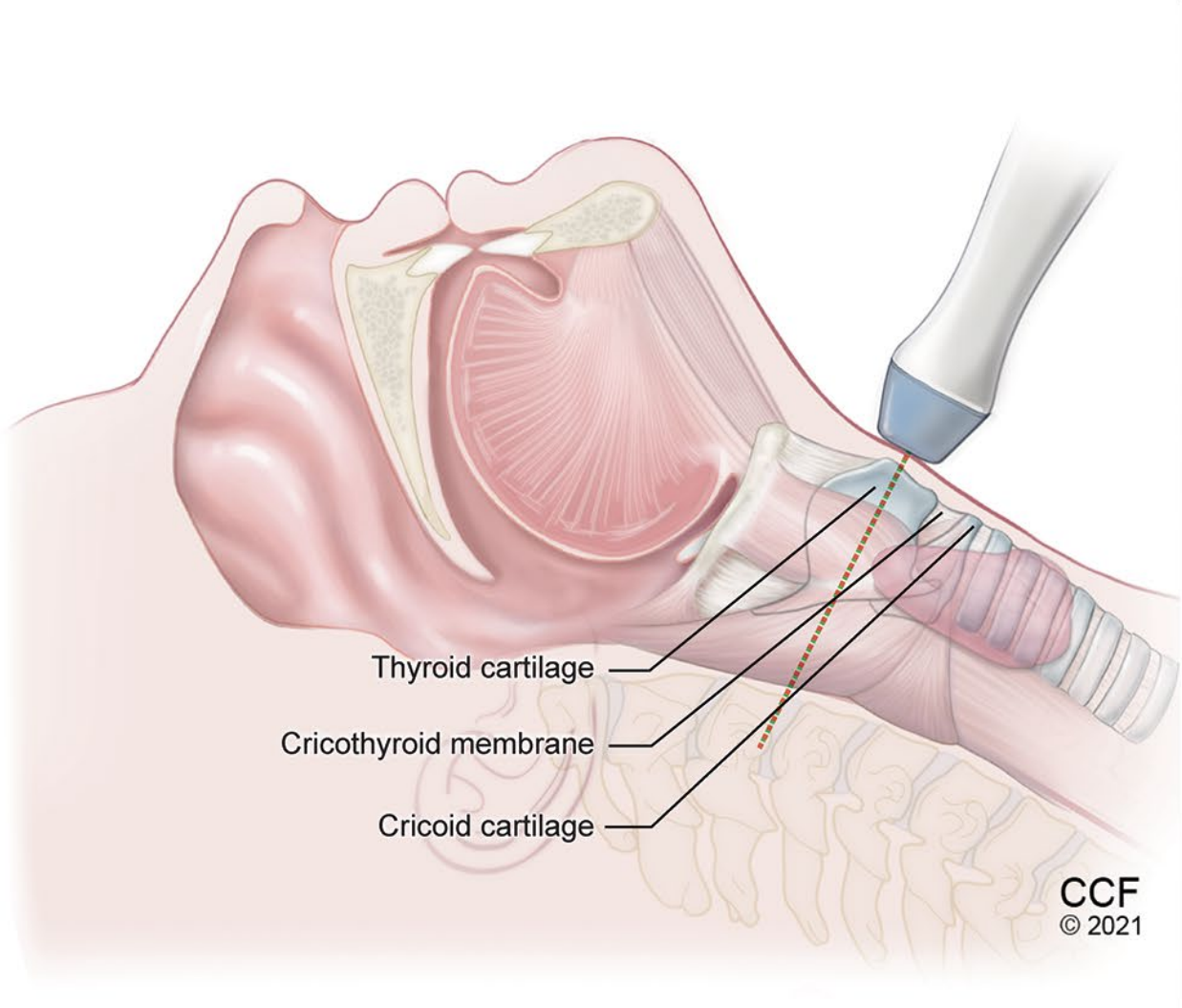
Work-up

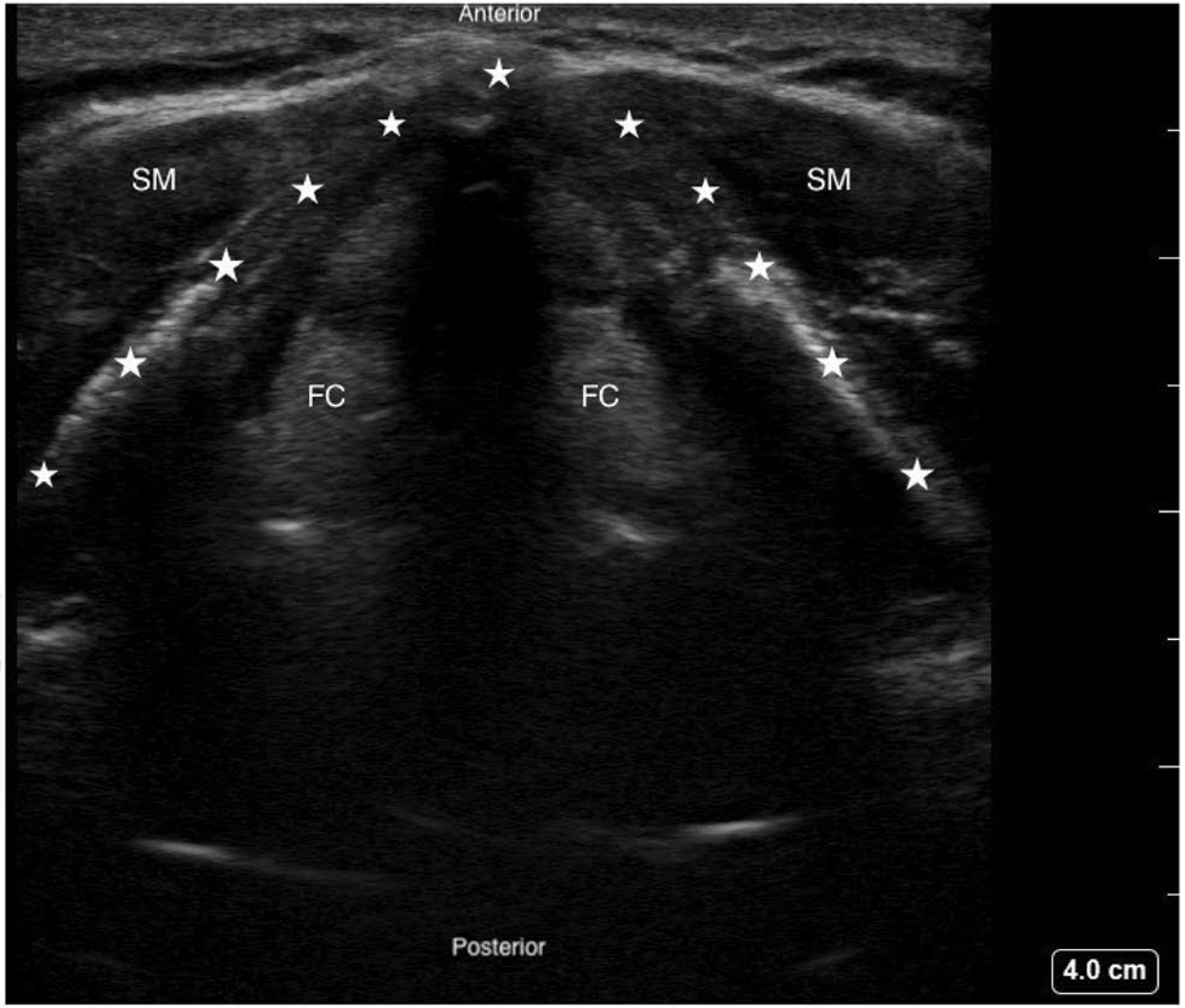
Contra-indicaties
Inspectie H/H
Echo hals

Anatomie



H+ MC Intensive Care





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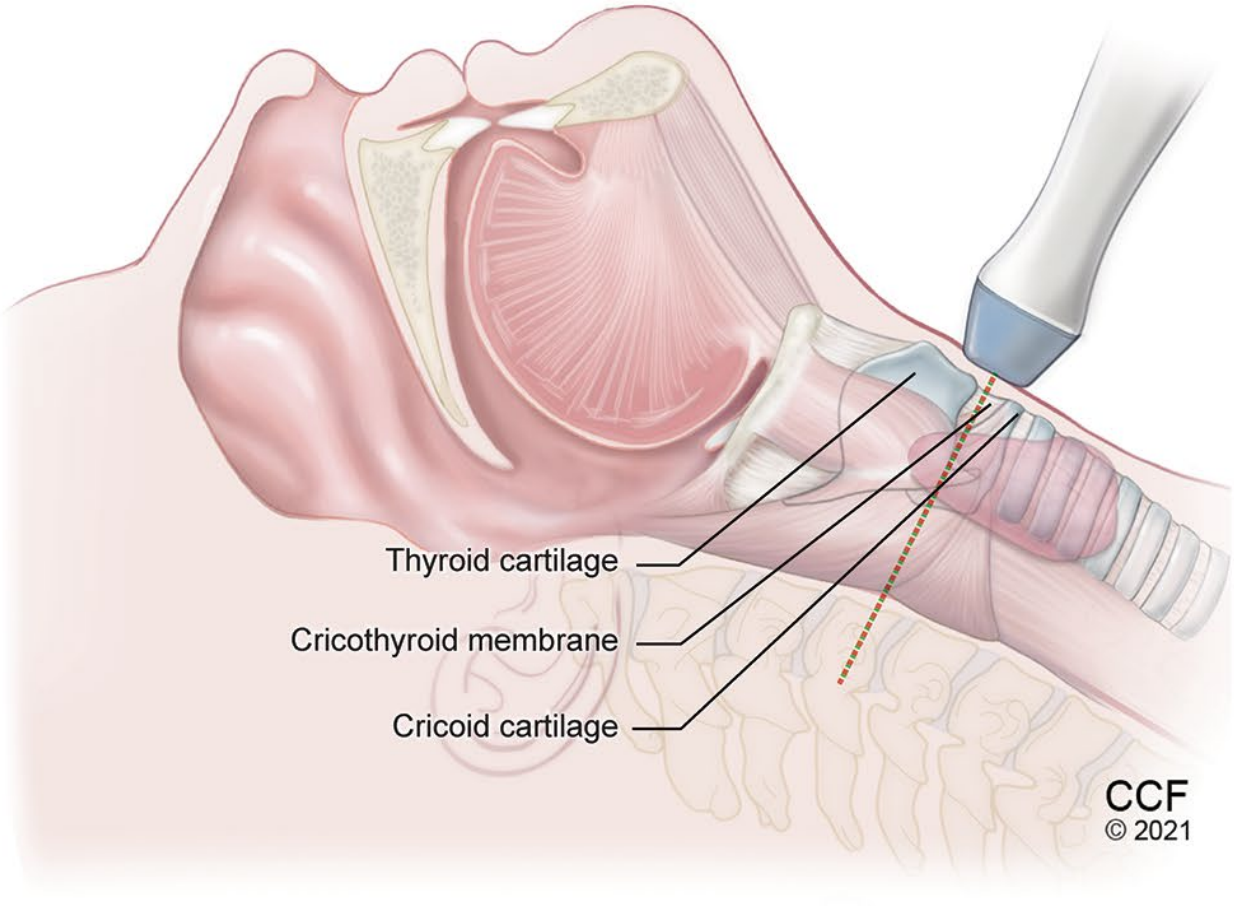
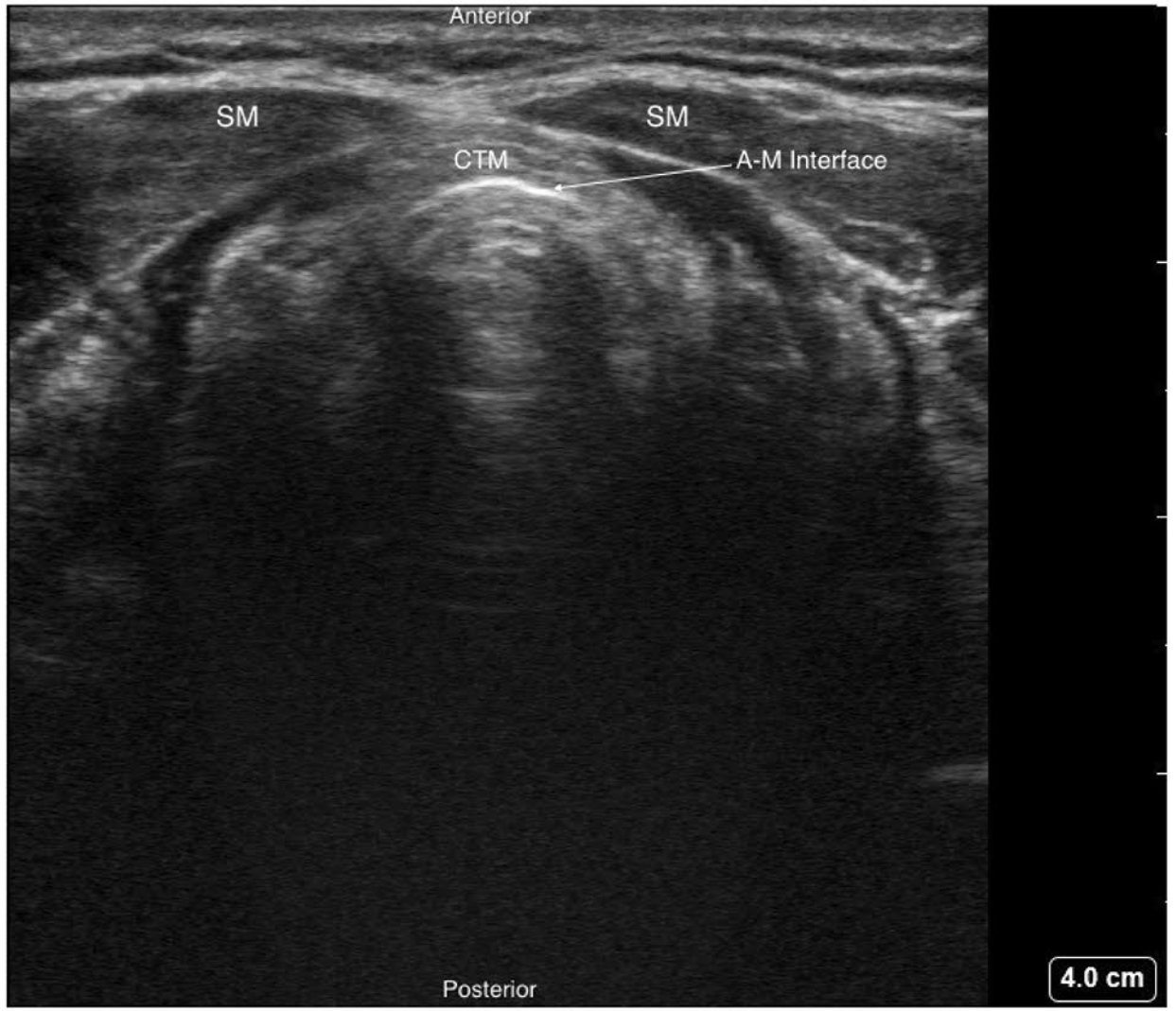
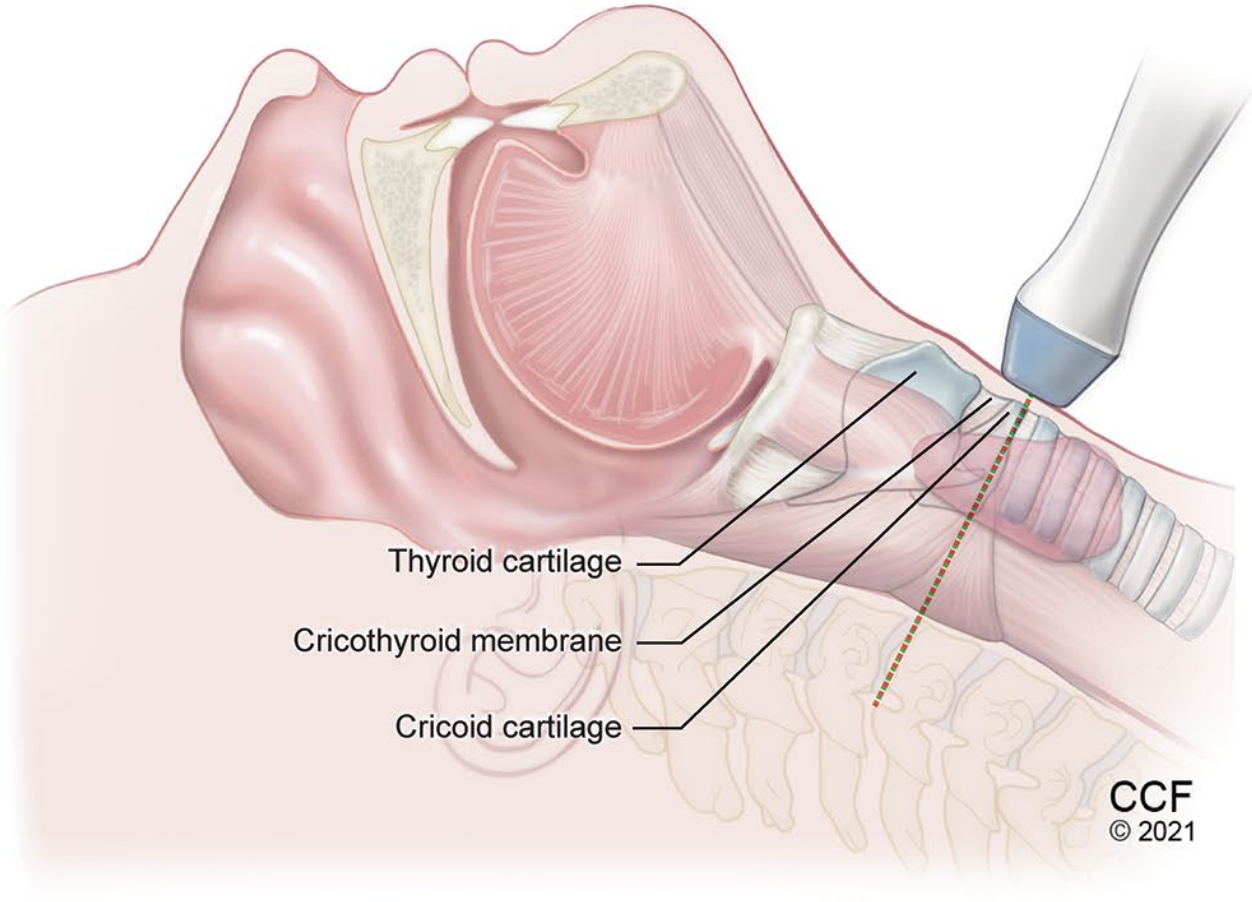
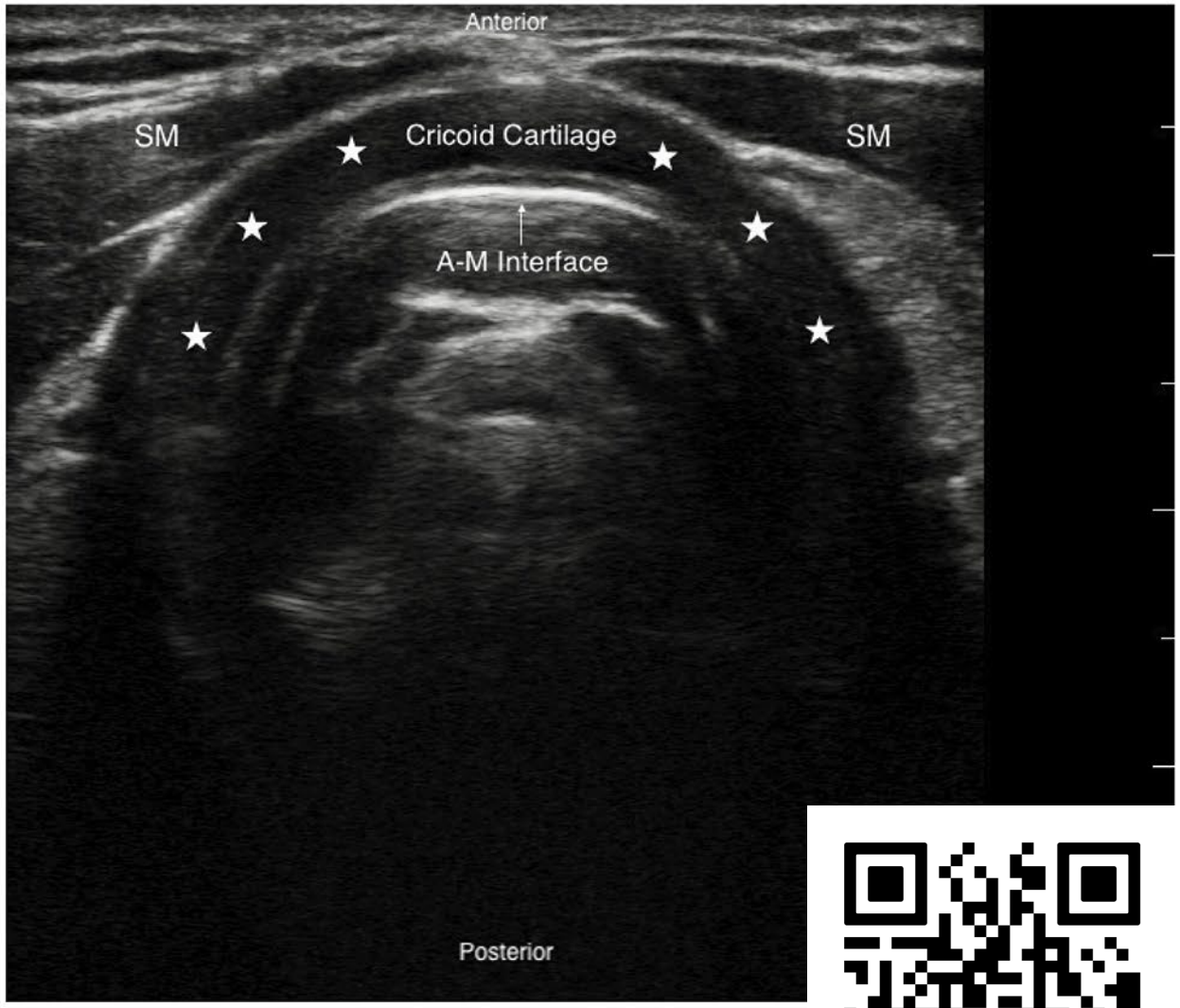




H+ MC Intensive Care





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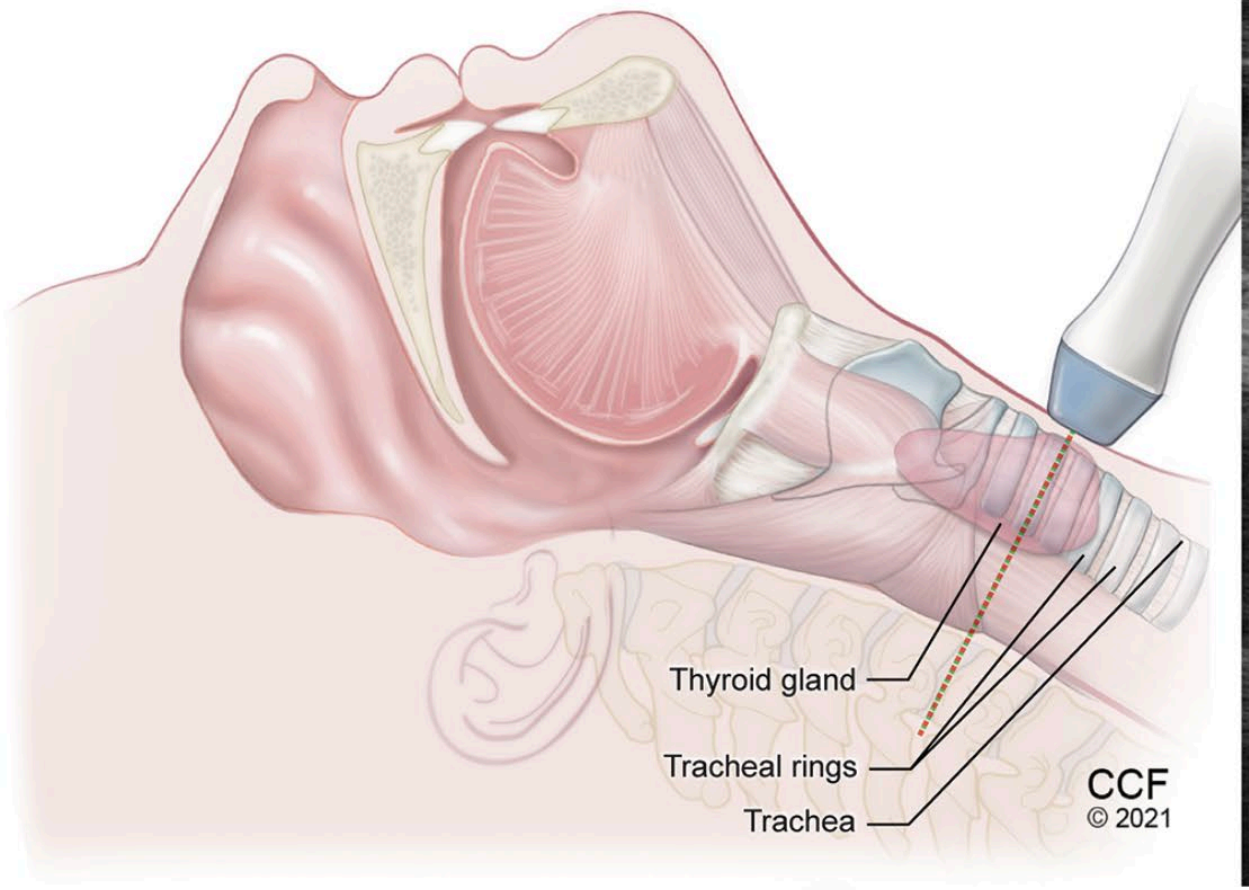
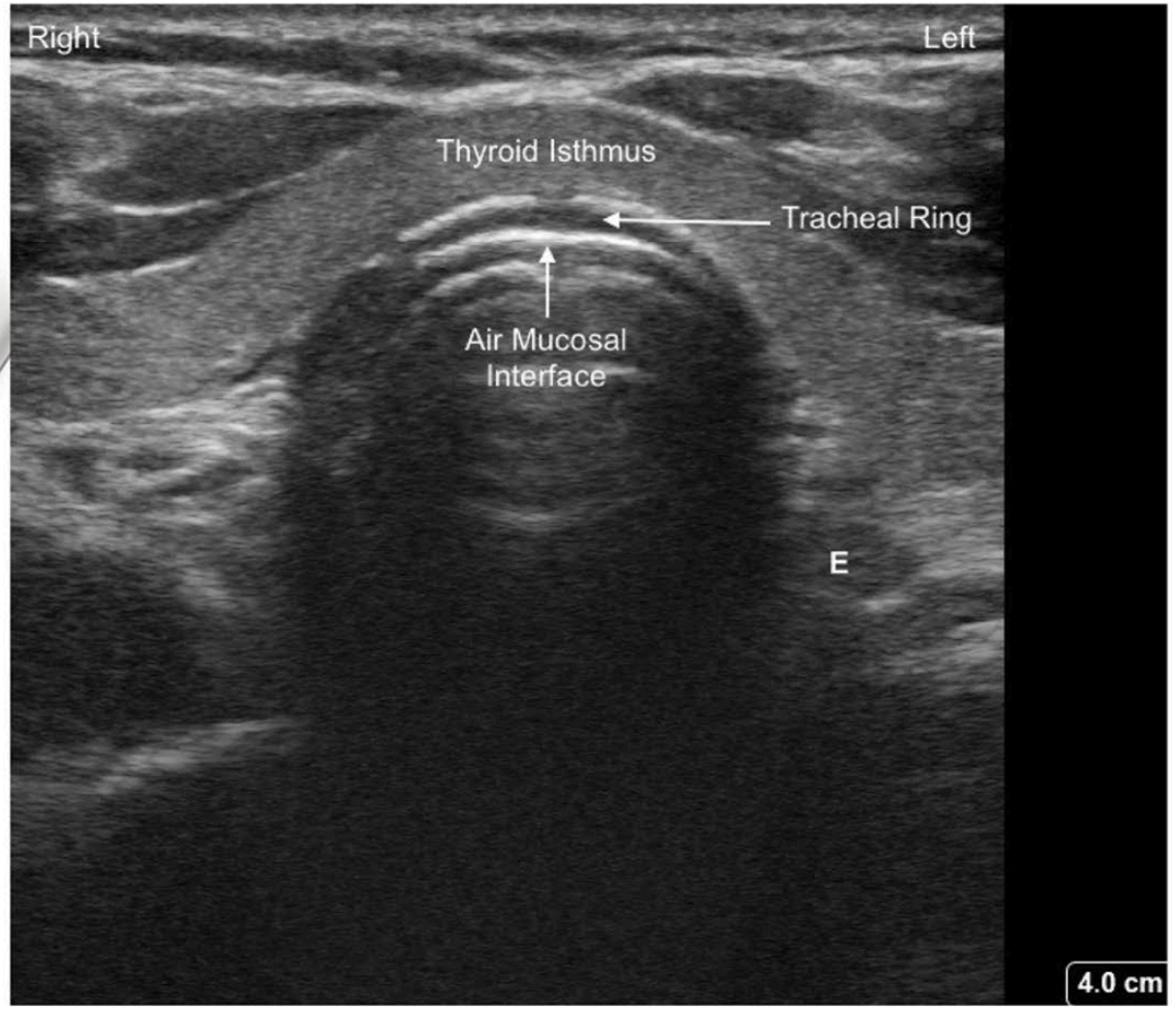
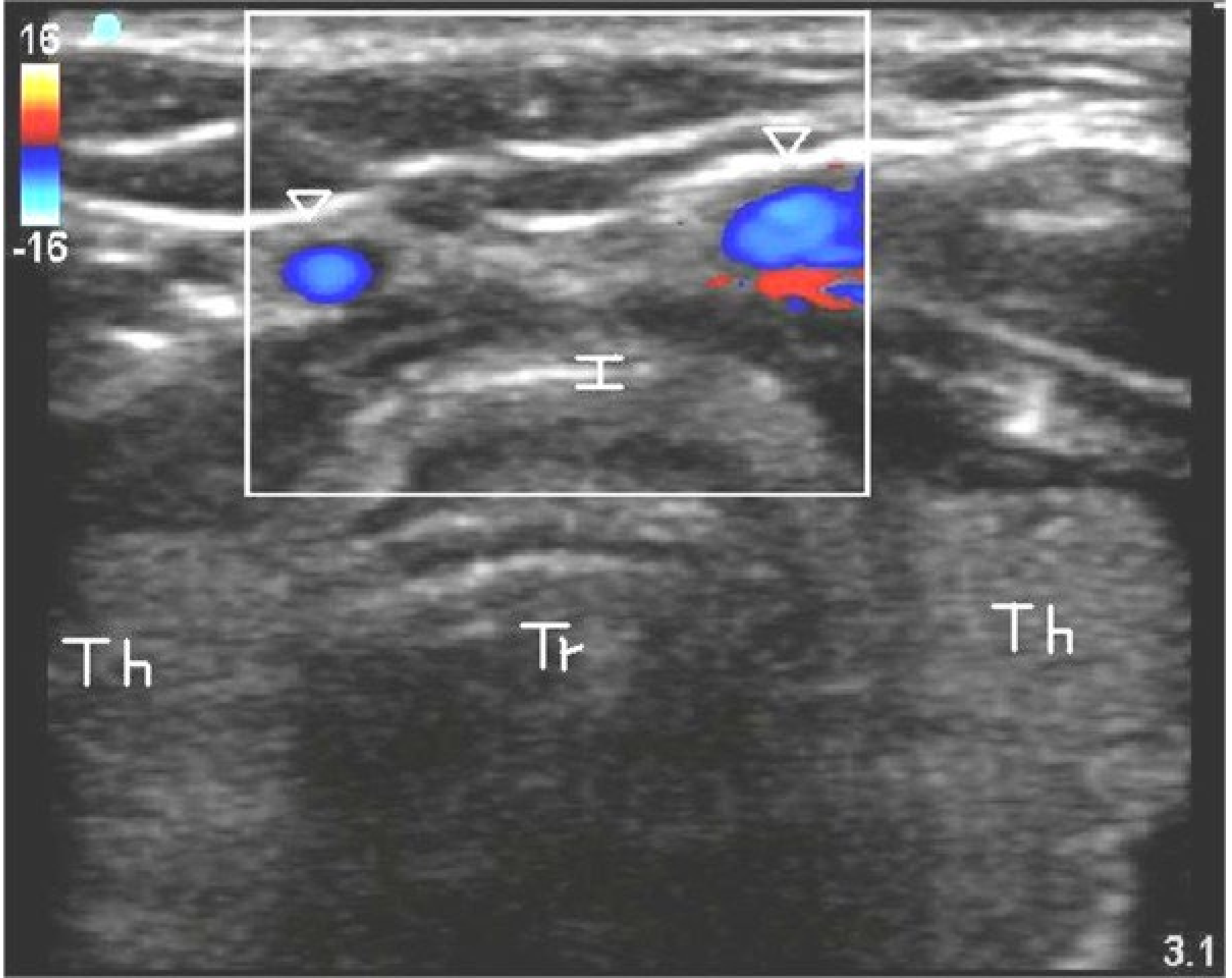
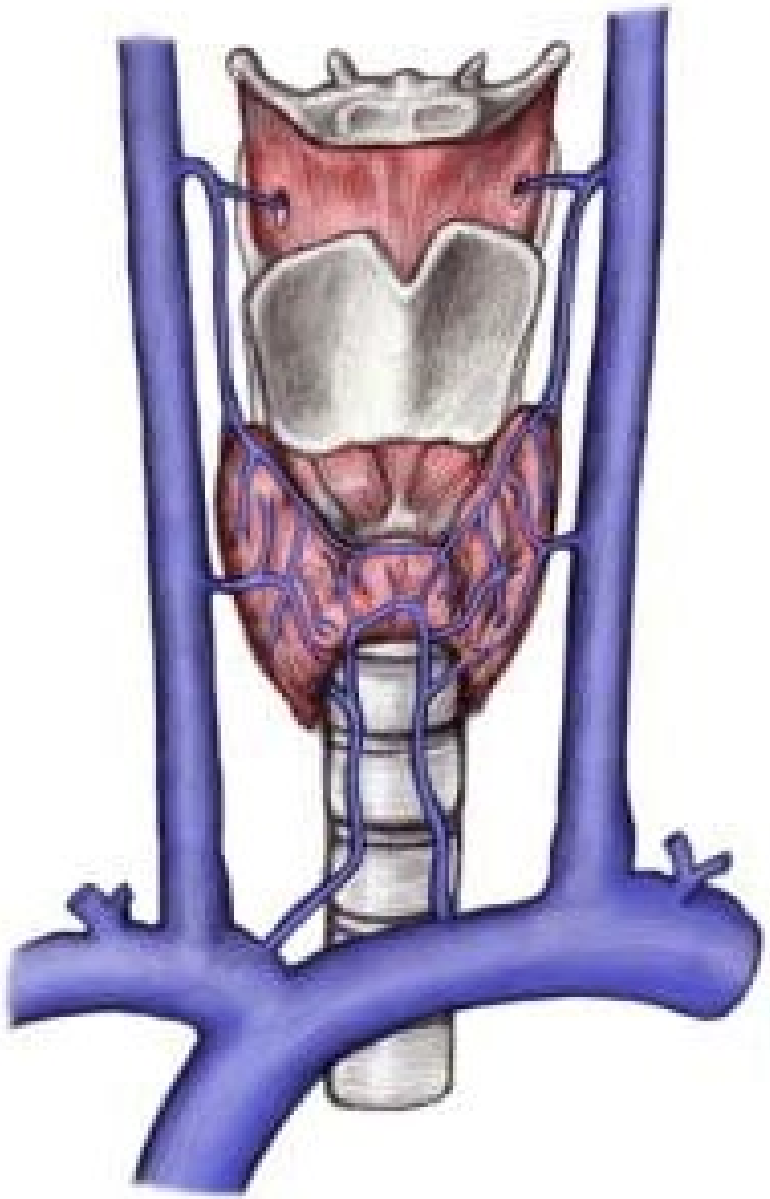




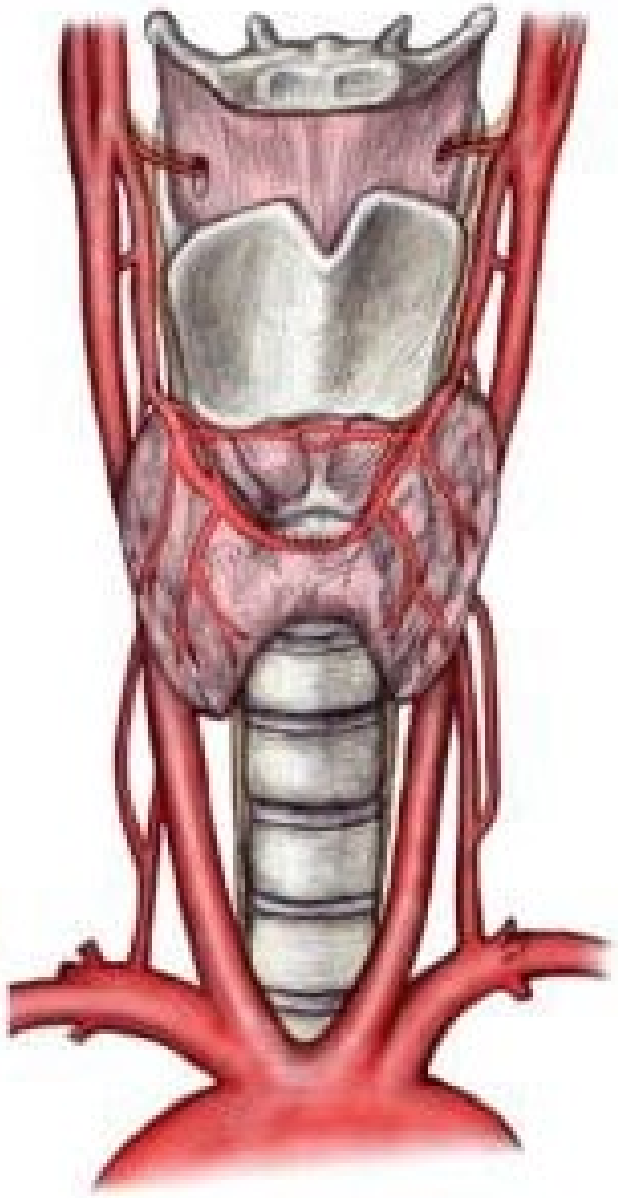
H+ MC Intensive Care



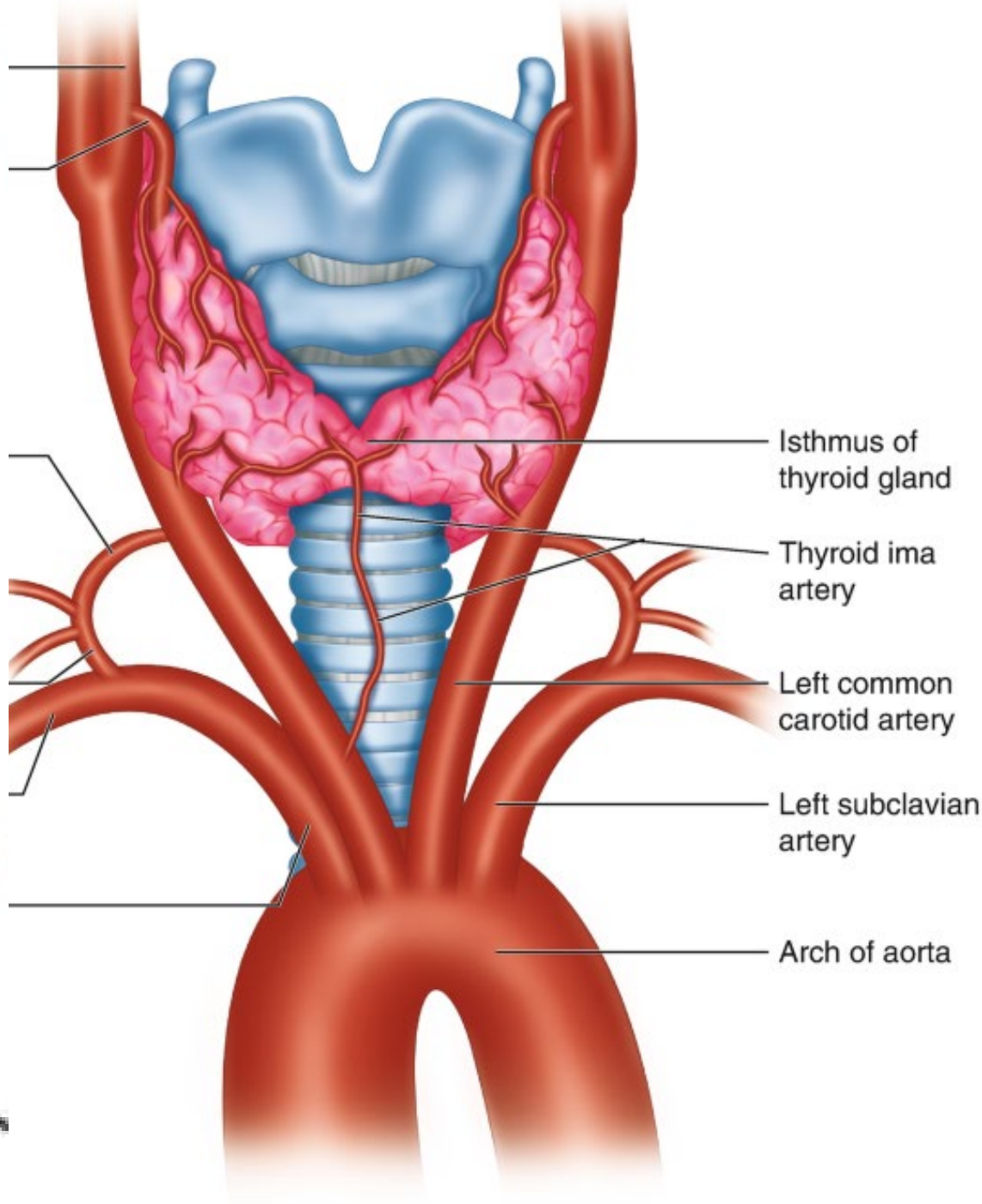
H+
MC Intensive Care

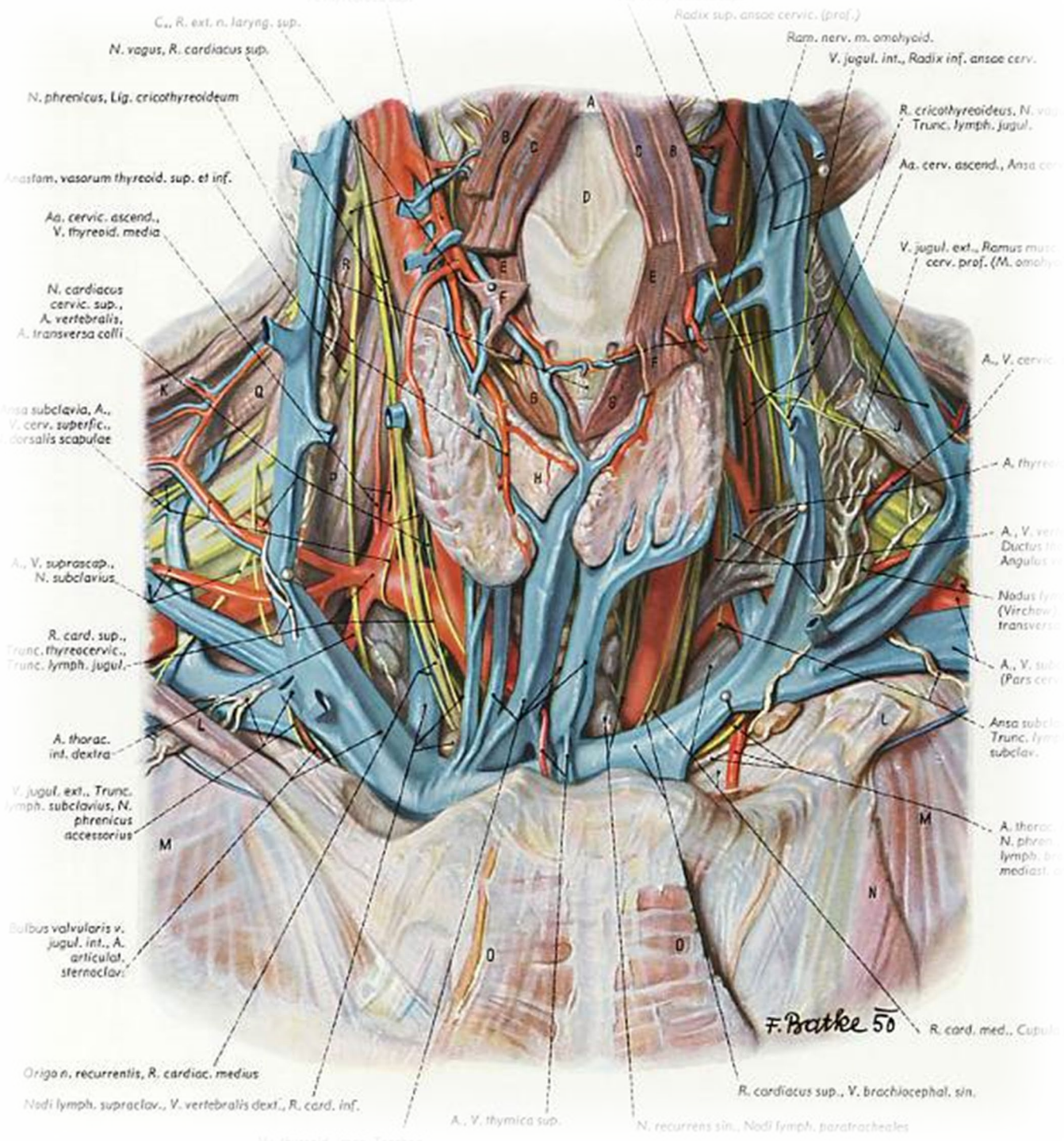


Distribution of thyroid veins.



Distribution of thyroid arteries with associated laryngeal nerve, anterior view





Waar wat en wie?

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beademing

Dr. luchtweg

Dr. trach

glidescope

bronchoscoop

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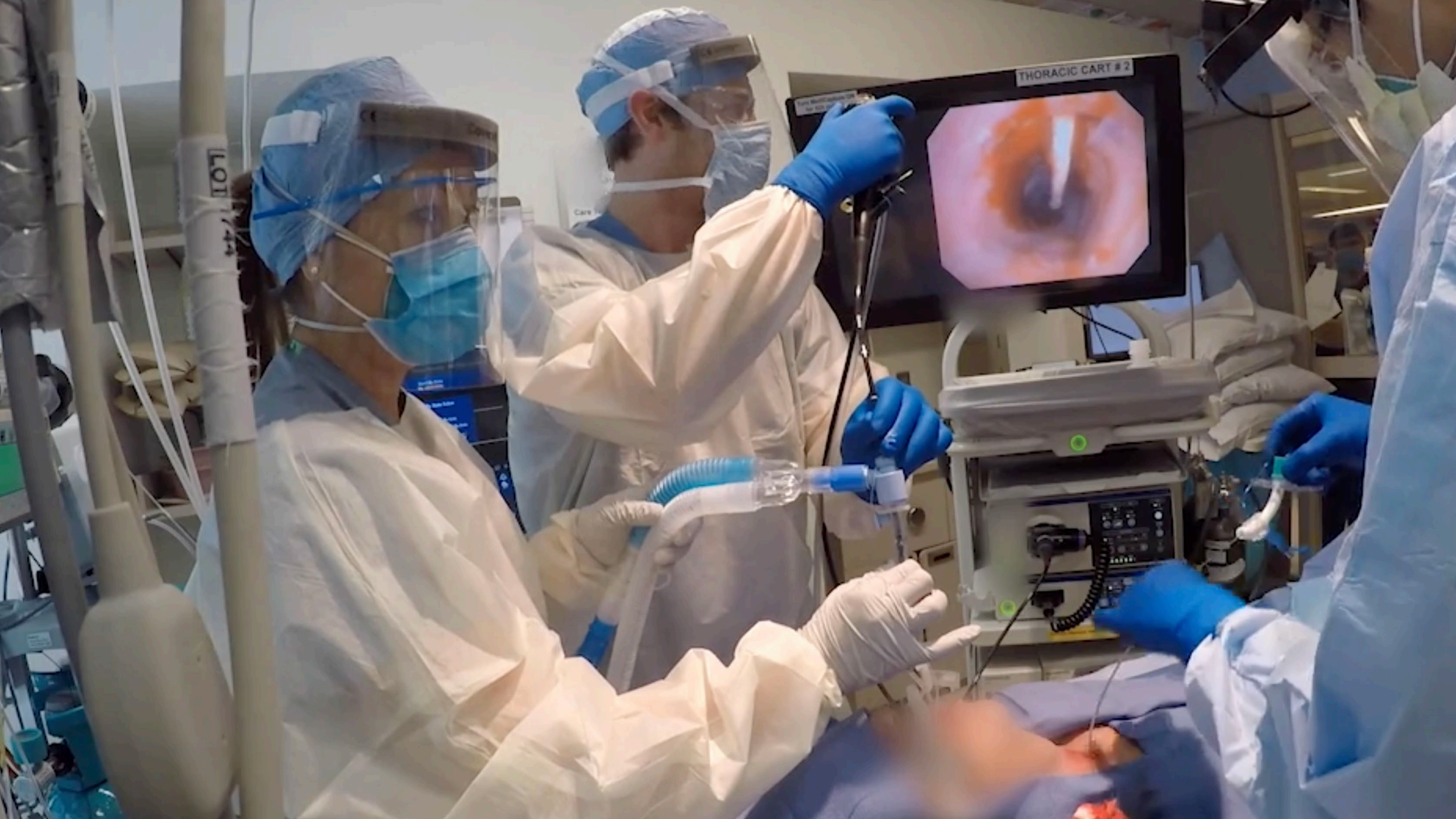

THORACIC CART # 2

Irish Journal of Medical Science (1971 -) (2019) 188:675–681
https://doi.org/10.1007/s11845-018-1881-3

ORIGINAL ARTICLE

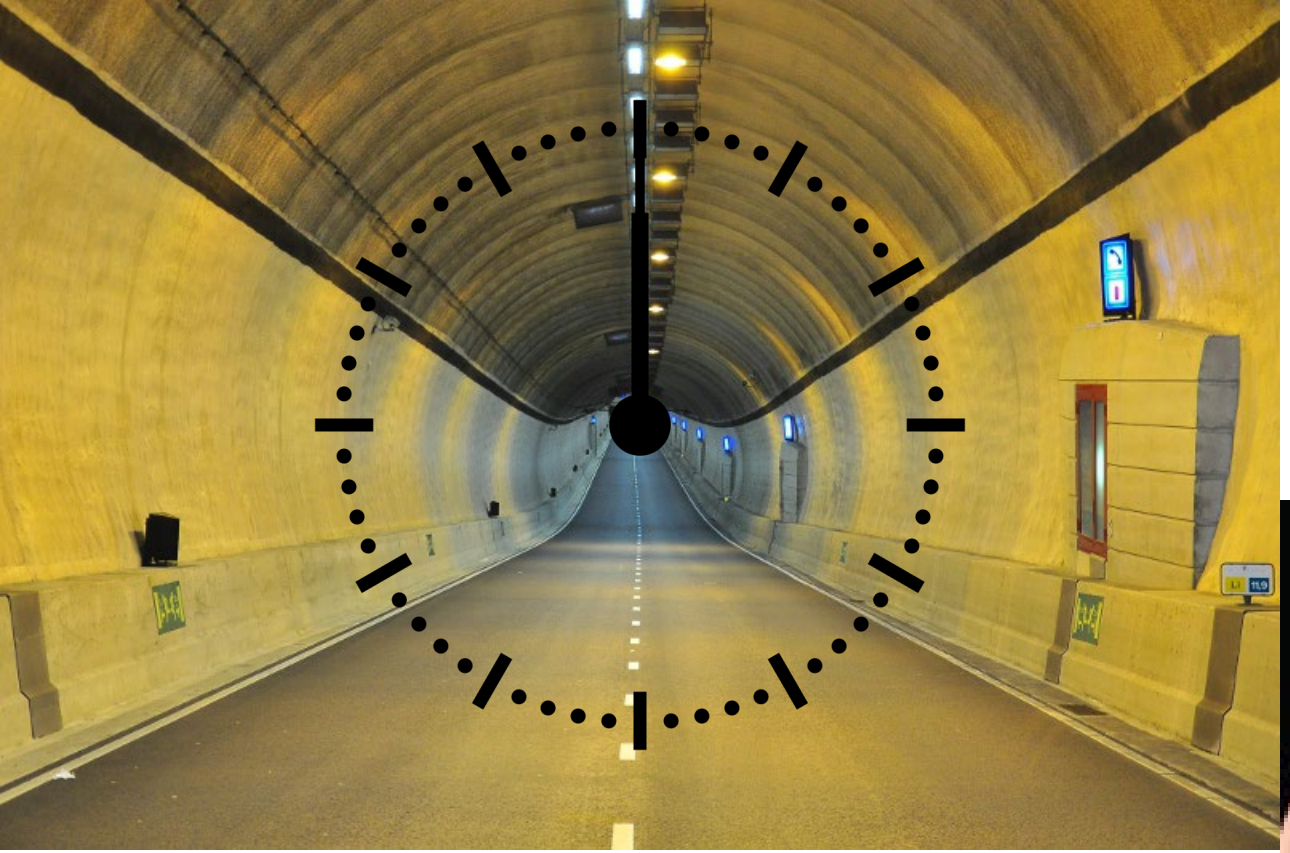
Percutaneous dilatational tracheostomy versus fibre optic bronchoscopy-guided percutaneous dilatational tracheostomy in critically ill patients: a randomised controlled trial

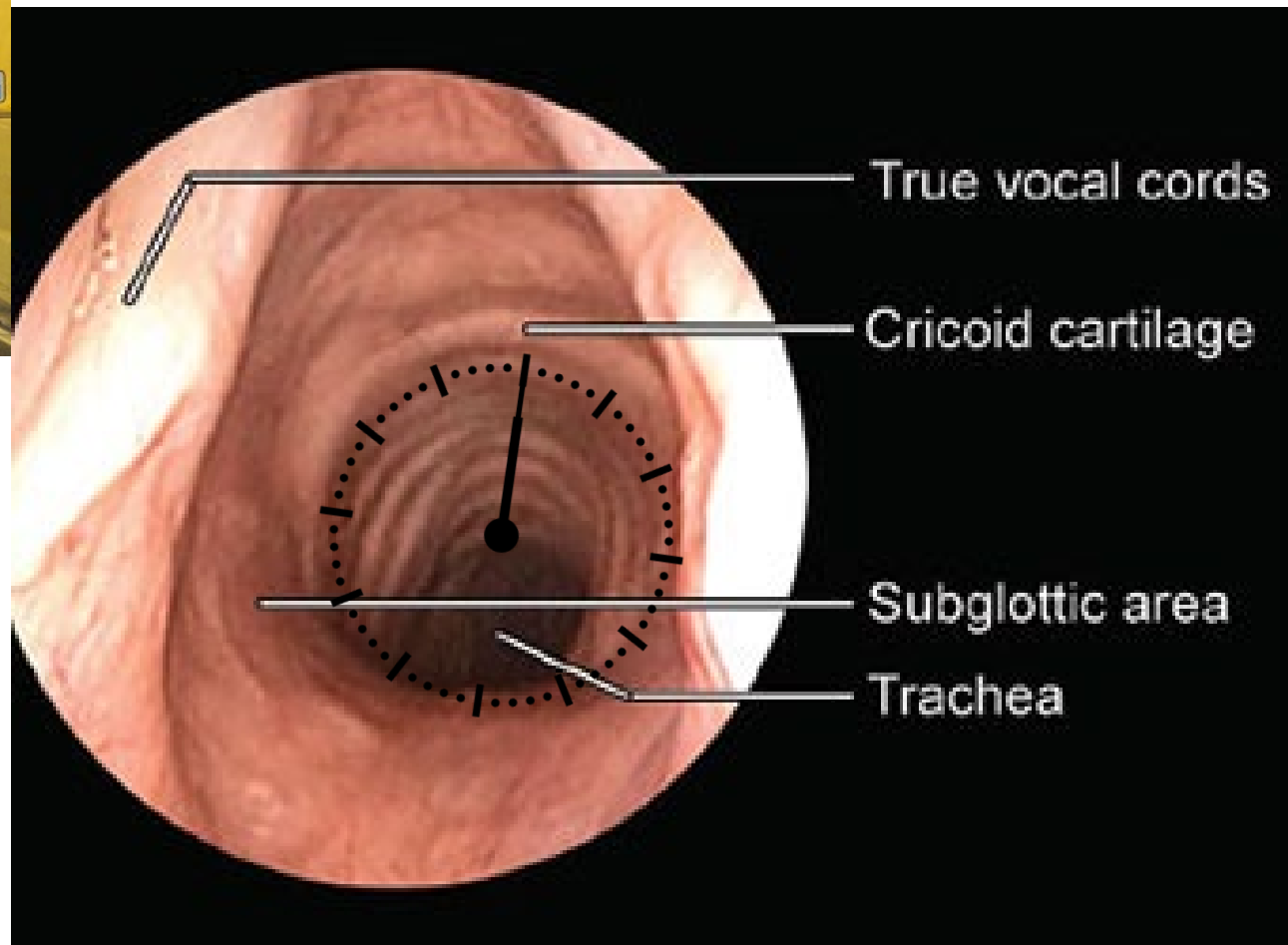
Guanggui Shen[1] · Hongzhen Yin[1] · Yingya Cao[1] · Meijun Zhang[1] · Jingyi Wu[1] · Xiaogan Jiang[1] · Tao Yu[1] · Weihua Lu[1]

Received: 22 May 2018 / Accepted: 1 August 2018 / Published online: 11 August 2018

Table 2 Incidence of complications

Characteristic	All ($n=90$)	PDT ($n=45$)	PDT-FOB ($n=45$)	t/χ^2	P
Complication rate (%) (n)	30% (27/90)	40% (18/45)	20% (9/45)	4.286	0.038
Minor haemorrhage controlled by compression (%) (n)	26.7% (24/90)	33.3% (15/45)	20% (9/45)	2.045	0.153
Major haemorrhage requiring intervention (%) (n)	1.1% (1/90)	4.4% (2/45)	0 (0/45)	–	0.494
Pneumothorax (%) (n)	1.1% (1/90)	2.2% (1/45)	0 (0/45)	–	1.000
Total rate of first-time success (%) (n)	78.9% (71/90)	64.4% (29/45)	93.3% (42/45)	11.27	0.001
Puncture with the puncture needle (%) (n)	84.4% (76/90)	75.6% (34/45)	93.3% (42/45)	5.414	0.039
Insertion of the tracheostomy catheter (%) (n)	94.4% (85/90)	88.9% (40/45)	100% (45/45)	5.294	0.056
Time of procedure (min)	11.3 ± 1.3	12.9 ± 1.1	9.8 ± 1.2	12.812	<0.001





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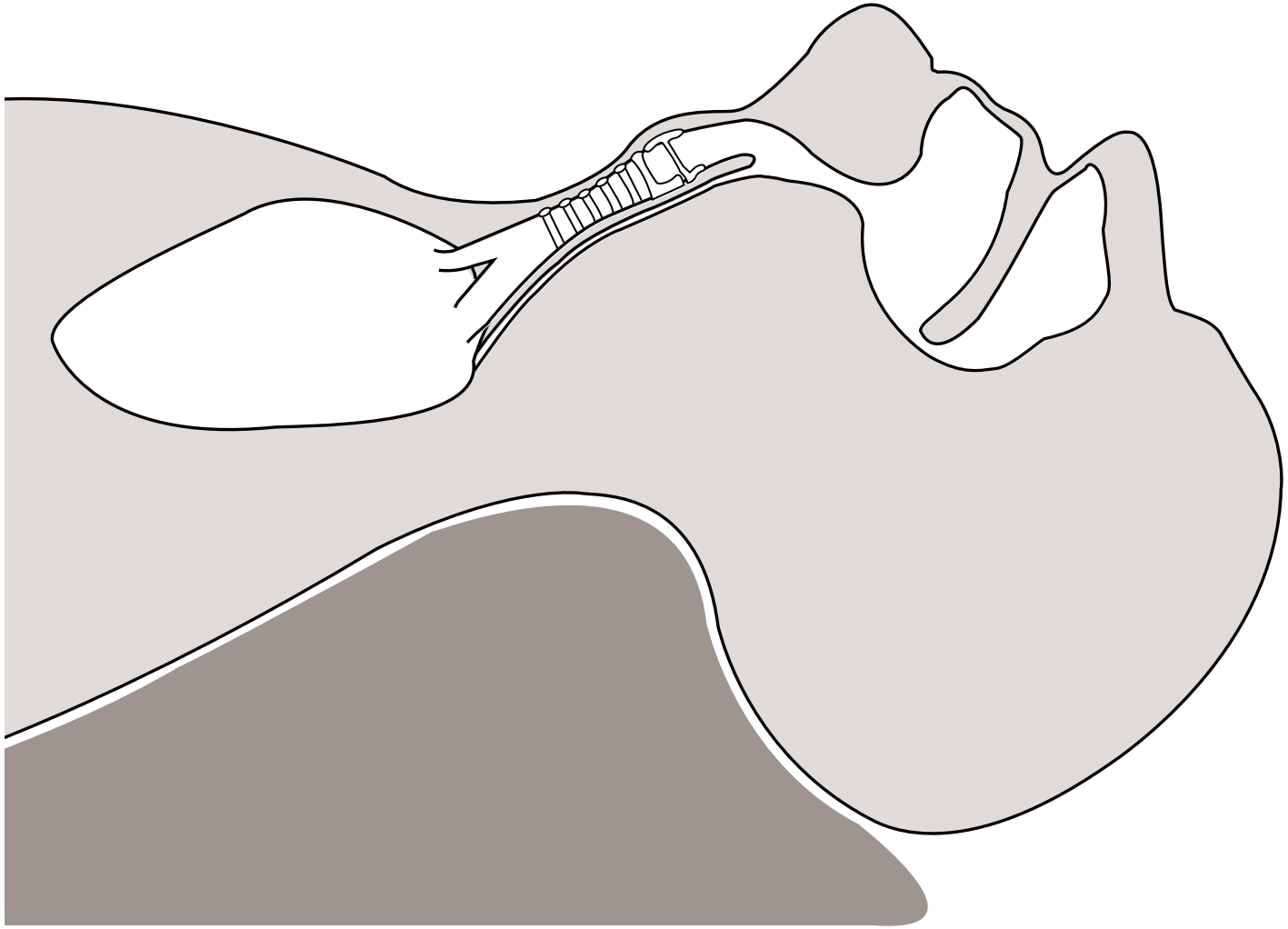

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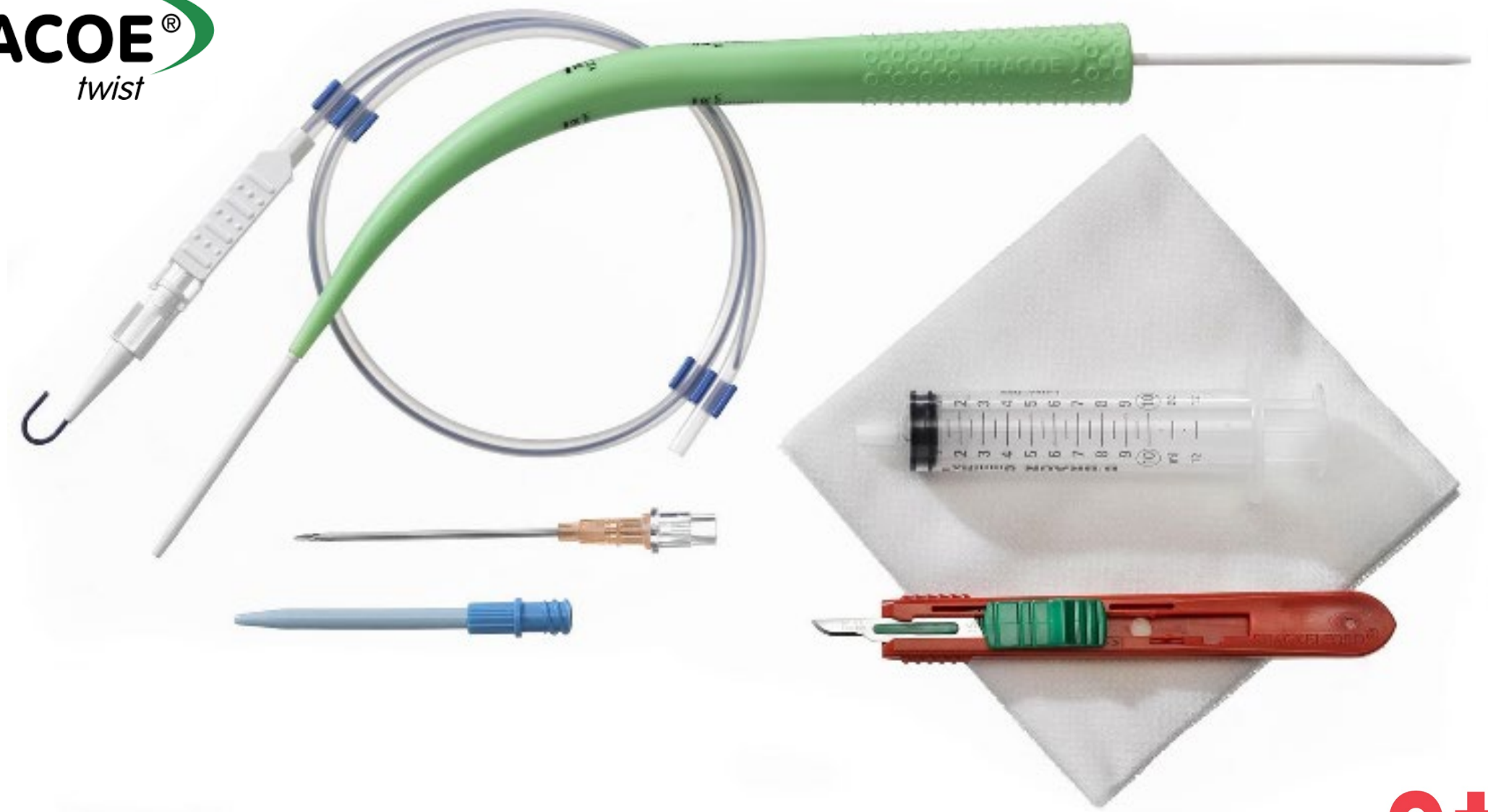
TRACOE®
twist



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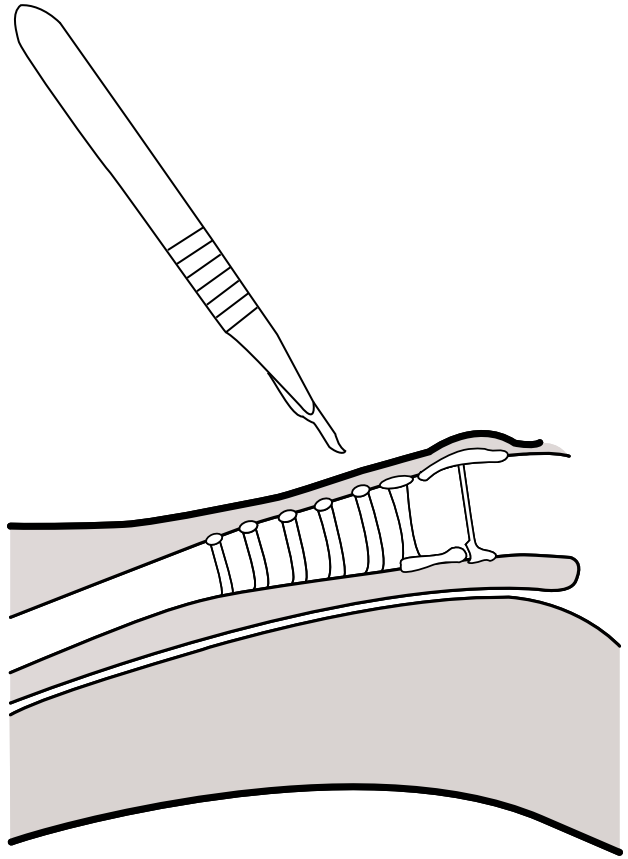
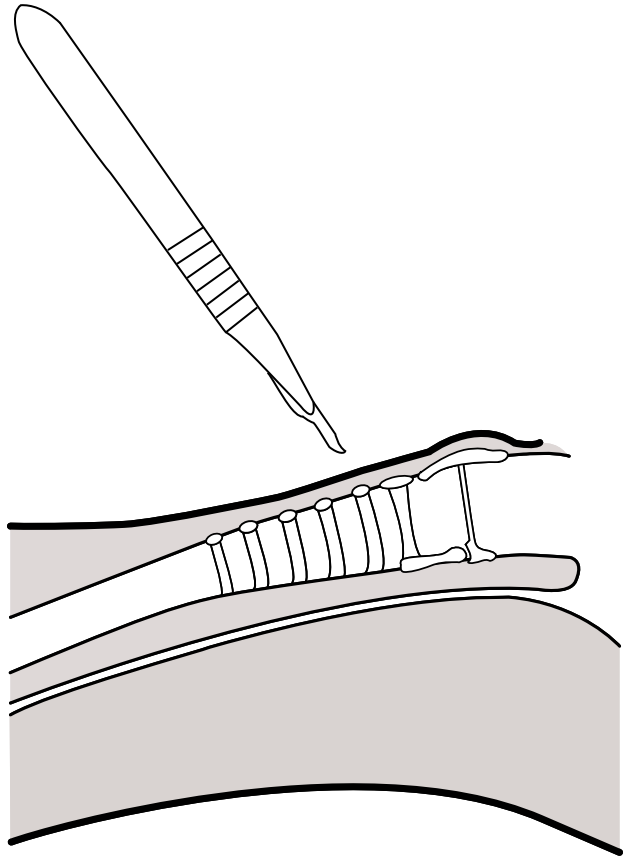
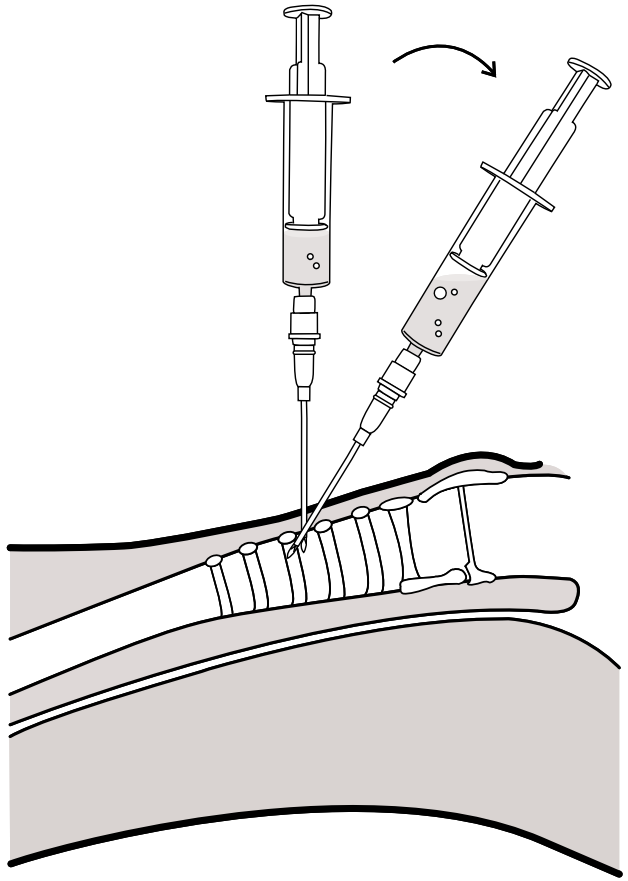
Atos
Breathing–Speaking–Living

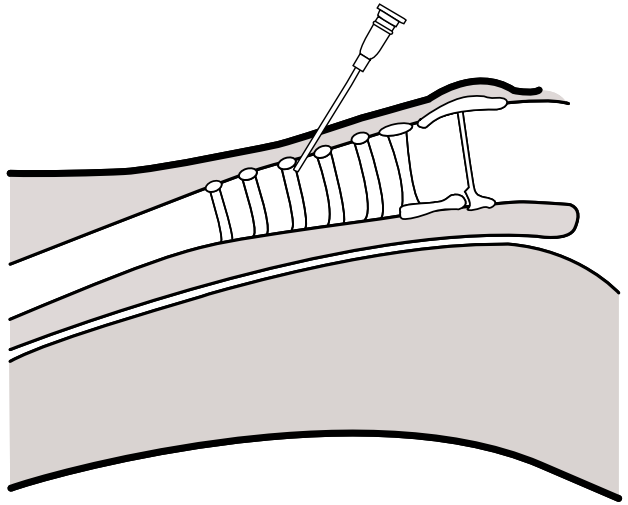
TRACOE®
twist

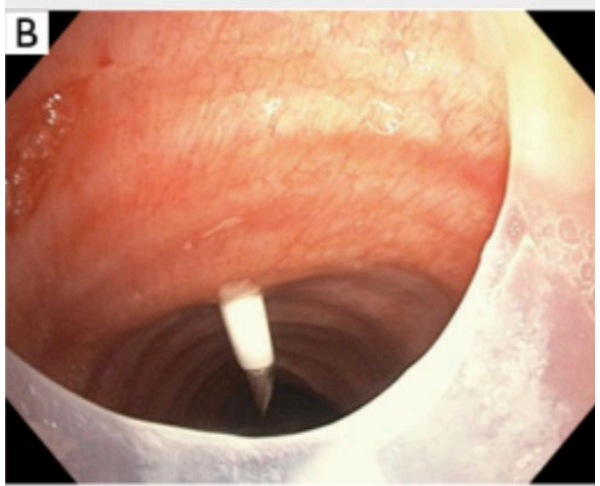
H+
MC Intensive Care











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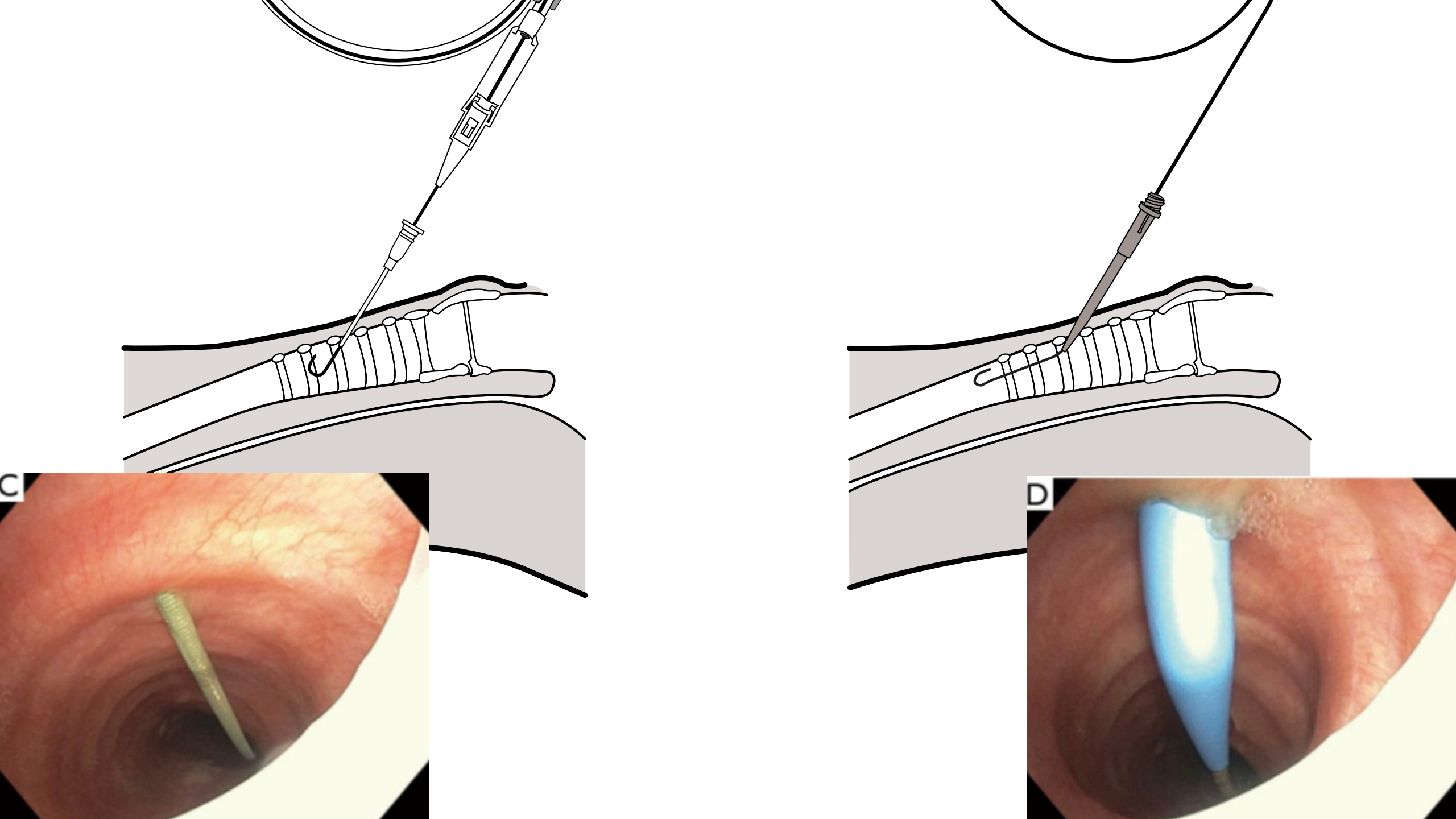
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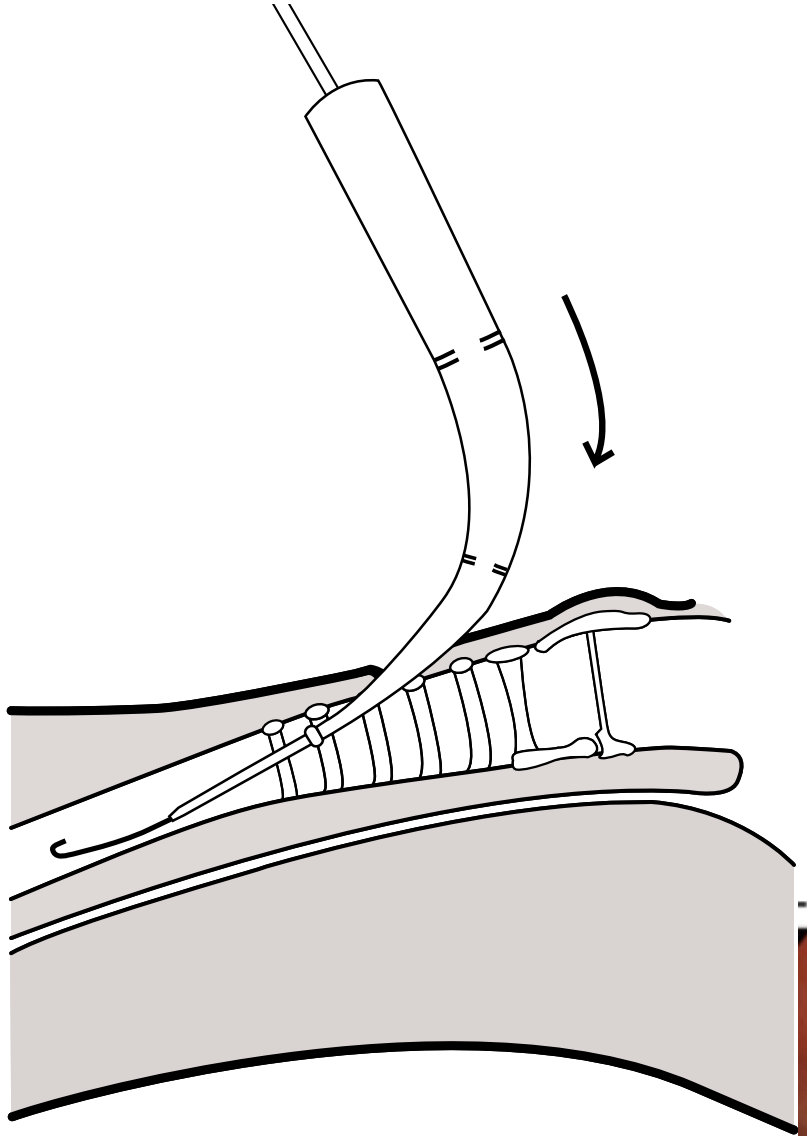

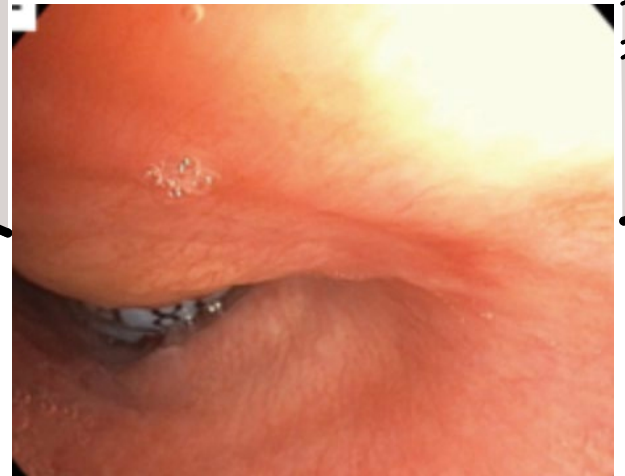

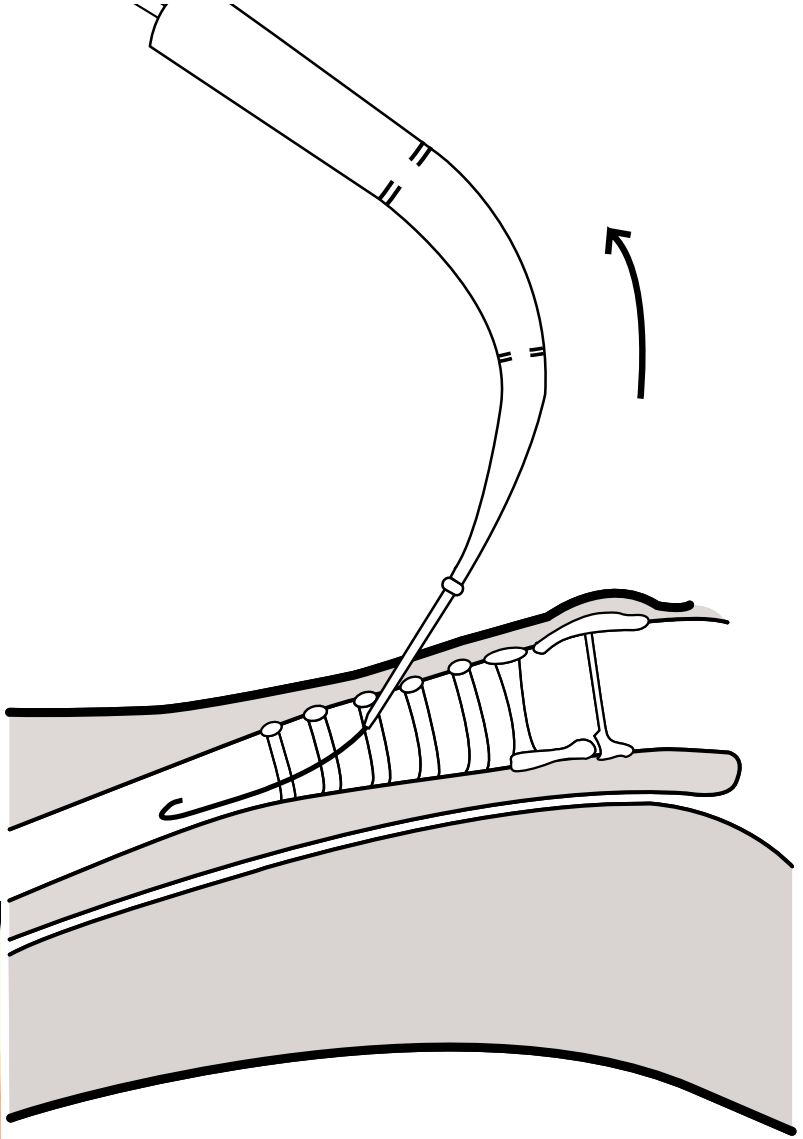

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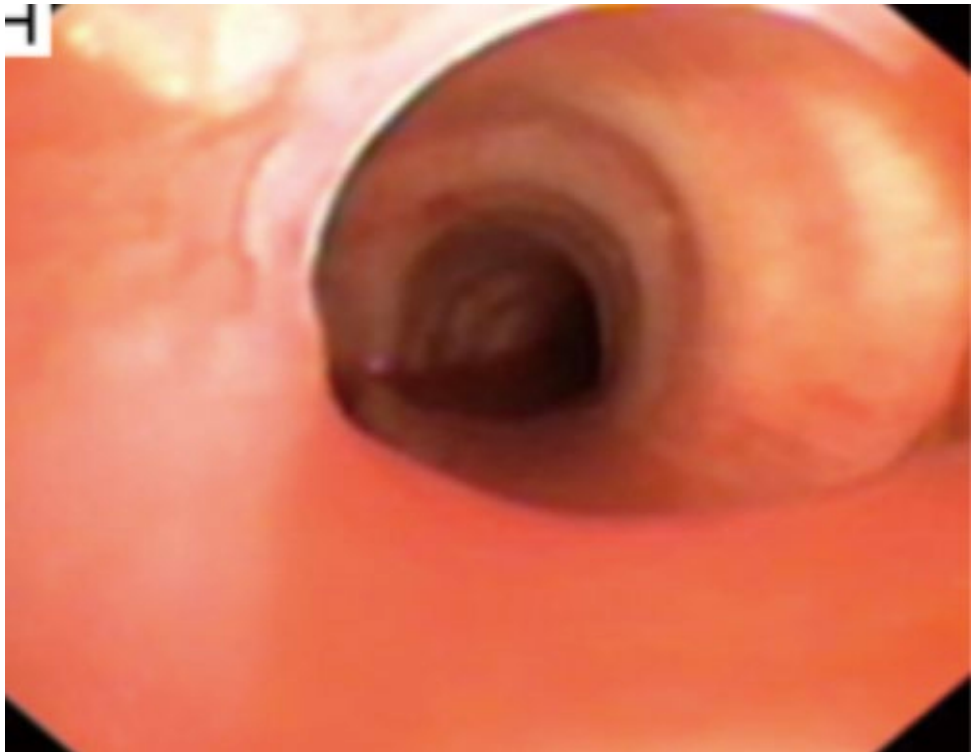

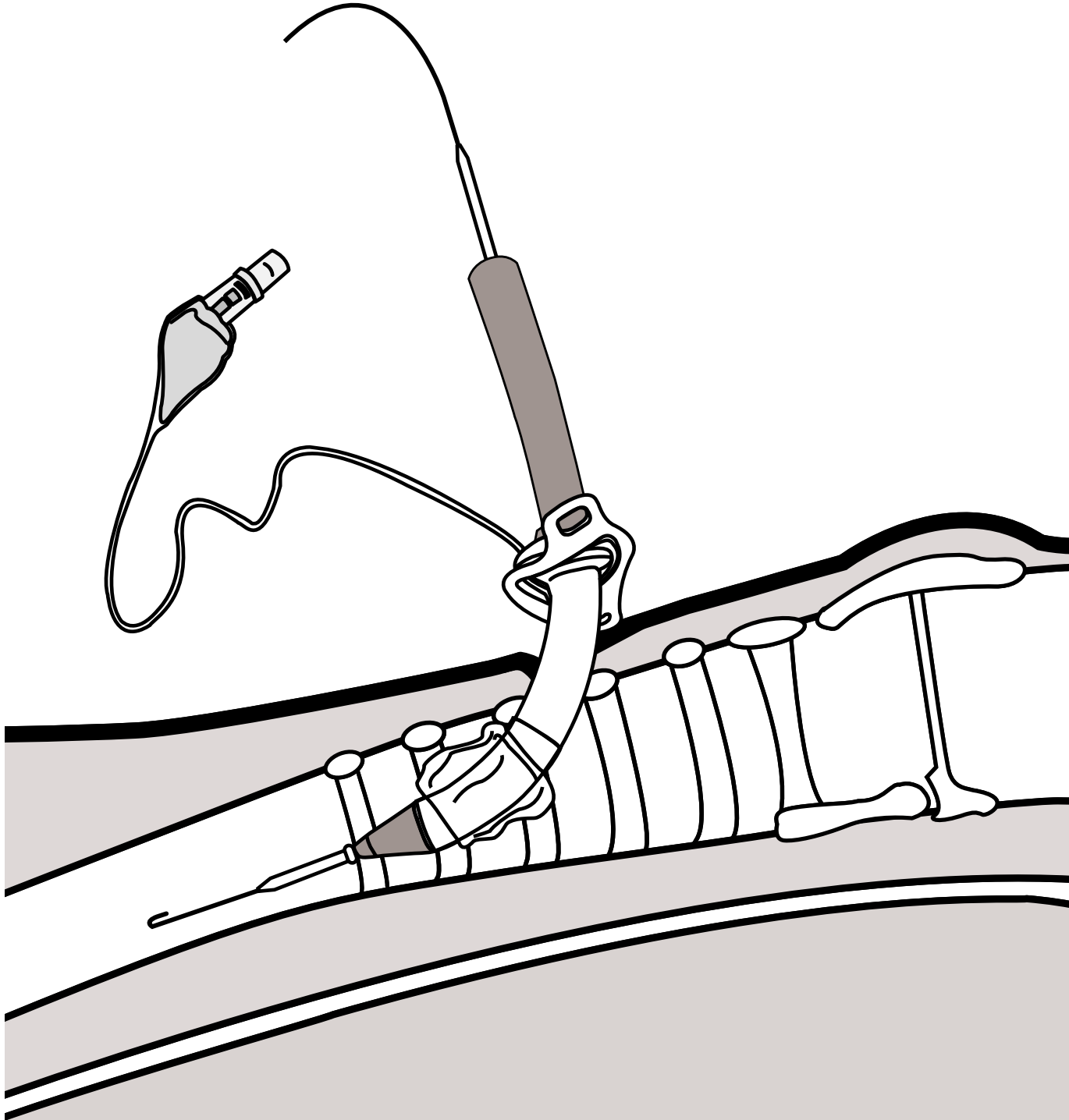

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I hate Complications

ORIGINAL ARTICLE

Safety and Feasibility of Very Early Bronchoscopy-assisted Percutaneous Dilatational Tracheostomy in Anterior Cervical Spine Fixation Patients

Amrutha Liz Paul[1], Ram Varaham[2], Kannan Balaraman[3], S Rajasekaran[4], Balasubramani VM[5]

Received on: 23 August 2022; *Accepted on:* 25 August 2022; *Published on:* 30 September 2022

Table 4: Complications

Bleeding (not amounting to transfusion)	4 (0.04%)
Bradycardia	7 (0.08%)
Desaturation	8 (0.09%)
Surgical-site infection	1 (0.01%)

Values presented as numbers (percentage)

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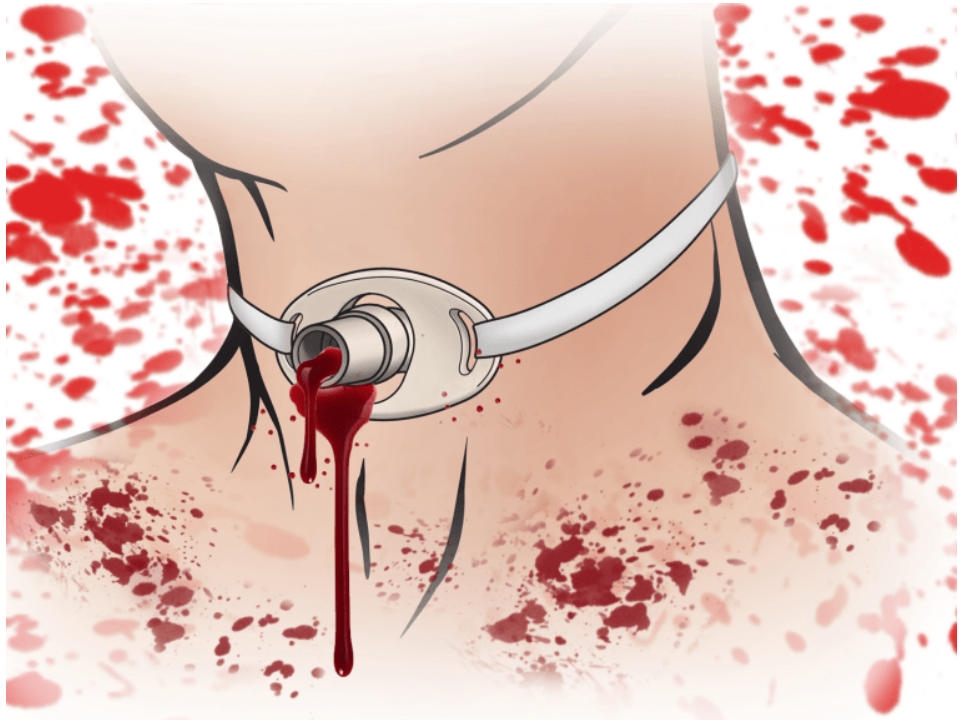
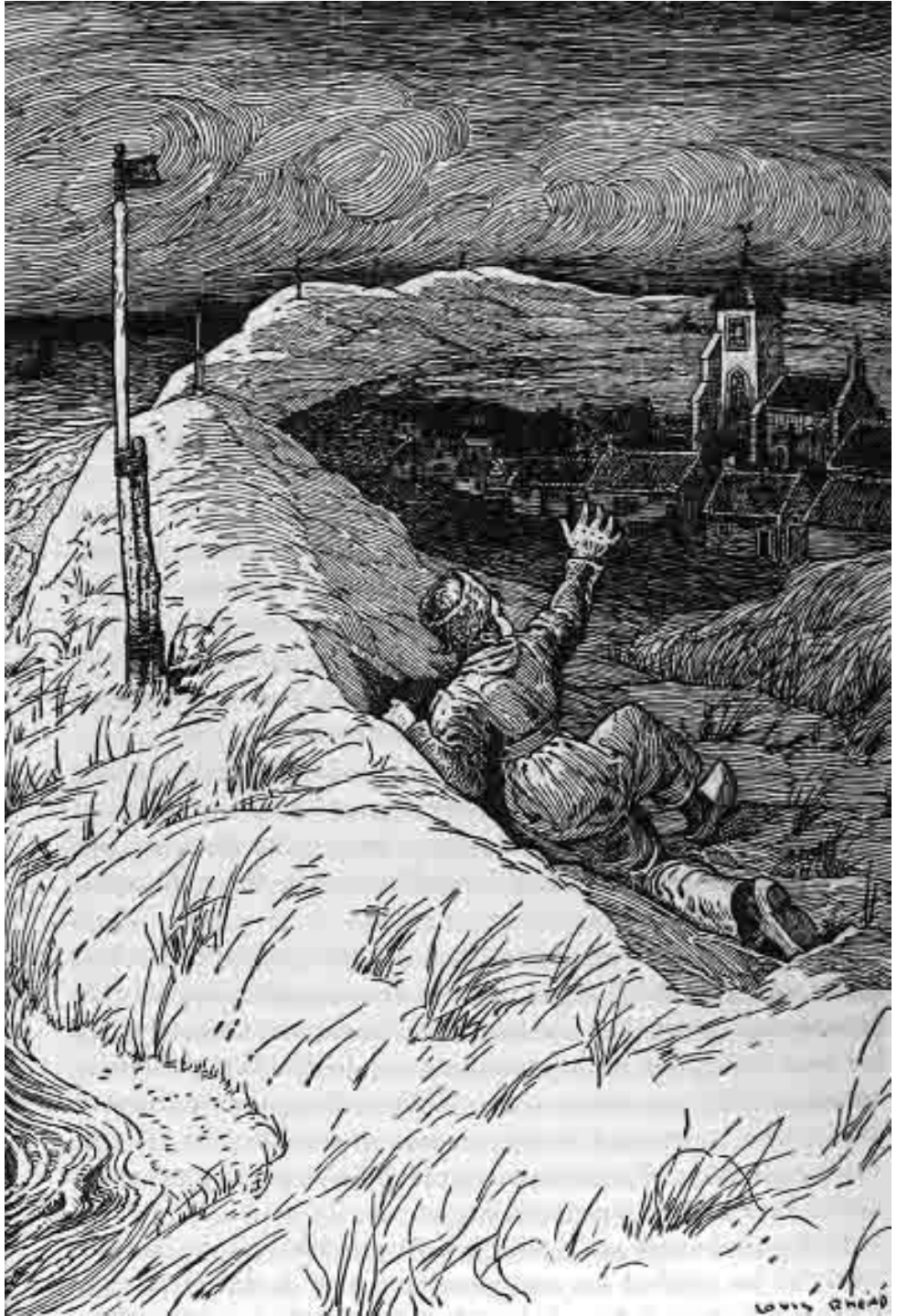
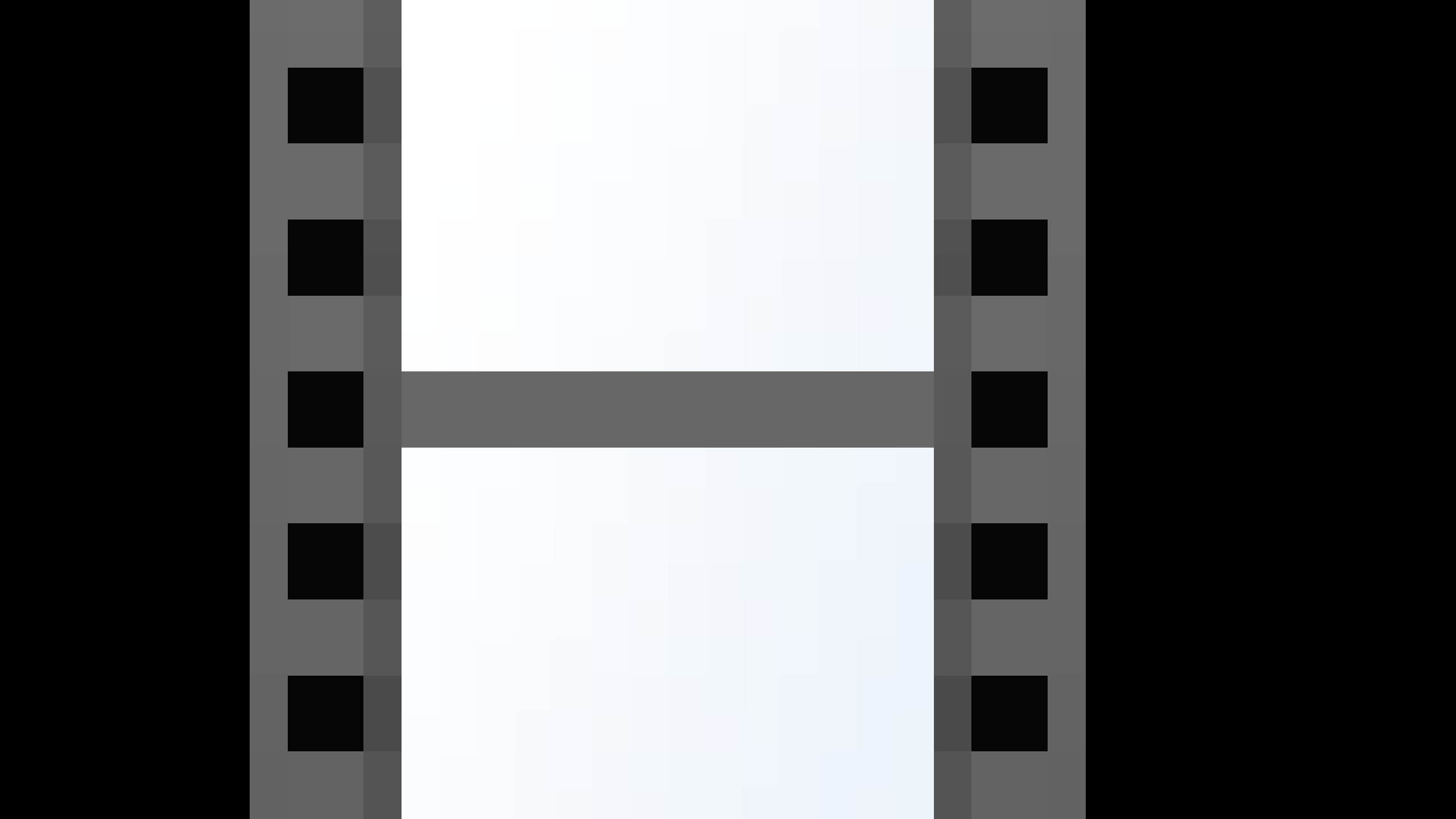


6.35





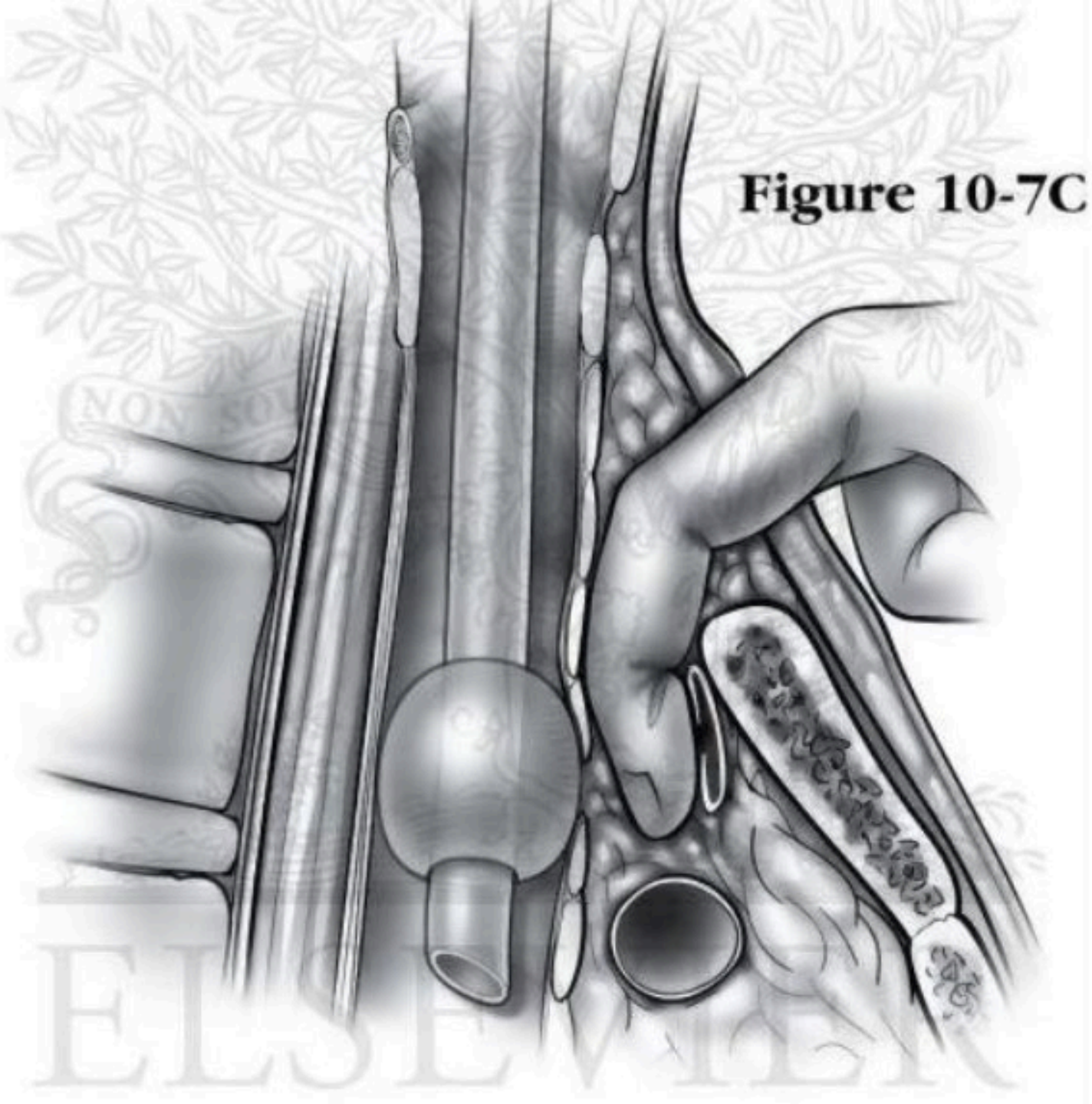
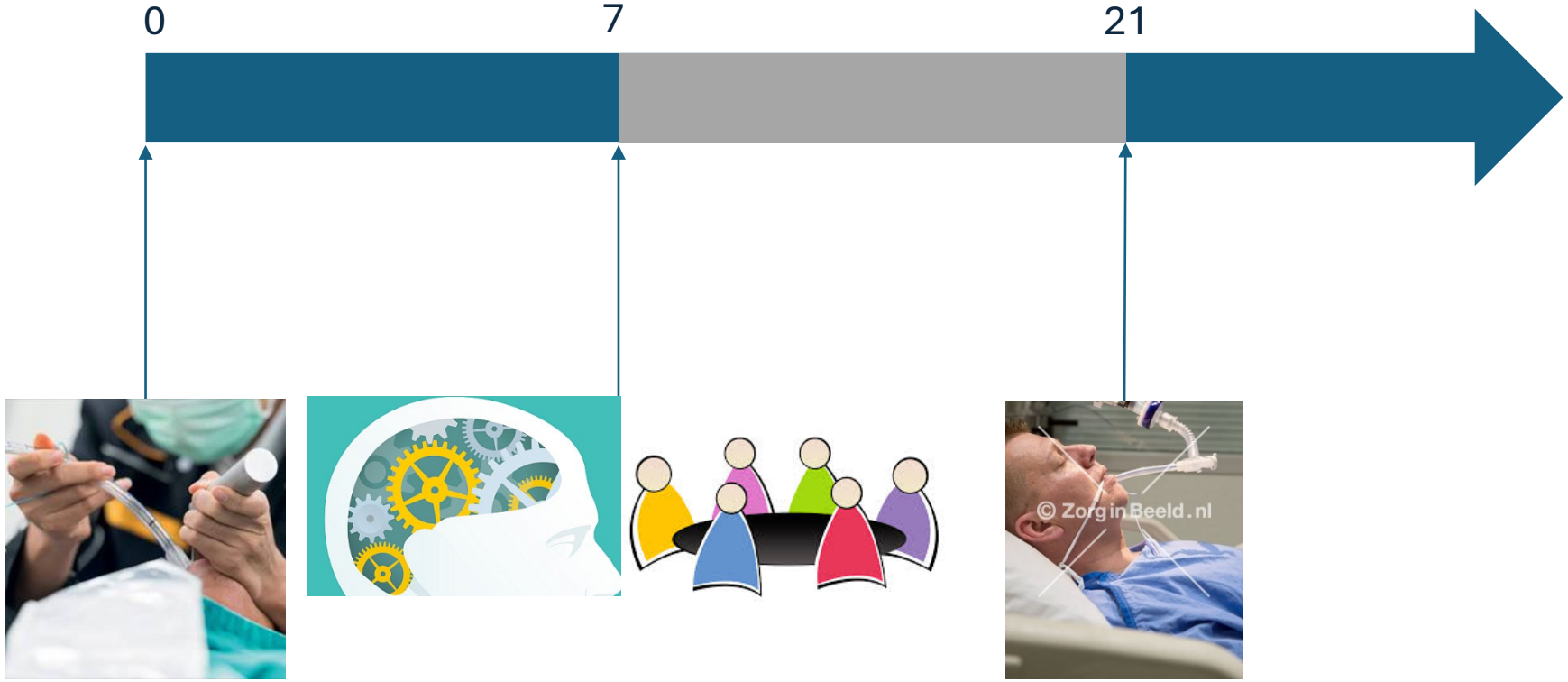


Figure 10-7C

Conclusies

1. Start met denken op dag 7
2. Gebruik de “toys for boys”
3. Er is geen reden om niet eerst aan de percutane te denken



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Vragen?

Scan de QR-code voor het doorsturen van uw vragen

- Uw naam (optioneel)
- Naam van de spreker
- Uw vraag

U kunt het formulier meermaals gebruiken/invullen

02

Lange termijn uitkomsten na de IC

De impact van IC herinneringen

Drs. Rens Kooken | Arts-Promovendus IC Radboud UMC

Atos
Coloplast Group

De Intensive Care overleefd.. en dan?

Langetermijnuitkomsten van de IC en de impact van herinneringen

Drs. Rens Kooken
Arts-onderzoeker Intensive Care

Radboudumc

De IC overleefd!

Jaarlijks **80.000** patiënten opgenomen op de IC
(*220 opnames p/dag)*

90% (70.000) overleeft de IC opname

75% (60.000) overleeft het 1e jaar

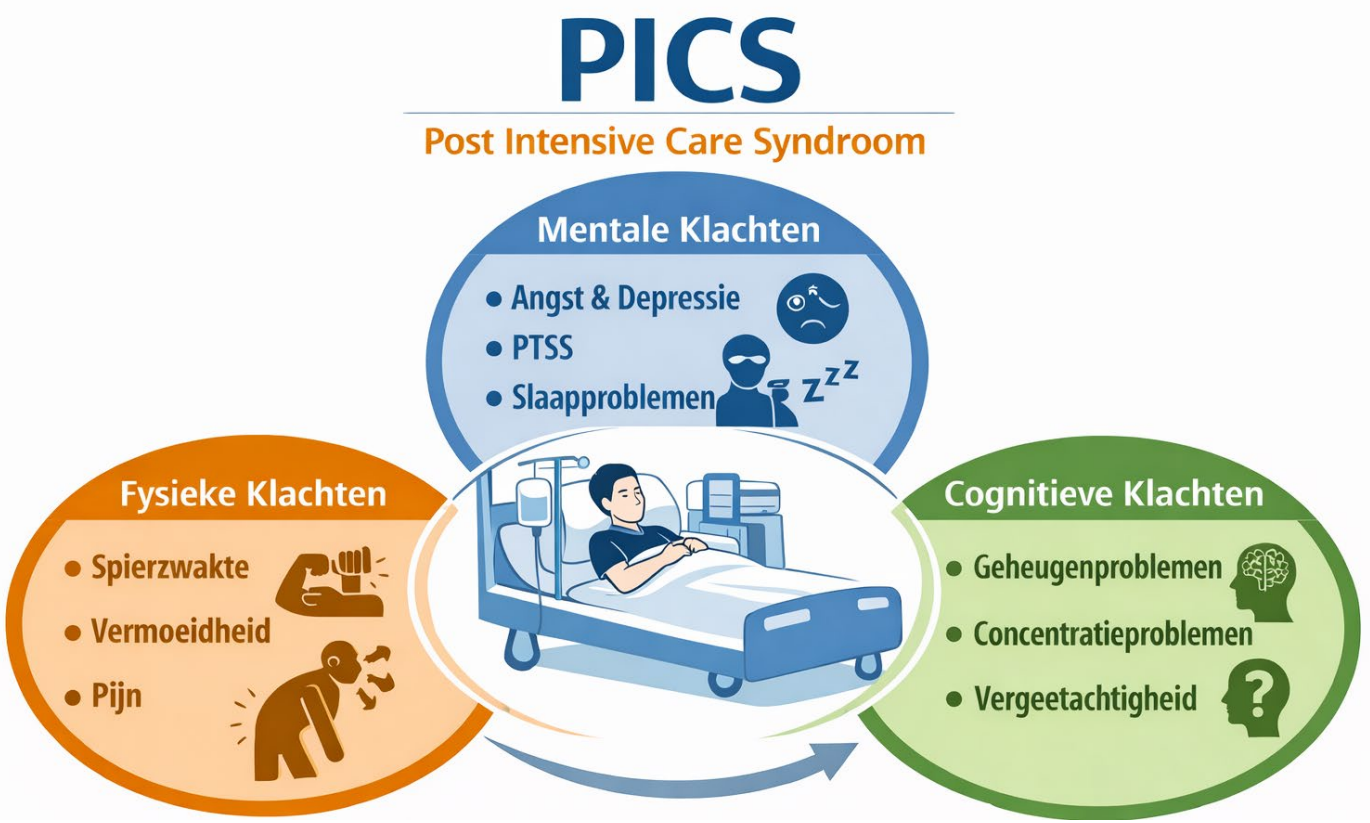
Radboudumc

En dan?

Dan begint het herstel

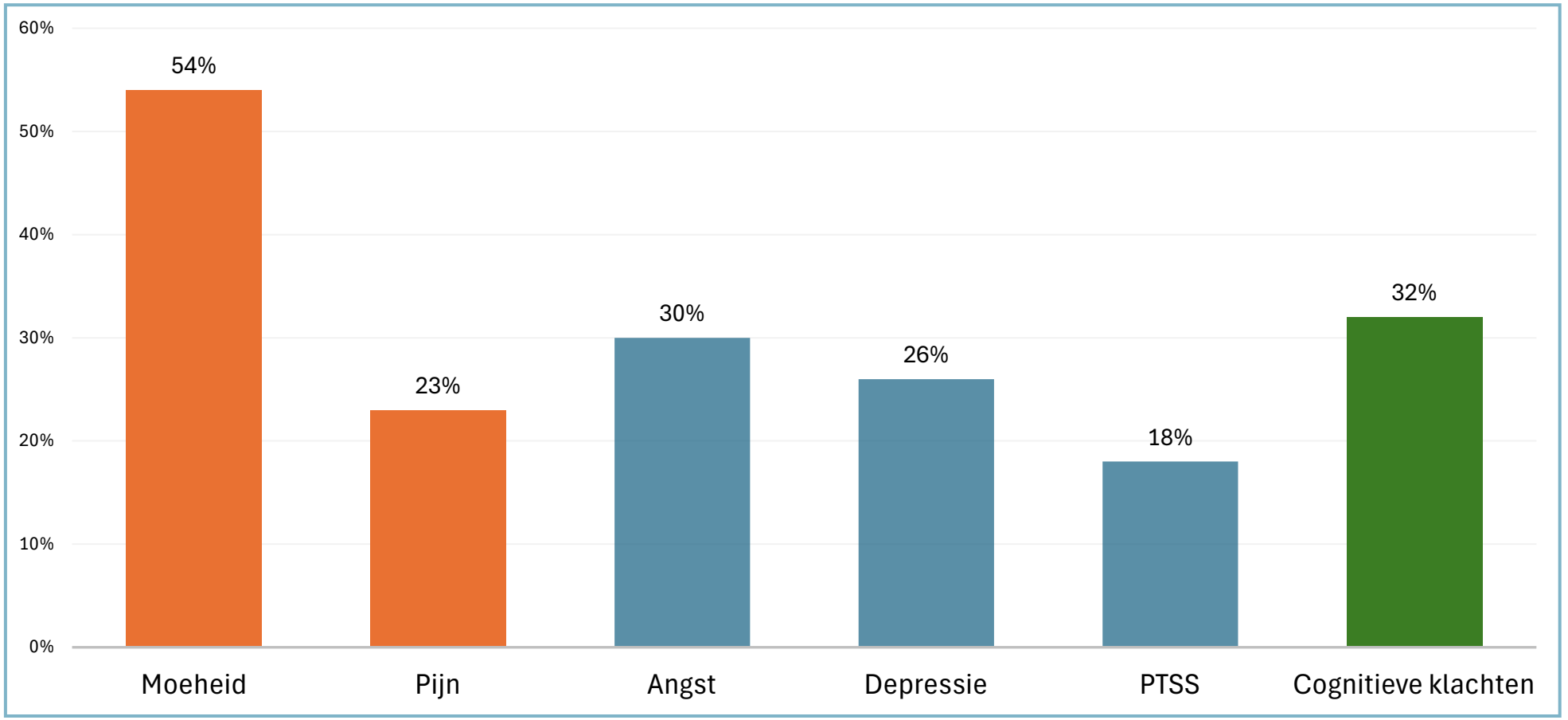
50% van de overlevers heeft fysieke, mentale en/of cognitieve klachten 1 jaar na IC

Post-Intensive Care Syndroom (PICS)



Geense et al, AJRCCM, 2021

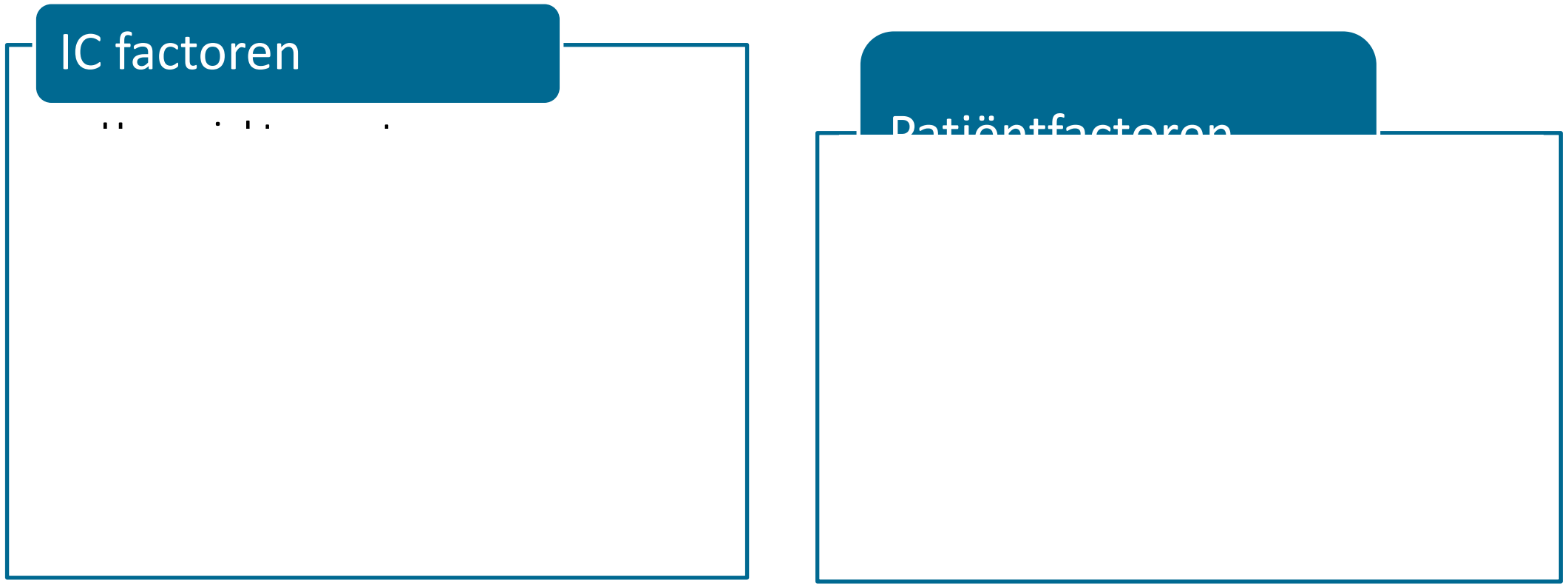
Percentage post-IC klachten



Geense et al, AJRCCM, 2021
Ayenew et al, PLoS One, 2025

Radboudumc

Risicofactoren PICS



Lee et al, Aust Crit Care, 2020

Risicofactoren PICS

IC factoren

- Hoge ziekte-ernst
- IC-ligduur
- Doorgemaakt delirium
- Negatieve herinneringen

Patiëntfactoren

- Leeftijd
- Vrouwelijk geslacht
- Pre-IC frailty
- Pre-IC mentale klachten
- Lage sociaal-economische status

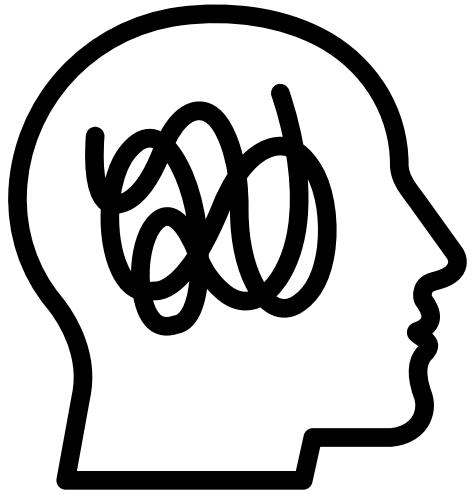
Lee et al, Aust Crit Care, 2020

Risicofactoren PICS

Doorgemaakt delirium

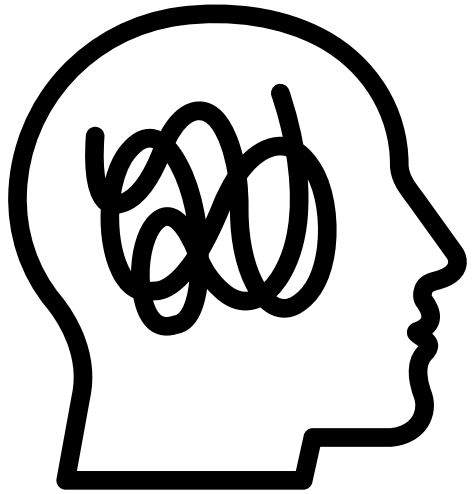
&

Negatieve herinneringen



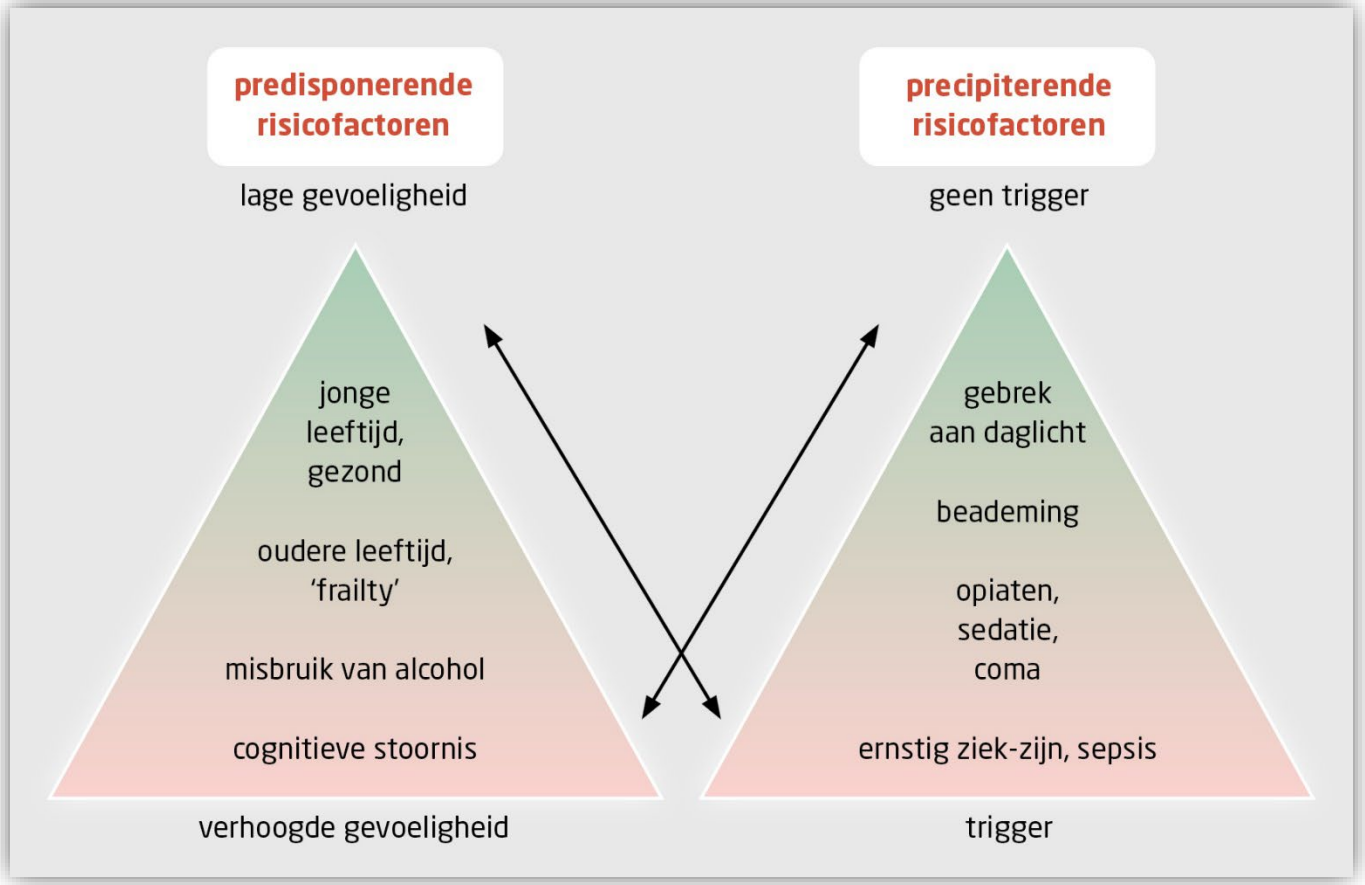
Risicofactoren PICS

Doorgemaakt delirium



IC delirium

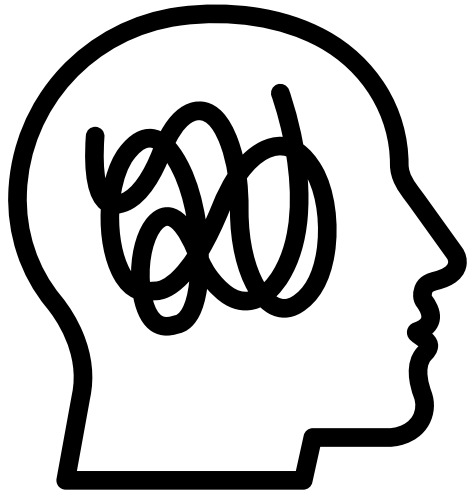
- **1 op 3** IC patiënten
- Beademd? **1 op 2**
- **<u>Altijd</u>** onderliggende oorzaak
- (Nog) **geen** medicamenteuze **behandeling**
- Sterke (en enige) **risicofactor** voor **cognitieve stoornissen**



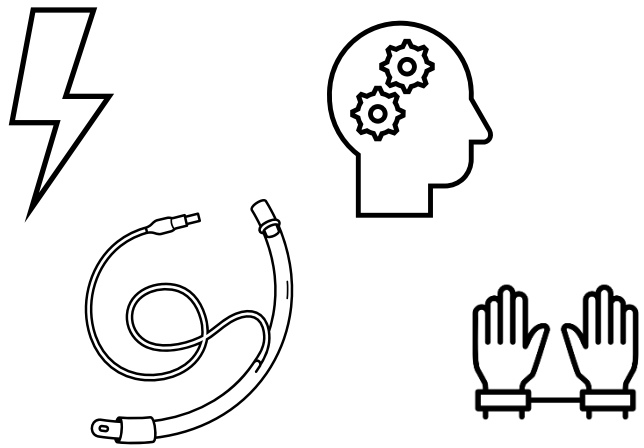
Vos et al, NTvG, 2023

Risicofactoren PICS

Negatieve herinneringen



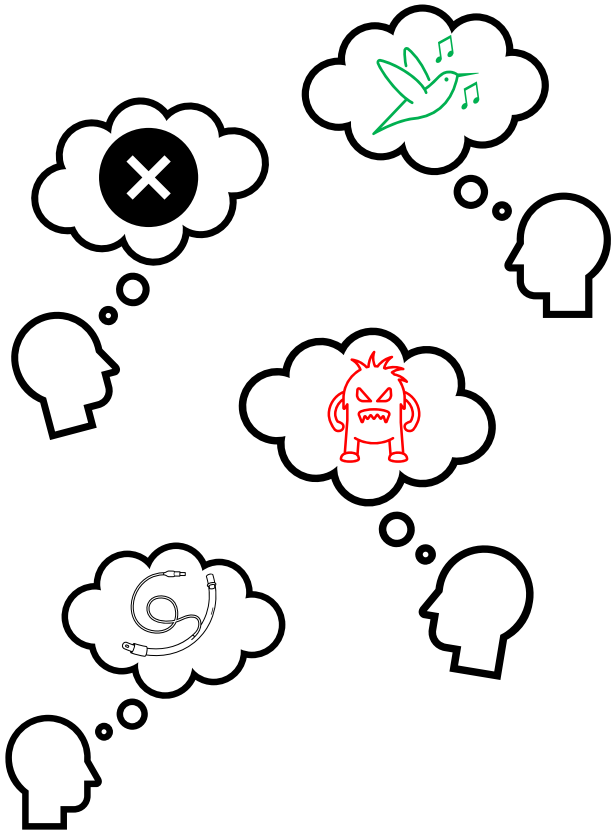
Herinneringsvorming op de IC



Intensive Care stressoren

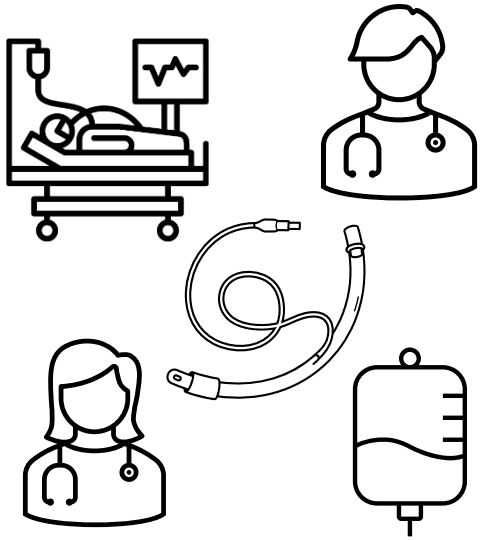
Sedatie

Comfort en faciliteren beademing

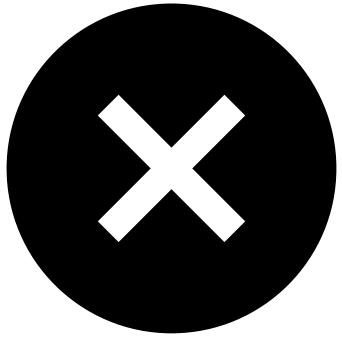


IC herinneringstypes

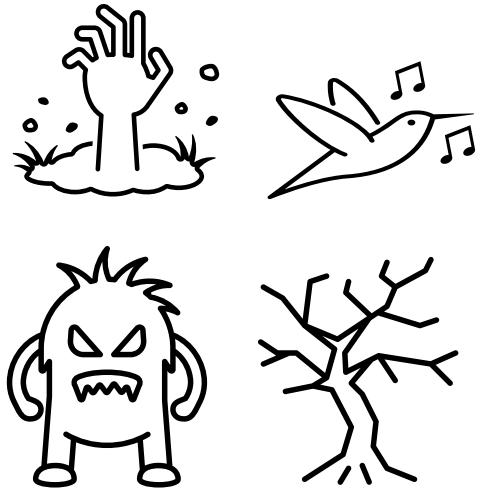
≠ waan!



Feitelijke herinneringen



Complete amnesie



Waan herinneringen

Jones et al, Memory, 2000

Waanherinneringen

"Ik werd geopereerd op de motorkap in een garage door de buren. Ziekenhuis stortte in, apparatuur die me in leven hield deed het niet meer."

"Verpleegkundige had mij ontvoerd en vastgebonden in de kelder, wilde me vergiftigen en vermoorden, werd uitgelachen."

"Ik zakte steeds dieper in mijn matras, dacht dat ik begraven werd en mensen feest vierden."

"Ik zat in een vallend ruimteschip na harttransplantatie en werd neergeschoten door degene van wie het hart was."

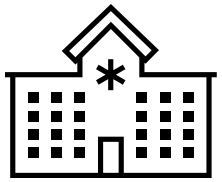
Vragen/onderzoeksdoelen

Hoe verhouden deze herinneringstypes zich tot elkaar?

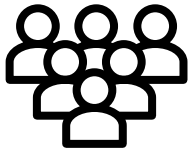
Welke factoren dragen bij aan herinneringsvorming?

Hoe verschillen de langetermijnuitkomsten tussen de herinneringstypes?

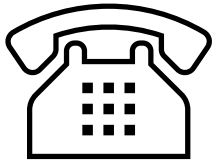
Methoden



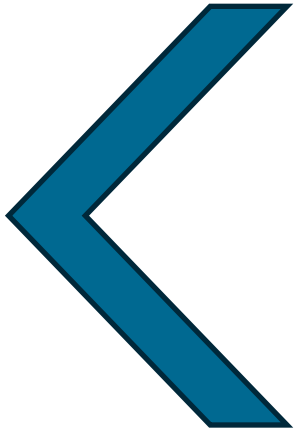
2 NL UMCs



N = 428



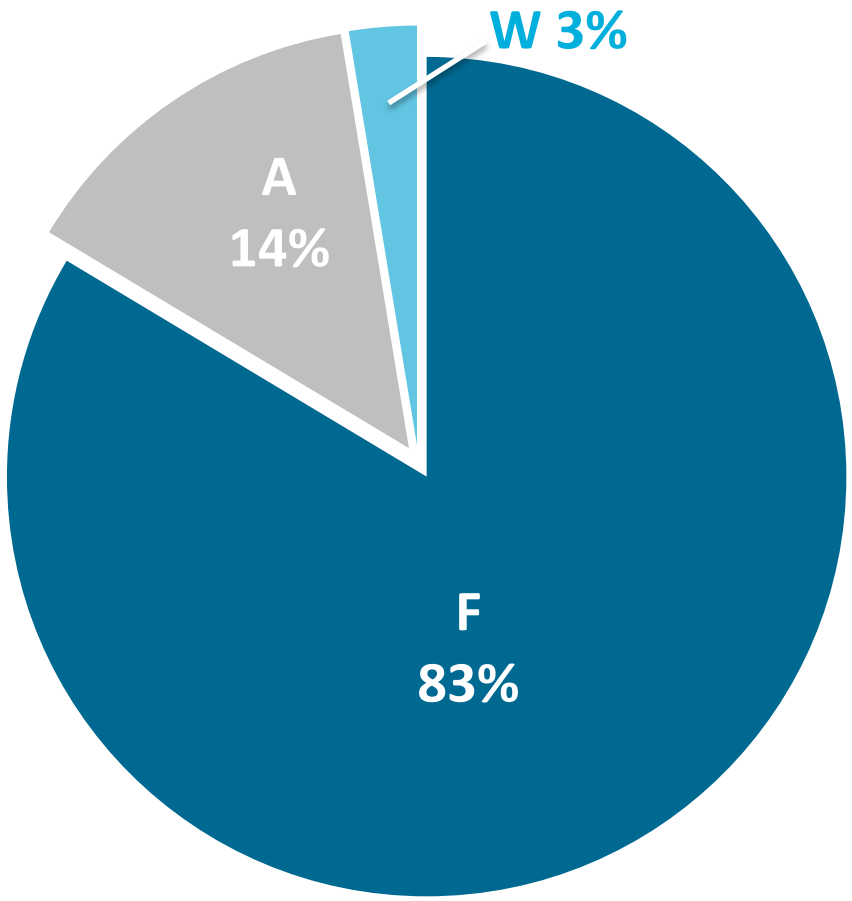
Telefonisch interview



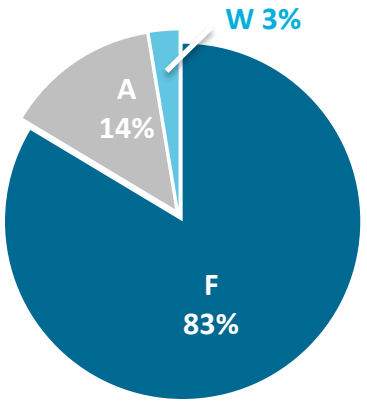
3 maanden post-IC
ICU Memory Tool

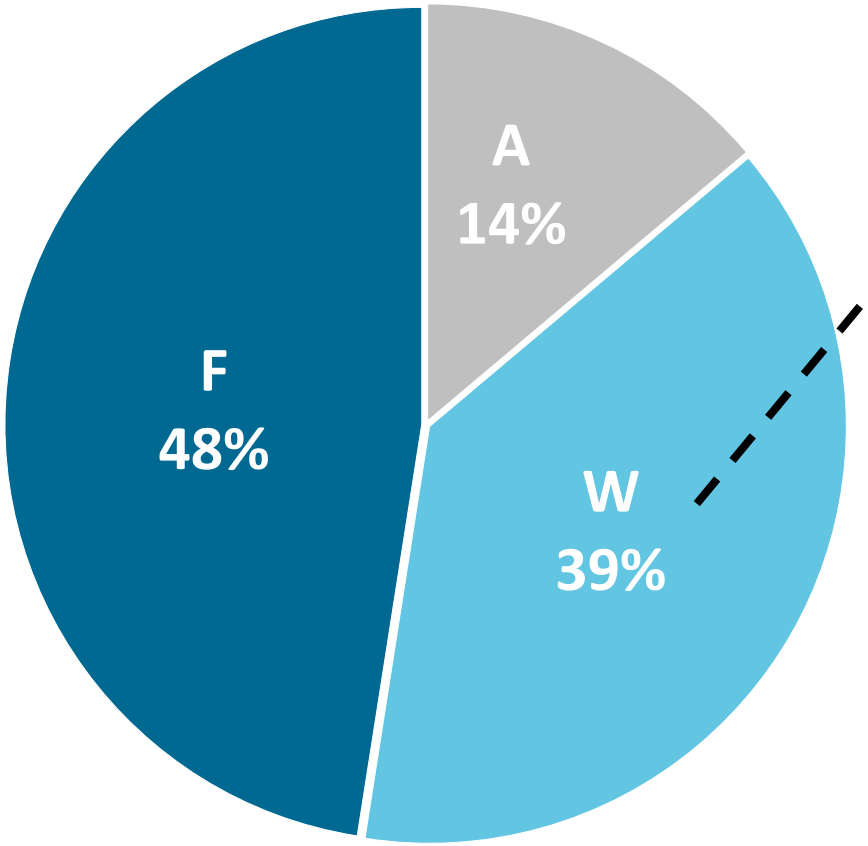
3 en 12 maanden post-IC
IES-6 vragenlijst (PTSD)

Verdeling herinneringstypes



Verdeling herinneringstypes





Delirium in
(slechts) 41% (!)

Geen ‘*condicio sine qua non*’?

Onopgemerkt gebleven?

Determinanten van herinneringstypes

Referentie = feitelijk

	Amnesie		Waanherinnering	
	OR	**95% CI**	**OR**	**95% CI**
Vrouwelijk geslacht	1.99	1.04 – 3.81	1.22	0.73 – 2.03
Leeftijd (jaren)	1.03	1.00 – 1.05	0.98	0.97 – 1.00
SOFA score	1.05	0.94 – 1.17	1.06	0.97 – 1.15
Dagen diepe sedatie	1.34	1.09 – 1.65	1.12	0.94 – 1.34
Delirium	1.02	0.45 – 2.33	1.94	1.04 – 3.61
Fysieke fixatie	1.37	0.61 – 3.07	1.26	0.65 – 2.43
IC ligduur	0.98	0.87 – 1.10	1.11	1.02 – 1.21
Mechanische beademing	1.42	0.45 – 4.54	0.74	0.36 – 1.51

Determinanten van herinneringstypes

Referentie = feitelijk

Vrouwelijk geslacht en duur van coma zijn geassocieerd met IC-amnesie

	Amnesie		Waanherinnering	
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Determinanten van herinneringstypes

Referentie = feitelijk

Vrouwelijk geslacht en duur van coma zijn geassocieerd met IC-amnesie

Delirium en IC ligduur zijn geassocieerd met waanherinneringen

	Amnesie		Waanherinnering	
	OR	**95% CI**	**OR**	**95% CI**
Vrouwelijk geslacht	**1.99**	**1.04 – 3.81**	1.22	0.73 – 2.03
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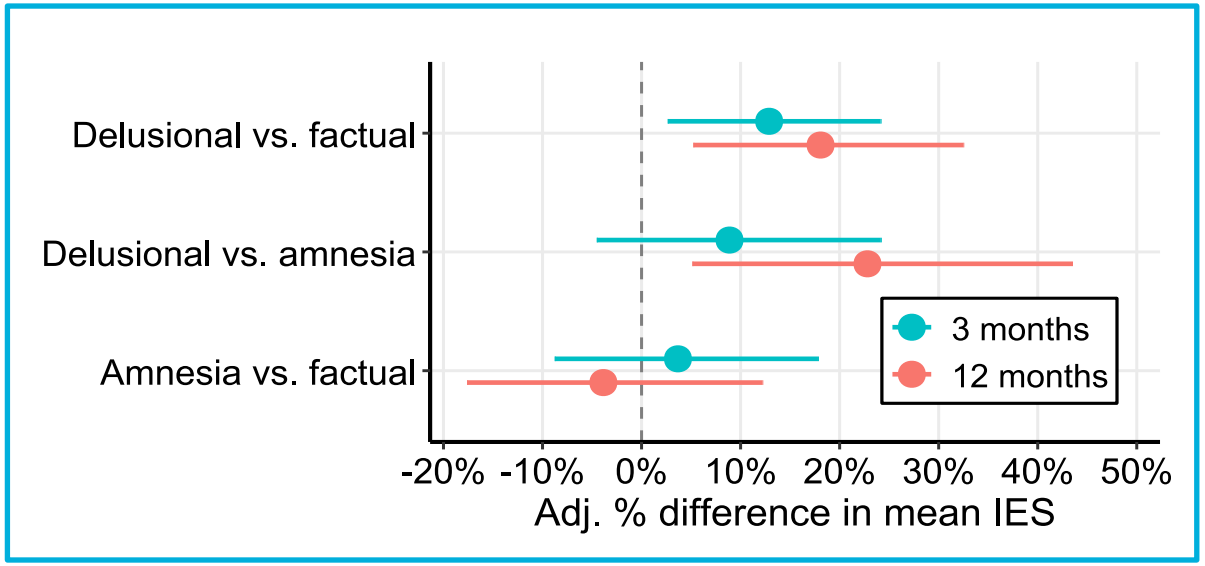
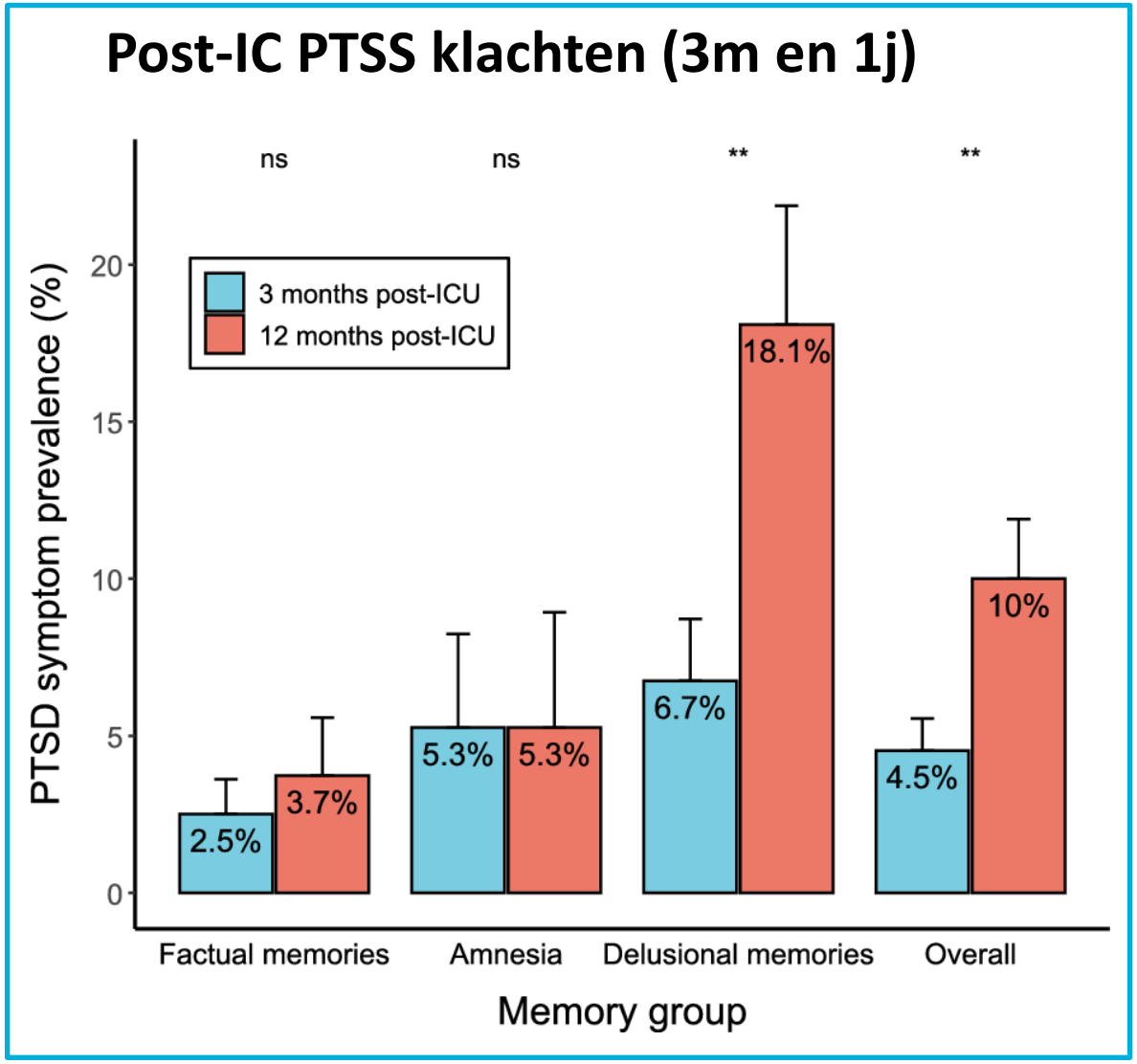
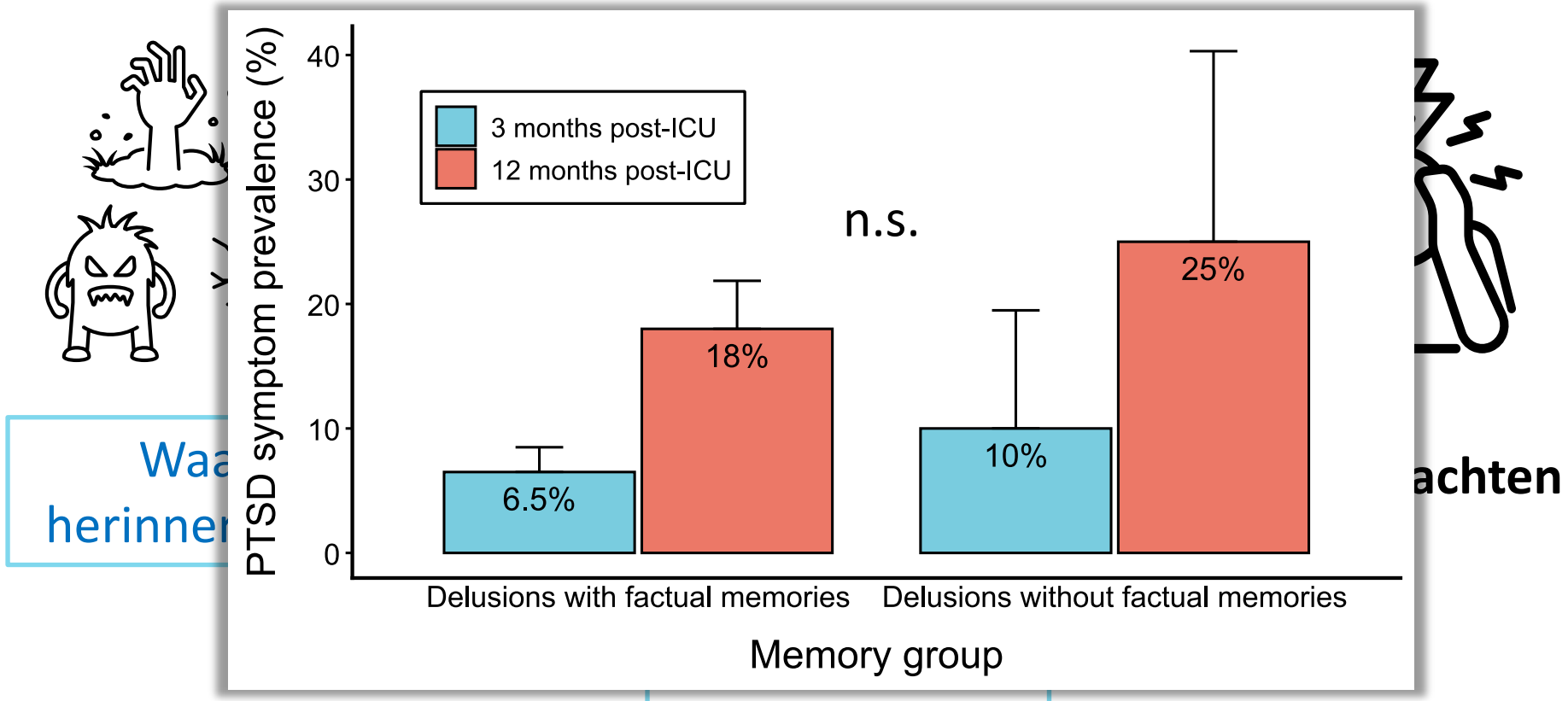
Herinneringen en langetermijn PTSS





Effect van feitelijke herinneringen?



Waa
herinner

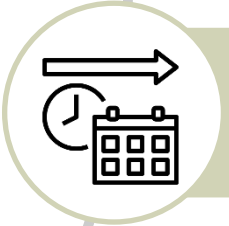
achten

herinneringen

Recap

1/3e waanherinneringen, ook zonder delirium!

Waanherinneringen onafhankelijke link met PTSS. Toename in tijd!



Feitelijke herinneringen zijn NIET schadelijk!

Vrouwelijk geslacht meer risico op amnesie

Implicatie voor de klinische praktijk

Beperken van psychologische impact van een IC opname?

Beperk verstoringen in herinneringen!

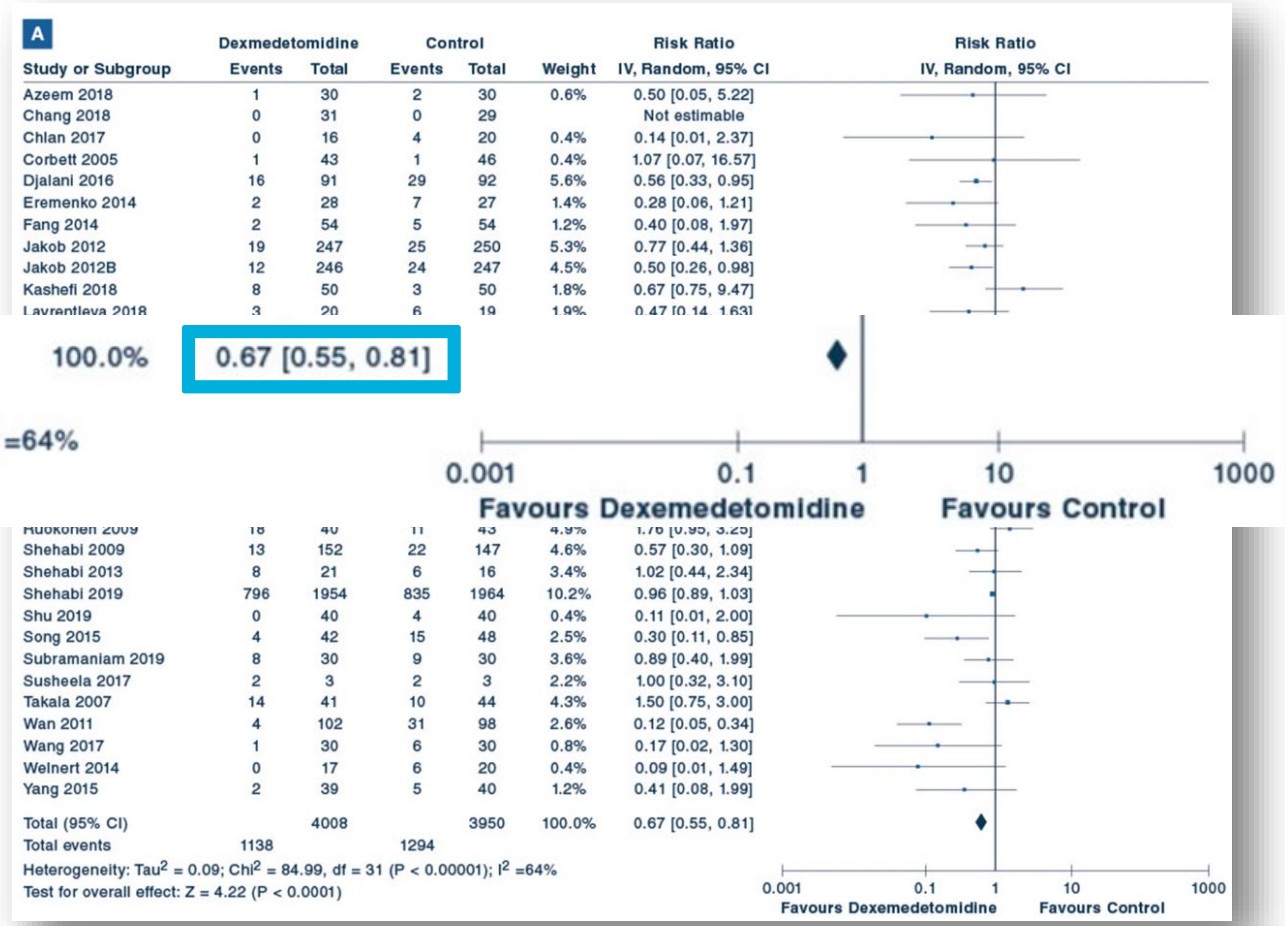
Geen of lichte sedatie

Tijdens IC opname

Dexmedetomidine

77 RCTs (n = 11,997)

Verlaging delier risico met **33%!**



A	Dexmedetomidine		Control			Risk Ratio	Risk Ratio
Study or Subgroup	Events	Total	Events	Total	Weight	IV, Random, 95% CI	IV, Random, 95% CI
Azeem 2018	1	30	2	30	0.6%	0.50 [0.05, 5.22]	
Chang 2018	0	31	0	29		Not estimable	
Chian 2017	0	16	4	20	0.4%	0.14 [0.01, 2.37]	
Corbett 2005	1	43	1	46	0.4%	1.07 [0.07, 16.57]	
Djalani 2016	16	91	29	92	5.6%	0.56 [0.33, 0.95]	
Eremenko 2014	2	28	7	27	1.4%	0.28 [0.06, 1.21]	
Fang 2014	2	54	5	54	1.2%	0.40 [0.08, 1.97]	
Jakob 2012	19	247	25	250	5.3%	0.77 [0.44, 1.36]	
Jakob 2012B	12	246	24	247	4.5%	0.50 [0.26, 0.98]	
Kashefi 2018	8	50	3	50	1.8%	0.67 [0.75, 9.47]	
Lavrentieva 2018	3	20	6	19	1.9%	0.47 [0.14, 1.63]	
Rudokhin 2009	16	40	11	43	4.9%	1.76 [0.95, 3.25]	
Shehabi 2009	13	152	22	147	4.6%	0.57 [0.30, 1.09]	
Shehabi 2013	8	21	6	16	3.4%	1.02 [0.44, 2.34]	
Shehabi 2019	796	1954	835	1964	10.2%	0.96 [0.89, 1.03]	
Shu 2019	0	40	4	40	0.4%	0.11 [0.01, 2.00]	
Song 2015	4	42	15	48	2.5%	0.30 [0.11, 0.85]	
Subramaniam 2019	8	30	9	30	3.6%	0.89 [0.40, 1.99]	
Susheela 2017	2	3	2	3	2.2%	1.00 [0.32, 3.10]	
Takala 2007	14	41	10	44	4.3%	1.50 [0.75, 3.00]	
Wan 2011	4	102	31	98	2.6%	0.12 [0.05, 0.34]	
Wang 2017	1	30	6	30	0.8%	0.17 [0.02, 1.30]	
Welnert 2014	0	17	6	20	0.4%	0.09 [0.01, 1.49]	
Yang 2015	2	39	5	40	1.2%	0.41 [0.08, 1.99]	
Total (95% CI)		4008		3950	100.0%	0.67 [0.55, 0.81]	
Total events	1138		1294				

Heterogeneity: $Tau^2 = 0.09$; $Chi^2 = 84.99$, df = 31 ($P < 0.00001$); $I^2 = 64\%$

Test for overall effect: $Z = 4.22$ ($P < 0.0001$)

0.001 0.1 1 10 1000

Favours Dexemedetomidine Favours Control

Lewis et al, ICM, 2022

Radboudumc

Implicatie voor de klinische praktijk

Beperken van psychologische impact van een IC opname?

Beperk verstoringen in herinneringen!

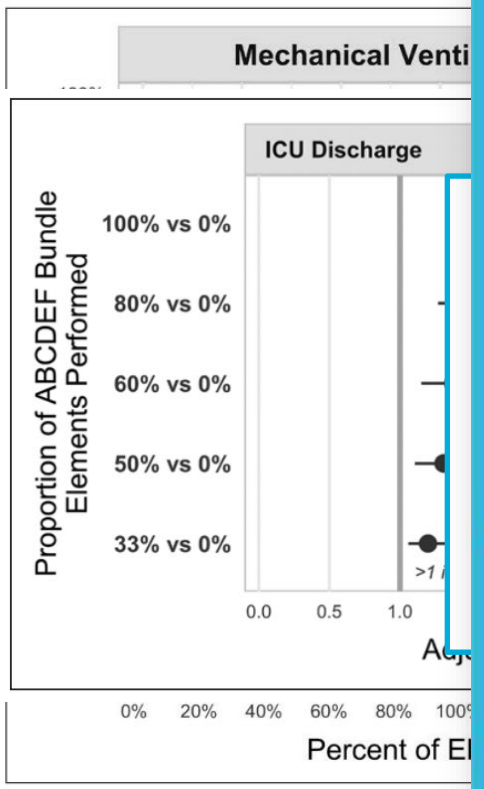
Geen of lichte sedatie

Non-farmacologische interventies

Tijdens IC opname

ABCDEF bundel

N = 15 226; 68 IC



A

- Assess, Prevent, and Manage Pain

ATs) and
Ts)

age

erment

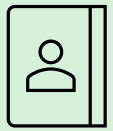
Pun et al, CCM, 2019

Radboudumc

Implicatie voor de klinische praktijk

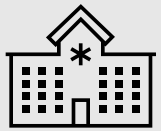
Beperken van psychologische impact van een IC opname? → Beperk verstoringen in herinneringen!

Geen of lichte sedatie



IC dagboek

Non-farmacologische interventies



IC nazorgpoli (incl. IC bezoek)

Tijdens IC opname

Na ontslag

Dank voor uw aandacht

Een patiëntgerichte IC is teamwork!

Rens Kooken
Arts-onderzoeker Intensive Care
Radboudumc
Rens.Kooken@radboudumc.nl

Vragen?

Scan de QR-code voor het doorsturen van uw vragen

- Uw naam (optioneel)
- Naam van de spreker
- Uw vraag

U kunt het formulier meermaals gebruiken/invullen

03

Patiënt- en familiegerichte zorg

De impact van communicatie

Dr. Bram Tilburgs | Post-doc onderzoeker IC Radboud UMC

Atos
Coloplast Group

Patiënt en familie gerichte zorg: de impact van communicatie

Bram Tilburgs

Atos
Coloplast Group

Radboudumc

Patiënten casus

De intensive care

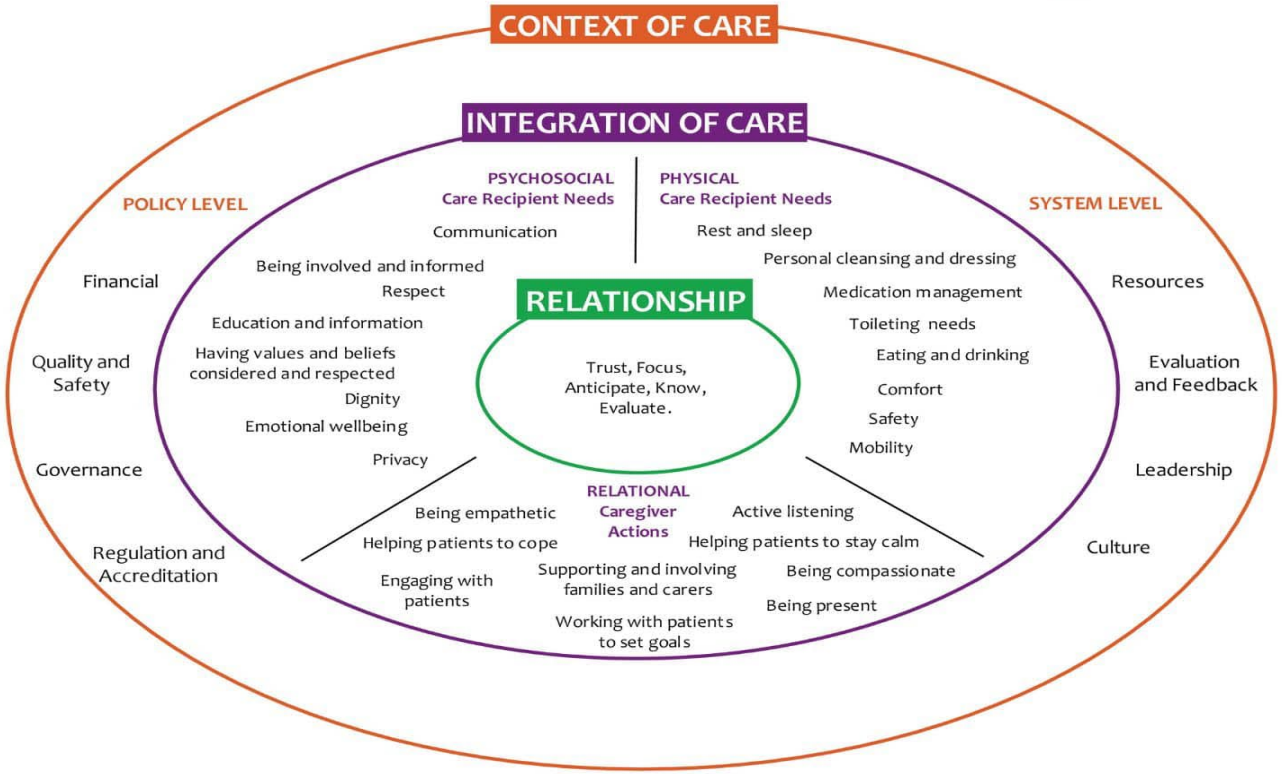
- IC-opnames zijn stressvol:
  - Patiënten: pijn, delier, immobiliteit, slaap gebrek, dorst, en onzekerheid
  - Familieleden: emotionele belasting, vermoeidheid en symptomen van angst, depressie of PTSS
  - Langetermijn gevolgen:
    - Patiënten: Post Intensive Care Syndroom (PICS)
    - Naasten: PICS-Family (PICS-F)

Patiënt en familie gerichte zorg

- Patiënt- en familiegerichte zorg (PFGZ)
  - Richt zich op waardigheid, respect, informatie-uitwisseling, samenwerking en participatie
  - Tussen zorgverleners, patiënt, naasten
  - Een aanbevolen benadering om de belasting van de IC te verminderen
  - PFGZ wordt niet consistent toegepast

Framework - English

INTERNATIONAL LEARNING COLLABORATIVE



https://ilccare.org/the-fundamentals-of-care-framework/

Bewijs voor voordelen PFGZ ??

Patients' and nurses' experiences of fundamental nursing care: A systematic review and qualitative synthesis

Claire Pentecost BSc (Hons), PhD, Julia Frost BA (Hons), MSc, PhD, Holly V. R. Sugg LLB Hons, MSc, PGDip, PhD, Angelique Hilli PhD ... See all authors

Patient- and family-centered care interventions for improving the quality of health care: A review of systematic reviews

Myonghwa Park, Thi-Thanh-Tinh Giap, Mihyun Lee, Hyun Jeong, Miri Jeong, Younghye Go

Intensive care unit length of stay is reduced by protocolized family support intervention: a systematic review a meta-analysis

Systematic

Volume 45

Issues in Family

An evaluation of family-centered care services a

Patient-centered care, nurse work environment and implicit rationing of nursing care in Swiss acute care hospitals: a cross-sectional multi-center study ☆

efanie Bachnick, Dietmar Ausserhofer, Marianne Baernholdt, Michael non, On behalf of the Match RN study group

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Contents lists available at ScienceDirect

Intensive & Critical Care Nursing

journal homepage: www.sciencedirect.com/journal/intensive-and-critical-care-nursing

Review Article

The effectiveness of family participation interventions for the prevention of delirium in intensive care units: A systematic review

Marli Lopo Vitorino [a,b,*], Adriana Henriques [a,b], Graça Melo [a,b], Helga Rafael Henriques [b]

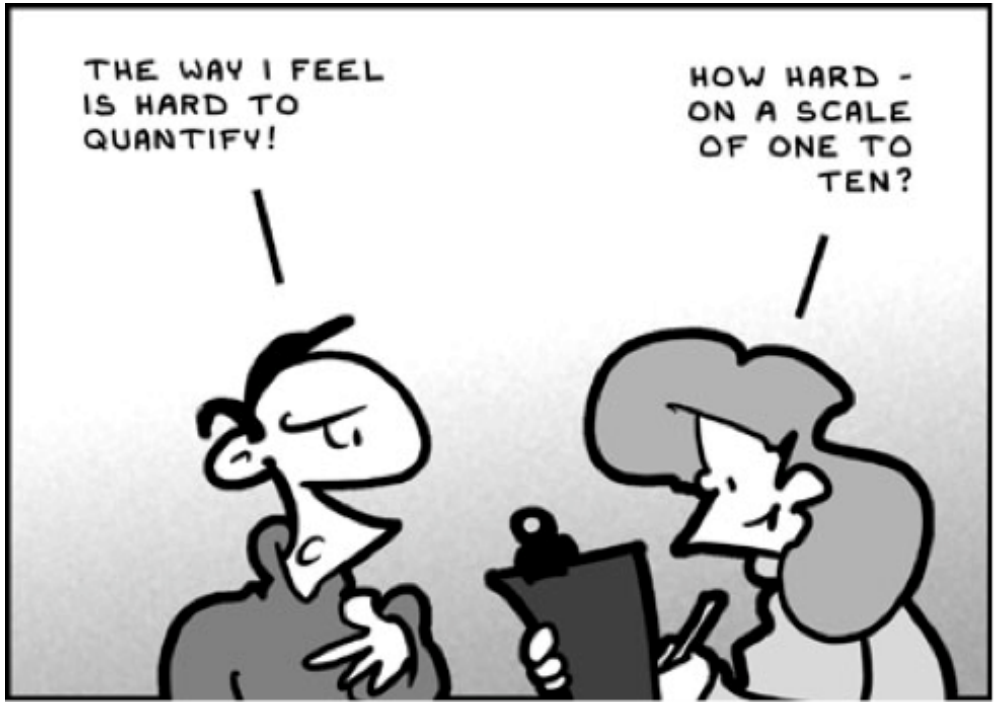
[a] University of Lisbon/Nursing School of Lisbon, Lisbon, Portugal
[b] Nursing Research, Innovation and Development Centre of Lisbon (CIDNUR), Nursing School of Lisbon, Lisbon, Portugal

Doelen

- Wat zijn belemmerende en bevorderende factoren voor PFGZ op de IC
- Welke interventies voor PFGZ zijn belangrijk en haalbaar

Interviews

- Semigestructureerde focusgroepen
  - Oud-IC-patiënten en familieleden (>18 jaar en IC-opname >48 uur)
  - IC-verpleegkundigen
  - IC-zorgassistenten
  - IC-artsen
- Audio opgenomen en getranscribeerd
- Thematische analyse (inductief)



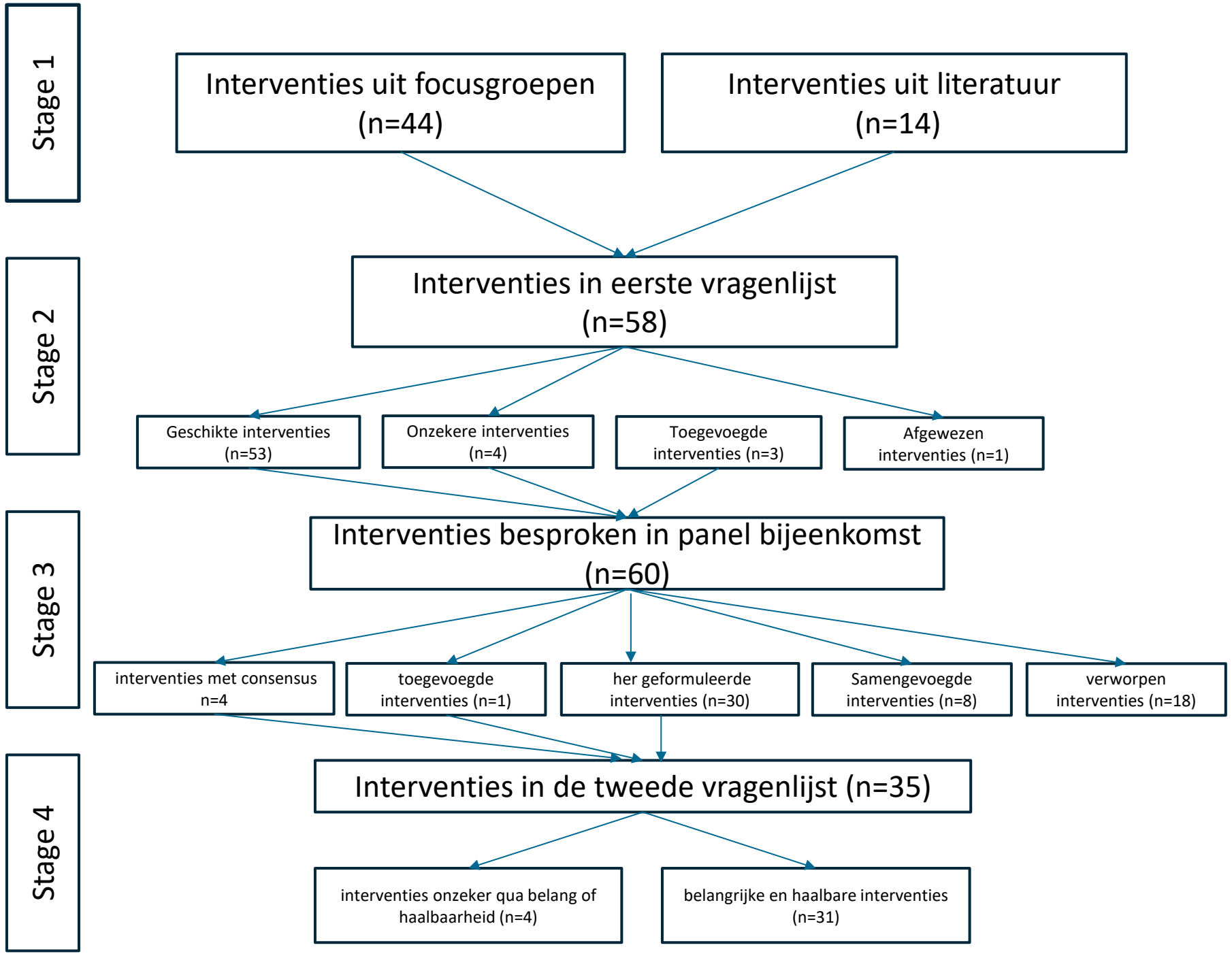
Delphi studie

- Een Delphi-studie is een methode om consensus te bereiken tussen experts
  - Meerdere beoordelingsrondes
  - Combineert literatuur, survey data en consensus bijeenkomsten
- Doel: bepalen welke PFGZ-interventies belangrijk én haalbaar zijn

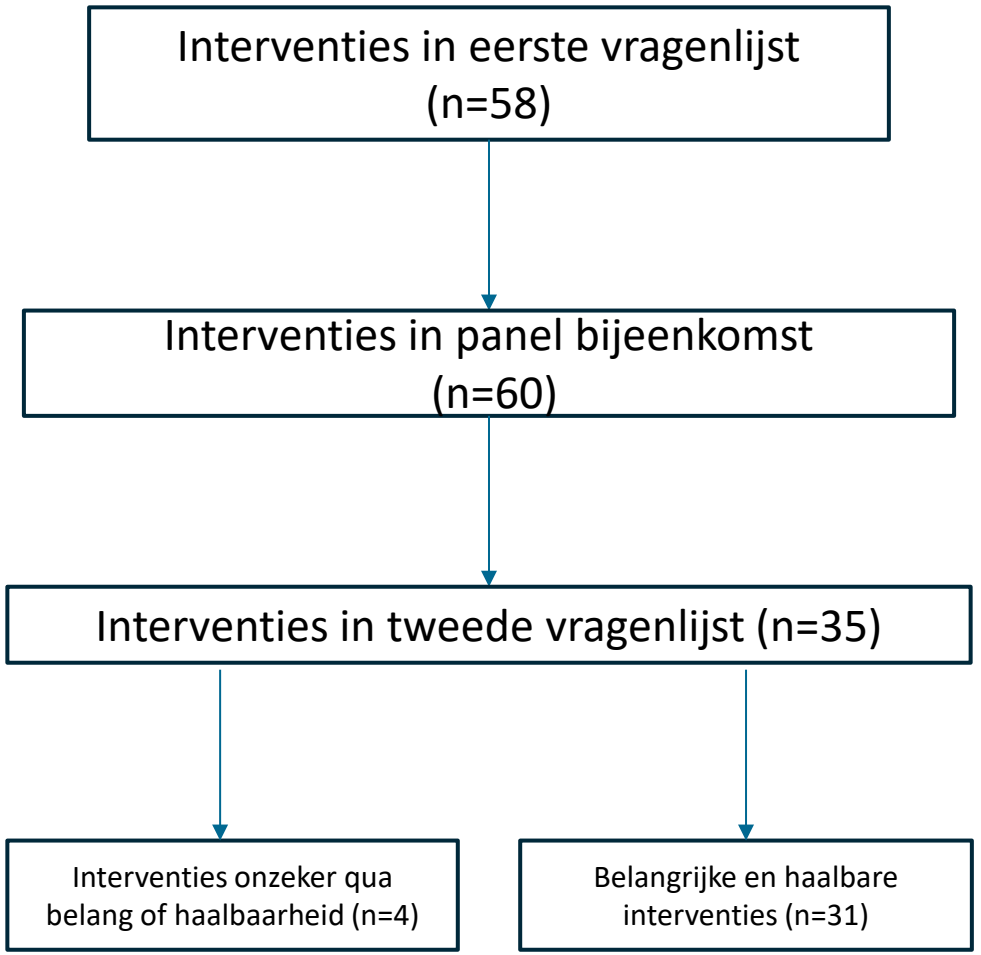
Delphi studie

1. Ideeën verzamelen:
    - literatuur + focusgroepen → lijst interventies
2. Beoordelen:
    - deelnemers scoren belang & haalbaarheid
3. Panel bijeenkomst:
    - bespreken interventies zonder consensus
4. Definitieve scores:
    - belang en haalbaarheid

IN


Stage 1
Interventies uit focusgroepen (n=44)
Interventies uit literatuur (n=14)
Stage 2
Interventies in eerste vragenlijst (n=58)
Geschikte interventies (n=53)
Onzekere interventies (n=4)
Toegevoegde interventies (n=3)
Afgewezen interventies (n=1)
Stage 3
Interventies besproken in panel bijeenkomst (n=60)
interventies met consensus n=4
toegevoegde interventies (n=1)
her geformuleerde interventies (n=30)
Samengevoegde interventies (n=8)
verworpen interventies (n=18)
Stage 4
Interventies in de tweede vragenlijst (n=35)
interventies onzeker qua belang of haalbaarheid (n=4)
belangrijke en haalbare interventies (n=31)

Resultaten


Interventies in eerste vragenlijst (n=58)
Interventies in panel bijeenkomst (n=60)
Interventies in tweede vragenlijst (n=35)
Interventies onzeker qua belang of haalbaarheid (n=4)
Belangrijke en haalbare interventies (n=31)

Resultaten


Familie-aanwezigheid en -participatie
Ondersteuning van patiënt en familie
Communicatie met patiënt en familie
Organisatorische en omgevingsaspecten
Inzet van specifieke consulten en IC-teamleden
Communicatie tussen zorgverleners
Ontslag en nazorg
Belangrijke en haalbare PFGZ interventies

Resultaten

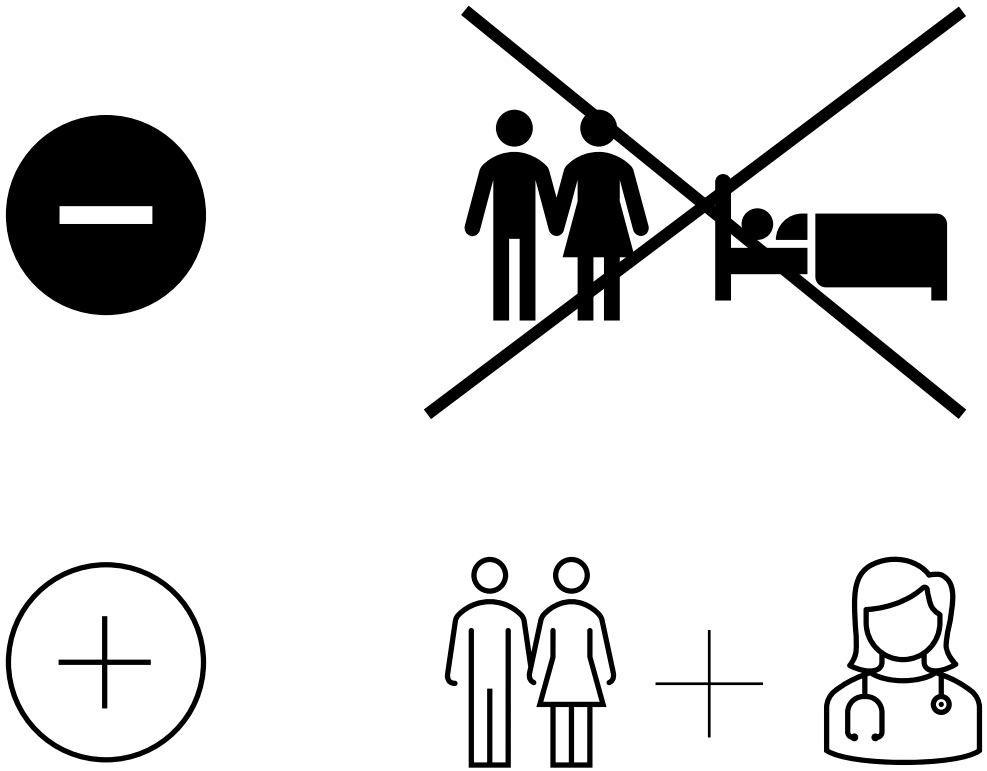
Familie aanwezigheid en participatie

De patient wordt zo veel mogelijk gestimuleerd om deel te nemen aan de zorg

In overleg wordt een dagschema opgesteld. Dit schema wordt afgestemd op de behoeften en mogelijkheden van de patiënt

Resultaten

Familie aanwezigheid en participatie



Resultaten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Ontslag en nazorg
Belangrijke en haalbare PFGZ interventies

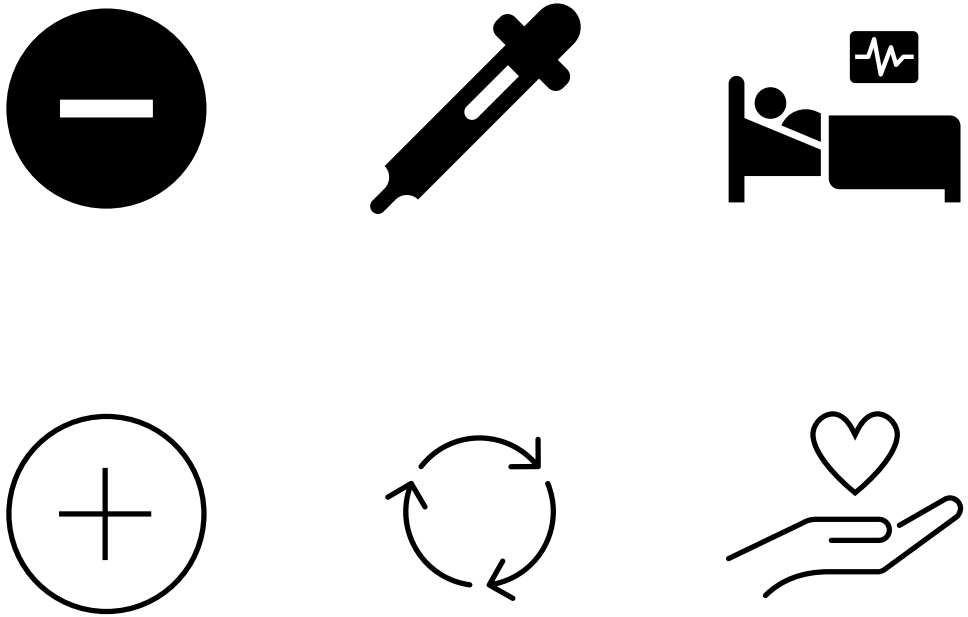
Resultaten

Ondersteuning patiënt en familie

De patiënt en de familie krijgen tijdens de IC-opname psychologische ondersteuning afgestemd op hun behoeften

Resultaten

Ondersteuning patiënt en familie



Resultaten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Organisatorische en omgevingsaspecten
Inzet van specifieke consulten en IC-teamleden
Communicatie tussen zorgverleners
Ontslag en nazorg
Belangrijke en haalbare PFGZ interventies

Resultaten

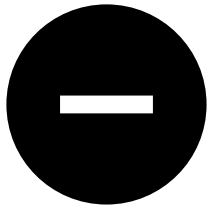
Communicatie met patiënt en familie

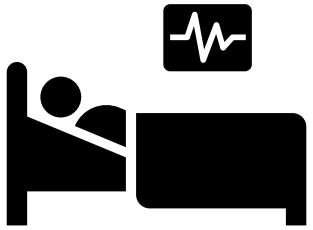
Er wordt minstens wekelijks een gesprek gepland met de patiënt, de familie, verpleegkundige en de intensivist. Hier wordt de toestand van de patiënt, de zorg en het behandelplan besproken

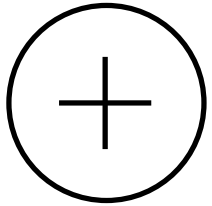
De contactpersoon van de patiënt wordt, op de hoogte gehouden van de toestand van de patiënt. De verpleegkundige en de contactpersoon dragen hierin een gedeelde verantwoordelijkheid

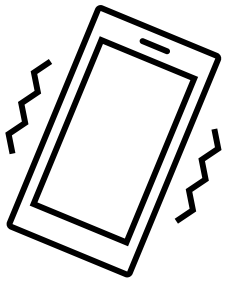
Resultaten

Communicatie met patiënt en familie









Resultaten


Familie-aanwezigheid en -participatie
Ondersteuning van patiënt en familie
Communicatie met patiënt en familie
Organisatorische en omgevingsaspecten
Inzet van specifieke consulten en IC-teamleden
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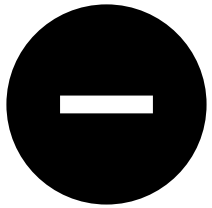
Resultaten

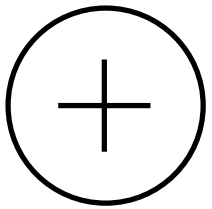
Organisator-ische en omgevings-aspecten

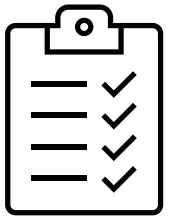
Er wordt een ‘getting to know you’-poster gebruikt om persoonlijke informatie, wensen en behoeften van de patiënt zichtbaar te maken.

Resultaten

Organisator-ische en omgevings-aspecten







Resultaten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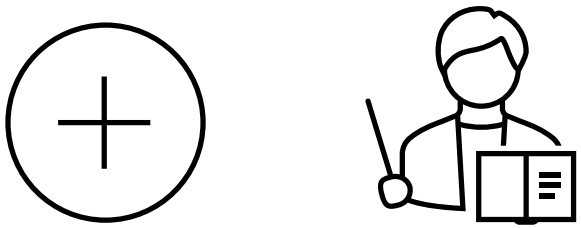
Resultaten

Inzet van specifieke consulten en IC-teamleden

Er wordt aandacht besteed aan de pedagogische begeleiding van kinderen. Er is ook informatiemateriaal beschikbaar.

Resultaten

Inzet van specifieke consulten en IC-teamleden



Resultaten


Familie-aanwezigheid en -participatie
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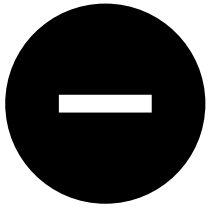
Resultaten

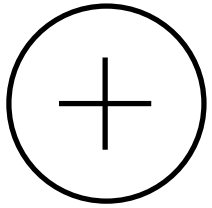
Communicatie tussen zorgverleners

PFGZ is de norm. Zorgprofessionals stimuleren elkaar om PFGZ toe te passen en geven elkaar hierin feedback.

Resultaten

Communicatie
tussen zorgverleners





Resultaten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Resultaten

Ontslag en nazorg

De patiënt en de familie hebben de mogelijkheid om gebruik te maken van een IC-nazorgpolikliniek en/of om de IC opnieuw te bezoeken

Na ontslag van de IC wordt elke IC-patiënt bezocht door een IC-verpleegkundige of IC-arts op de verpleegafdeling

Resultaten

Ontslag en nazorg

Resultaten


Familie-aanwezigheid en -participatie
Ondersteuning van patiënt en familie
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Take home….

- Goede communicatie is de kern van PFGZ
- (Familie)betrokkenheid verbetert de zorgervaring
- PFGZ interventies kunnen grote impact hebben
- PFGZ vraagt om teamwork
- en een cultuur waarin samenwerking en continuïteit centraal staan.

Vragen/opmerkingen

Bram.Tilburgs@radboudumc.nl

Vragen?

Scan de QR-code voor het doorsturen van uw vragen

- Uw naam (optioneel)
- Naam van de spreker
- Uw vraag

U kunt het formulier meermaals gebruiken/invullen

Pauze

11:00 – 11:30

Vragen?

Scan de QR-code voor het doorsturen van uw vragen

- Uw naam (optioneel)
- Naam van de spreker
- Uw vraag

U kunt het formulier meermaals gebruiken/invullen

04

Decannulation ahead

From evidence to everyday practice in neurological patients

Prof. Dr. Rainier Dziewas | Neuroloog Hospital Osnabrück
President ESSD

Atos
Coloplast Group

A special thanks to ESSD

Atos
Coloplast Group

Decannulation ahead: from evidence to everyday practice in neurological patients

Rainer Dziewas

Department of Neurology and Neurorehabilitation

Klinikum Osnabrück - Academic Teaching Hospital of the University of Münster

Outline

- General treatment options
  - Guideline suggestions & basic principles & education
- The A^2BC approach (I)
  - Targeted diagnostic procedures
- The A^2BC approach (II)
  - Targeted therapeutic interventions
- The comprehensive decannulation algorithm
  - Combining fast-track and standard-track pathways
- Looking into the New England Journal of Medicine
  - Fast-track decannulation works

What do guidelines suggest?

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Dziewas *et al. Neurological Research and Practice* (2021) 3:23
https://doi.org/10.1186/s42466-021-00122-3

Neurological Research and Practice

GUIDELINES **Open Access**

Diagnosis and treatment of neurogenic dysphagia – S1 guideline of the German Society of Neurology

Check for updates

Schweizerische Neurologische Gesellschaft
Société Suisse de Neurologie
Società Svizzera di Neurologia
Swiss Neurological Society

dbs Deutscher Bundesverband für akademische Sprachtherapie und Logopädie

logopädieaustria

ESGENA European Society of Gastroenterology and Endoscopy Nurses and Associates

SCHWEIZERISCHE GESELLSCHAFT FÜR INTEN
SOCIÉTÉ SUISSE DE MÉDECINE INTENSIVE
SOCIETÀ SVIZZERA DI MEDICINA INTENSIVA
SGI-SSMI-SSMI

DGPP Deutsche Gesellschaft für Phoniatrie und Pädaudiologie e.V.

DGG Deutsche Gesellschaft für Geriatrie e.V.

DEUTSCHE SCHLAGANFALL GESELLSCHAFT German Stroke Society

DGNR

DGIM

DGN

1913 DGVS Deutsche Gesellschaft fü Gastroenterologie, Verdauungs- und Stoffwechselkrankheiten

sgp

Deutsche Gesellschaft für DGEA Endoskopiefachberufe e.V.

dbl

ORL Oto-Rhino-Laryngologie

DGD

DIVI Deutsche Interdisziplinäre für Intensiv- und Notfallm

egnr

European Society for Swallowing Disorders ESSD

ÖDBAG

Schweizerische Gesellschaft für Dysphagie (SGD)
Société Suisse pour la Dysphagie
Società Svizzera per la Disfagia

ÖGN

DEUTSCHE GESELLSCHAFT FÜR HALS-NASEN-OHREN-HEILKUNDE KOPF- UND HALS-CHIRURGIE

Looking into the guidelines

- **Recommendation 22**: Patients with a tracheal cannula should be managed by a **multi-professional team.**
- **Recommendation 23**: In tracheotomized patients with the therapeutic aim of decannulation, **swallowing function**, **oropharyngeal secretion management**, **vigilance and ability to cooperate**, **respiratory function**, and **airway anatomy**, the **voluntary and reflexive cough**, as well as the **amount, nature and clearing of the bronchial secretion**, should be evaluated regularly.
- **Recommendation 24**: In tracheotomized patients, swallowing function should be evaluated with **FEES** and in particular the parameters **“secretion management”, “spontaneous swallowing rate”, and “laryngeal sensitivity”** should be investigated.

Looking into the guidelines

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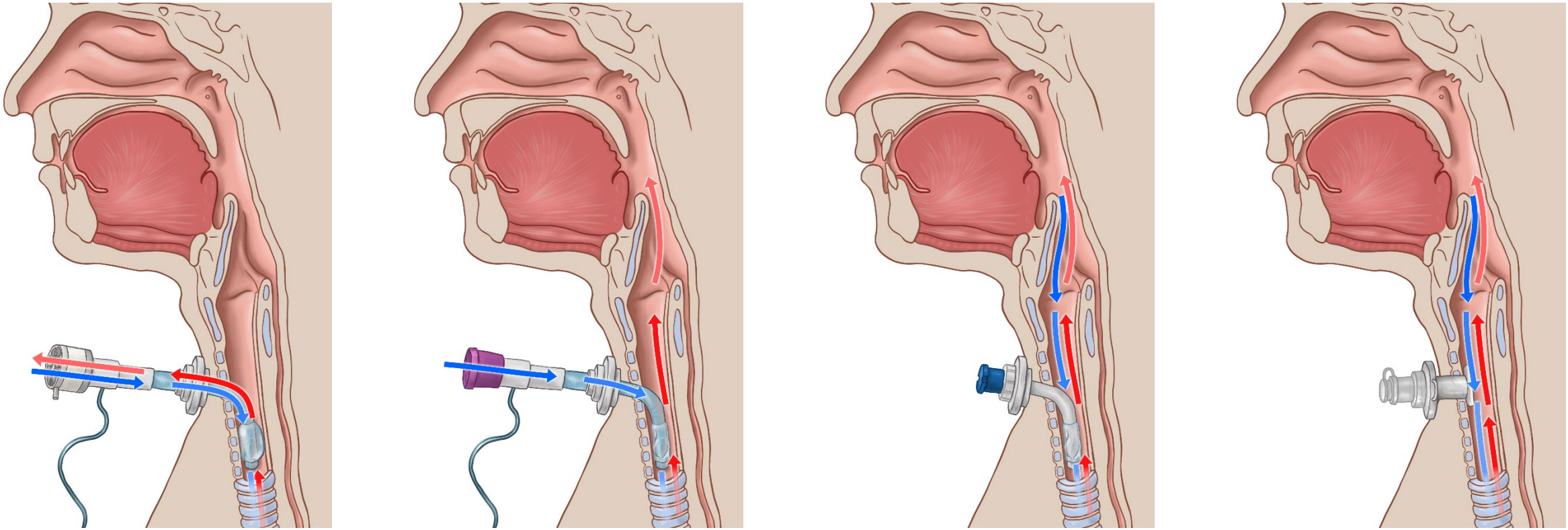
- **Recommendation 25**: In tracheotomized patients, the **location, fit and patency of the cannula, presence of granulation tissue and the placement of any existing fenestration** should be checked regularly.
- **Recommendation 26**: If patients are intended to be weaned gradually from the tracheal cannula, a **physiological air flow through the upper airway** should be established to improve pharyngo-laryngeal sensitivity. Therefore, **the tracheal cannula's cuff should be intermittently deflated**, and the cannula be capped or a oneway speaking valve used.
- **Recommendation 27**: During gradual weaning of the tracheal cannula, if necessary, in the clinical context, **the diameter of the inner cannula should be downsized** to reduce the airway resistance.
- **Recommendation 28**: A definitive decannulation is usually possible if the **cannula's cuff can be continuously deflated with the cannula simultaneously being capped for 24-48 h** without complications.

Restoring physiological airflow



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Restoring physiological airflow

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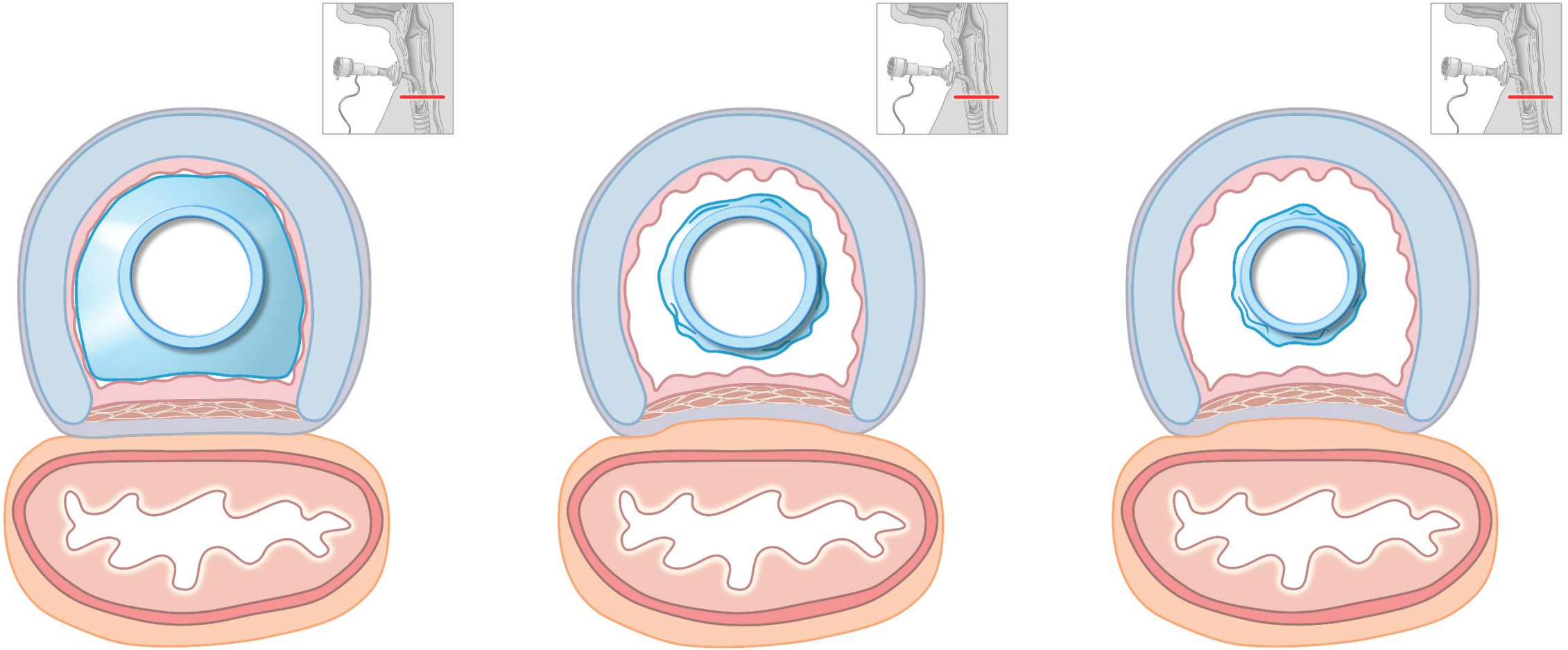

Warnecke, Dziewas, Langmore; Kohlhammer 2025; © Medical Graphics, Cologne

Education

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Nervenarzt
https://doi.org/10.1007/s00115-023-01598-x
Angenommen: 5. Dezember 2023

Curriculum „Trachealkanülenmanagement in der Dysphagietherapie“

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Education

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Tab. 2 Inhalte des TKM-Basisseminars und ReferentInnen/Berufsgruppen

Basisthemen	Grundlagen, Erwerb von Kenntnissen (12 UE)	30 UE[a]	Referent-Innen[b]
1. Tracheotomie	Indikationen, Kontraindikationen bzw. Alternativen, Zeitpunkt und Arten der Tracheotomie	0,5	FÄ LogaS
	Implikationen zu Stabilität des Tracheostomas		
	Komplikationen der Tracheotomie		
	Auswirkungen der Tracheotomie auf Atemtiefe (Totraumverkleinerung)		
	Luftstromführung, Geruch, Geschmack, Husten, Phonation und Kommunikation		
2. Trachealkanülen (TK)	Indikationen, Komponenten und Varianten: Cuff, einlumige Kanüle und Kanüle mit Innenseele, Techniken der Kanülenfixierung, Fenestrierung, subglottische Absaugung, Vocal-Aid-Funktion, Beatmungskanülen, Platzhalter, Stomapflaster	1,5	FÄ LogaS Pfl-ITS
	Kriterien zur TK-Auswahl: Funktion, Größe, Außen- und Innendurchmesser, Länge, Material, Krümmungswinkel, Lage der Fenestrierung, Länge des Tracheostomakanals, Erkrankungsstadium		
	Bestimmung des Luftwegs mit unterschiedlichen TK-Varianten		
	Cuff-Blockung, Blockungsarten (Nieder-, Hochdruck, Foam, Lanz), Cuff-Druck-Kontrolle, Entblockung, Wechsel der Innenkanülen, Ventile und Verschlusskappen		
3. Absaugen	Indikationsstellung	0,5	FÄ LogaS Pfl-ITS
	Vorbereitung und Material		
	Geschlossene Absaugsysteme		
	Transnasales, Innerkanüläres, endotracheales Absaugen		
	Risiko- und Komplikationsmanagement, persönliche Schutzausrüstung		
4. Pflege von Tracheostoma (TS) und TK	TK-Reinigung, TS-Pflege	0,5	FÄ LogaS Pfl-ITS
	Tracheostomakompressen		
	Fixiertechniken und Prophylaxe von Stomawaltung u. a. Komplikationen		
	Befeuchtung und Entzündungsprophylaxe		
	TS-Komplikationen: Entzündungen, Stenosen, Granulationen, Blutungen, Ulzerationen		
5. Trachealkanülenwechsel (TKW)	Wechselintervalle und Indikationsstellungen	0,5	FÄ LogaS Pfl-ITS
	Material, Vorgehen, Risiken		
	TKW mit/ohne Führungsdraht		
	Möglichkeiten der TK-Lagekontrolle		
6. TK-assoziierte Komplikationen	Cuff-assoziierte Komplikationen	1,0	FÄ LogaS
	Fehllagen der TK (z. B. verdeckte Fenestrierung, tracheale und stomatale Druckläsionen)		
	Obstruktionen		
	Luftverlust parastomal und Abdichttechniken		
	Stridor, Trachealstenosen, Tracheomalazie, Blutungen, Hautemphysem		
	Diagnostik und Management TK-assoziierter Komplikationen		
7. Notfallsituationen	Monitoring	0,5	FÄ LogaS Pfl-ITS
	Kenntnis gestaffelter Notfallschemata		
	Notfallinterventionen im Kontext der TKM-Dysphagiebehandlung		
8. Klinische und instrumentelle Diagnostik im TKM	Screeningverfahren und klinische Schluckuntersuchung: Zeitpunkt und Vorgehen	2,0	LogaS FÄ
	Aspirationsdiagnostik/Färbetests: Indikation, Reliabilität, Durchführung		
	Instrumentelle TKM-Diagnostik: endoskopische (FEES) und radiologische (VFSS) Diagnostik, TK-Inspektion, Tracheoskopie und Bronchoskopie		
	Diagnostik der Hustenfunktion: quantitative und qualitative Methoden		
9. Therapeutische Interventionen	Kriterien und Kontraindikationen für Entblocken und sukzessives Okklusionstraining, Unterschiede Okklusion bei Verschlusskappen, exspiratorische Okklusion bei Sprechventilen	1,5	LogaS FÄ
	Indikation und therapeutische Intention der Luftstromführung und der verschiedenen Okklusionsformen, Effekte auf Sekret- und Speichelmanagement, Phonation und Hustenfunktion		
10. Orale Ernährung	Möglichkeiten und Risiken des oralen Kostaufbaus im Kontext des TKM	0,5	LogaS FÄ
11. Speichel- und Sekretmanagement	Dysphagietherapeutische Maßnahmen	0,5	LogaS FÄ Pfl-ITS
	Befeuchtung, Sekretmodulation, Sekretexpektoration		
	Medikamentöse Speichel- und Sekretreduktion		

Tab. 2 (Fortsetzung)

12. TK-Weaning	Dysphagietherapeutische Maßnahmen zur Unterstützung der Dekanülierungsfähigkeit: Unterstützung von Speichelmanagement, Atemfunktion und Hustenneffektivität	1,0	LogaS FÄ
	Dekanülierungspfade: spontane und gestufte Pfade		
	Indikation und Effekte des Downsizing, Anpassung des TK-Typs		
	Risikoabwägung und Absprachen im multidisziplinären Team		
13. Dekanülierung	Voraussetzungen und Kriterien für die Dekanülierbarkeit und Dekanülierungserfolg	1,0	LogaS FÄ
	Vorgehen bei der Dekanülierung		
	Dekanülierungshindernisse (z. B. persistierende schwere Dysphagie, Insuffiziente Hustentriggerung und Hustenkraft, oropharyngeales und bronchiales Sekret, Beatmungsnotwendigkeit, Stenosen)		
	Schwierige Dekanülierungen (z. B. Platzhaltereinsatz)		
	Prozedere nach der Dekanülierung, Verschluss des Tracheostomas und Komplikationsprophylaxe		
	Techniken und Probleme der Platzhalteranlage, einschl. endoskopischer Kontrolle		
14. Vorgehen bei nichtdekanülierbaren Patientinnen	Gründe der Nichtdekanülierbarkeit (z. B. supra-/subglottische und glottale Stenosen, funktionelle Atemwegsstenosen, Insuffizientes Sekretmanagement, Insuffiziente Reinigungsfunktionen)	0,5	LogaS FÄ
	Epithelialisierung des Tracheostomas, TK-Anpassung		
	Möglichkeiten für Sprech-, Ess- und Trinkfunktion		
	TKM in der Pädiatrie (1 UE)		
15. TK-Versorgung in der Pädiatrie	TK-Auswahl bei Säuglingen und Kindern (ggf. Nichtanwendbarkeit der Tubusregel zur Sicherung eines ausreichenden TK-Innendurchmessers)	1,0	FÄ LogaS Pfl-ITS
	Komplikationen und Prävention: akzidentelle Dekanülierung, Druckulzera, Hypergranulation, subglottische und tracheale Stenosen, Infektionen		
	Familiäres Umfeld: Interaktion, Schulung		
16. Dekanülierung	Pädiatrische Dekanülierungspfade		
	Sprechventile und Gefahr von CO_2-Retentionen		
	Rechtliche und formale Aspekte (1 UE)		
17. Rechtliche Aspekte	Delegationsprinzip (materielle und formale Qualifikation, Pflichten der Delegierenden und der Delegationsnehmerinnen, Insb. gegenseitige Information, Absprachen über das Vorgehen, Übernahmeverantwortung)	0,5	Juristen FÄ LogaS
	Medizinproduktegesetz		
18. Formale Aspekte	Multidisziplinäres Behandlungsteam: Aufgaben und Absprachen		
	Benefit und Implikationen standardisierter Prozesse, z. B. Absaugen, TK-Pflege, Dekanülierung		
	TKM auf der Intensivstation (ICU; 4 UE)		
19. ICU-spezifische Ätiologien	Multifaktorielle Dysphagieursachen und Komplikationen, Postextubationsdysphagie, ICU Acquired Weakness	0,5	FÄ LogaS
	Veränderte Luftstromführung bei TK und Beatmung		
	Ösophagogastrale Motilitätsstörungen		
	Ventilatorinduzierte Zwerchfelldysfunktion		
	Akutes Lungenversagen (ARDS)		
20. Beatmung und Intubation	Anatomie und Physiologie der Atmung	1,5	FÄ Pfl-IST LogaS
	Pathophysiologie und Beatmungsindikationen		
	Funktion und Grundbegriffe maschineller Beatmung, invasive und nichtinvasive Beatmungstherapie, Beatmungsmodi		
	Endotracheale Intubation, Komplikationen der Intubation		
	Risiken und Langzeitfolgen der Beatmung		
21. ICU-Besonderheiten des TKM	Luftstromführung mit TK unter Beatmung	1,5	LogaS FÄ
	Above-Cuff-Vocalization		
	Leckage-Beatmung		
	Kriterien für Spontanatemversuche		
	Kriterien für die Cuff-Entblockung		
	Dekanülierungspfade und -kriterien		
	Physikalische und therapeutische Maßnahmen, mechanische In- und Exsufflatoren, NIV, High-Flow-Therapie, atmungstherapeutische Maßnahmen		

Tab. 2 (Fortsetzung)

22. Funktionelle Dysphagietherapie – ICU	Lagerung und funktionelle Frühmobilisation	1	LogaS FÄ
	Orale Hygiene		
	Neuromodulatorische Therapieverfahren		
Praxisthemen	**Erwerb praktischer Handlungskompetenzen (11 UE)**		
Trachealkanülen-Handling	Blocken/Entblocken der TK	2,0	LogaS FÄ Pfl-ITS
	Wechsel der Innenkanülen (fenestriert, nichtfenestriert)		
	Verwenden von HME-Filtern, Verschlusskappen und Sprechventilen		
	Sauerstoffzufuhr		
Physiologische Luftstromführung	Luftstromführung mit fenestrierter/nichtfenestrierter Innenkanüle/TK	1,5	LogaS FÄ
	Luftstromführung (Fingerverschluss, Sprechventil, Verschlusskappe)		
	Übungen zur Luftstromführung bei pädiatrischen Patientinnen		
	Übungen zur Luftstromführung und zur Above-Cuff-Vocalization bei beatmeten Patientinnen		
Färbetests/ Absaugen	Absaugen transnasal, Innerkanülär, endotracheal (am Übungsdummy), atraumatisches Absaugen	2,0	LogaS FÄ Pfl-ITS
	Mind. 10-mal je Teilnehmerin/Modalität		
	Durchführung von Färbetests		
Komplikationen und Notfallsituationen	Training Ablauf von Notfallschemata für die unterschiedlichen Komplikationssituationen; Dekanülierung/Rekanülierung (Trachealkanülenwechsel mit und ohne Führungsdraht)	2,5	FÄ Pfl-ITS LogaS
	Mind. 10-mal je Teilnehmerin		
Übungen zur Diagnostik, Fallbesprechungen	Verdeutlichung, Diskussion und Vertiefung der Inhalte durch Fallbeispiele	3	FÄ LogaS
	Entwicklung eines Diagnostik- und Behandlungsplans		
	Befundinterpretation nach klinischer oder instrumenteller Untersuchung bzw. Färbetest		

FEES flexible endoskopische Evaluation der Schluckfunktion, *VFSS* Videofluoroskopie des Schluckakts, *PLF* physiologische Luftstromführung, *NIV* nichtinvasive Beatmung, *ICU* Intensive Care Unit

[a] Basisseminar: 29 UE Unterricht + 1 UE Abschlussprüfung

[b] Akkreditierbare ReferentInnen: *FÄ* FachärztInnen (Chirurgie, HNO, Intensivmedizin, Innere Medizin, Neurologie, Phoniatrie und Pädaudiologie, Pneumologie) mit 2-jähriger Erfahrung in der Behandlung tracheotomierter Patientinnen, *LogaS* Logopädinnen, akademische Sprachtherapeutinnen mit TKM-Ausbildungszertifikat, *Pfl-ITS* Fachpflegekräfte für Intensivpflege und Anästhesie oder Pflegefachkräfte mit 2-jähriger Intensiverfahrung

Education

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Tab. 3 Prüfungen zum TKM-Zertifikat

Theoretische Prüfung (Basisseminar)	*Mind 25 Fragen.* dabei mindestens 1 Frage aus jedem der 22 Basisthemen (◘ Tab. 2)
Praktische Prüfung (Basisseminar)	*Mind. 45 min, Prüfungsbereiche:* Trachealkanülen-Handling Physiologische Luftstromführung und Okklusionstraining Färbetests/Absaugen Komplikationen und Notfallinterventionen
Fallberichte	*2 Fallberichte* oder analoge Leistungen (siehe 3.4)
Abschlussprüfung	*Prüfungsgespräch (mind. 30 min):* Erläuterung und vertiefende Fragen zu den eingereichten Fallberichten, Grundlagenkenntnissen und praktischen Handlungskompetenzen, 2 PrüferInnen bzw. 1 PrüferIn und 1 BeisitzerIn[a]; SupervisorIn und PrüferIn dürfen nicht identisch sein

[a]BeisitzerInnen müssen das TKM-Zertifikat haben

Tab. 4 Eingangsvoraussetzungen und Prüfung im TKM-Ausbildungs-Zertifikat

Abschnitt	Erläuterung
Eingangsvoraussetzungen	TKM-Zertifikat
	Mind. 4-jährige spezifisch berufspraktische Tätigkeit (Dysphagietherapie)
	Mindestens 2-jähriger Tätigkeitsschwerpunkt im Bereich TKM nach Erwerb des TKM-Zertifikats mit mind. 40 behandelten tracheotomierten DysphagiepatientInnen
	Nachweis von insgesamt 30 direkt supervidierten und insgesamt 100 indirekt supervidierten TKM-TE (mind. 5 unterschiedliche PatientInnen)[a]
	4 Fallberichte[a] (davon mind. ein komplexer klinischer Verlauf) oder analoge Leistungen
Prüfung	*Prüfungsgespräch (mind. 60 min), Themenbereiche:*
	Erläuterungen zu den eingereichten Fallberichten
	Kenntnisse der empirischen Basis, klinischer Transfer
	Problemstellungen und Lösungen in komplexen klinischen Situationen, bei pädiatrischen TK-PatientInnen und im ICU-Setting
	Einschätzung und Reflexion unterschiedlicher Vorgehensweisen und Behandlungspfade im TKM
	Erfahrungen, Hürden und Motivation in der Ausbildung von TKM-TherapeutInnen
	2 PrüferInnen bzw. 1 PrüferIn und 1 BeisitzerIn[b]

TKM Trachealkanülenmanagement, *TE* Therapieeinheiten
[a]Die supervidierten Behandlungseinheiten und Fallberichte aus dem TKM-Zertifikat werden angerechnet
[b]BeisitzerInnen müssen das TKM-Zertifikat haben

Education

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Deut
Gese
www.

TeilnehmerIn:
Account erstellen
upload Dokumentation
Verwaltungsgebühr

→

Geschäftsstelle (COCS):
formale Prüfung der Dokumente, ggf. Nachfrage
Email: Bestätigung der Prüfungsanmeldung und PrüferInnen-Liste

→

TeilnehmerIn:
schreibt PrüferIn an und vereinbart Prüfungstermin

↓

PrüferIn:
bestätigt Prüfungsvereinbarung an DGD Geschäftsstelle (COCS)
Unterlagen werden im Prüfer-account freigeschaltet

→

PrüferIn:
inhaltliche Prüfung der Unterlagen, v.a. Fallberichte, ggf. Nachfragen, Prüfungsvorbereitung

→

PrüferIn + BeisitzerIn:
Durchführung der Prüfung – Erstellen Prüfungsprotokoll
Bestätigung der bestandenen Prüfung im Prüferaccount

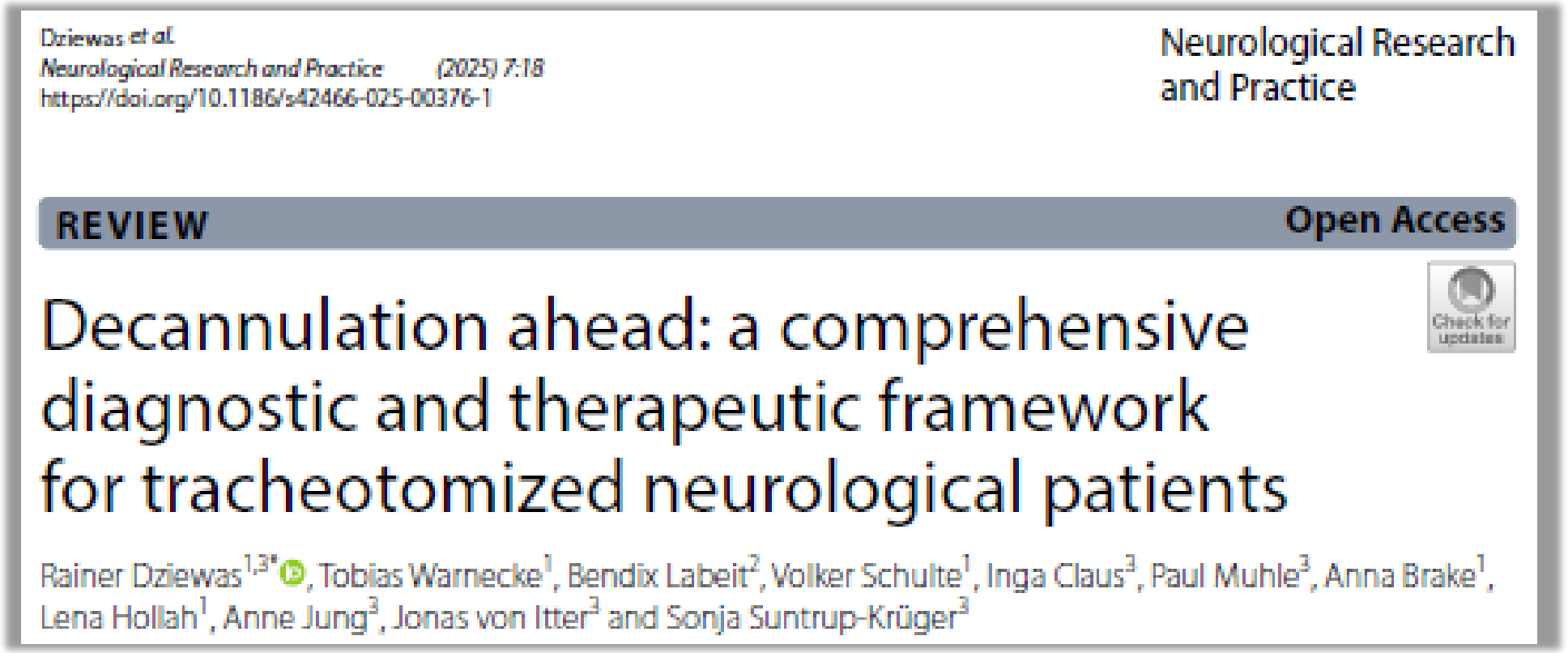
↓

Geschäftsstelle (COCS):
stellt Zertifikat nach Bestätigung der bestandenen Prüfung aus

Outline

- General treatment options
  - Guideline suggestions & basic principles
- The A^2BC approach (I)
  - Targeted diagnostic procedures
- The A^2BC approach (II)
  - Targeted therapeutic interventions
- The comprehensive decannulation algorithm
  - Combining fast-track and standard-track pathways
- Looking into the New England Journal of Medicine
  - Fast-track decannulation works

All in one: a recent review



Dziewas et al.
Neurological Research and Practice (2025) 7:18
https://doi.org/10.1186/s42466-025-00376-1

Neurological Research and Practice

REVIEW Open Access

Decannulation ahead: a comprehensive diagnostic and therapeutic framework for tracheotomized neurological patients

Rainer Dziewas[1,3*], Tobias Warnecke[1], Bendix Labeit[2], Volker Schulte[1], Inga Claus[3], Paul Muhle[3], Anna Brake[1], Lena Hollah[1], Anne Jung[3], Jonas von Itter[3] and Sonja Suntrup-Krüger[3]

Targeted diagnostics: A²BC-Criteria

Category	Methods	Criteria

Airway safety	• FEES
	  • Secretion management
	  • Sensation
	  • Swallowing function
		SESETD = 3 points

Airway anatomy	• Measurement of P_{IT} • Endoscopy of upper and lower airway	P_{IT} < 5 cm H_2O No sign of critical airway obstruction
Bronchial secretions	• Suctioning frequency • semiquantitative scores	Suctioning frequency ≤ 2/8h m-sqAS < 4 points
Cough strength	• Peak-flow measurement • Semiquantitative scores	PCF ≥ 160 l/min, MEP ≥ 40 cmH_2O SCSS ≥ 3 points; positive WCT

SESETD-Algorithm

Standardized **E**ndoscopic **S**wallowing **E**valuation for **T**racheostomy **D**ecannulation

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Standardized Endoscopic Swallowing Evaluation for Tracheostomy Decannulation in Critically Ill Neurologic Patients

Tobias Warnecke, MD, PhD; Sonja Suntrup, MD; Inga K. Teismann, MD, PhD; Christina Hamacher; Stephan Oelenberg; Rainer Dziewas, MD, PhD

Warnecke *et al. Neurological Research and Practice* (2020) 2:9
https://doi.org/10.1186/s42466-020-00055-3

Neurological Research and Practice

RESEARCH ARTICLE Open Access

Inter-rater and test-retest reliability of the "standardized endoscopic swallowing evaluation for tracheostomy decannulation in critically ill neurologic patients"

Tobias Warnecke[1†], Paul Muhle[1,2*†], Inga Claus[1], Jens B. Schröder[1], Bendix Labeit[1,2], Sriramya Lapa[3], Sonja Suntrup-Krueger[1,2] and Rainer Dziewas[1]

Muhle *et al. Neurological Research and Practice* (2021) 3:26
https://doi.org/10.1186/s42466-021-00124-1

Neurological Research and Practice

RESEARCH ARTICLE Open Access

Standardized Endoscopic Swallowing Evaluation for Tracheostomy Decannulation in Critically Ill Neurologic Patients – a prospective evaluation

Paul Muhle[1,2*], Sonja Suntrup-Krueger[1,2], Karoline Burkardt[3], Sriramya Lapa[4], Mao Ogawa[5], Inga Claus[1], Bendix Labeit[1,2], Sigrid Ahring[1], Stephan Oelenberg[1], Tobias Warnecke[1] and Rainer Dziewas[6]

SESETD-Algorithm

Standardized **E**ndoscopic **S**wallowing **E**valuation for **T**racheostomy **D**ecannulation

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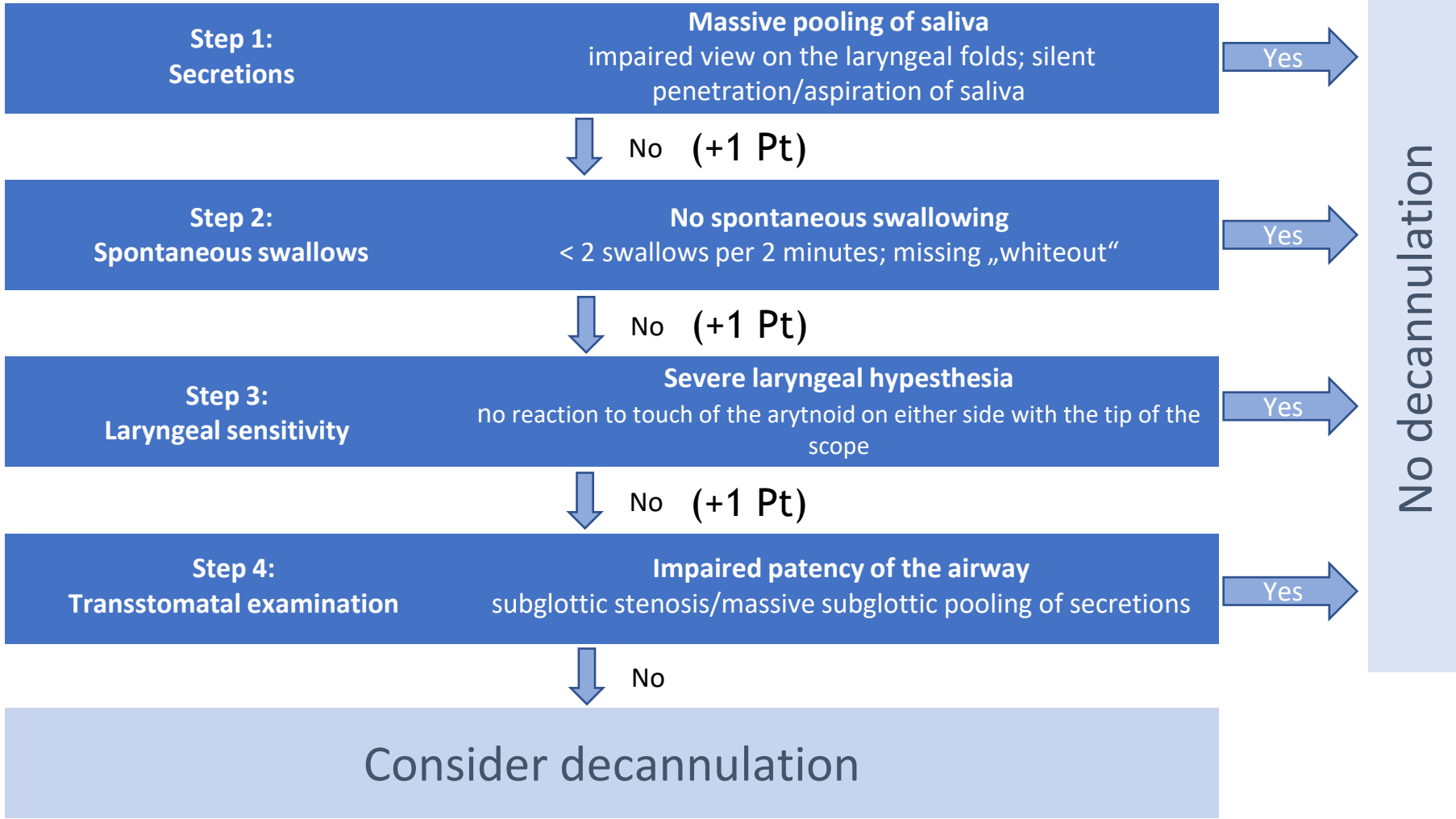
Procedure:

1. First view
2. Suctioning &Cuff deflation &Speaking valve
3. SESETD protocol



Warnecke et al., Crit Care 2013; Warnecke et al., Neurol Res Pract 2020; Muhle et al., Neurol Res Pract 2021

SESETD-Algorithm

Standardized **E**ndoscopic **S**wallowing **E**valuation for **T**racheostomy **D**ecannulation

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- Prospective observational study
- FEES 4,75 d after weaning
- Clinical swallow evaluation blinded to FEES
- Main findings in FEES:
  - Saliva pooling with aspiration (42)
  - No spontaneous swallow (29)
  - Severe pharyngeal hypesthesia (20)
- Decannulation after FEES:
  - 54 patients
  - Necessity of recannulation: 1 patient
- **Decannulation deemed possible by CSE: 29 patients**

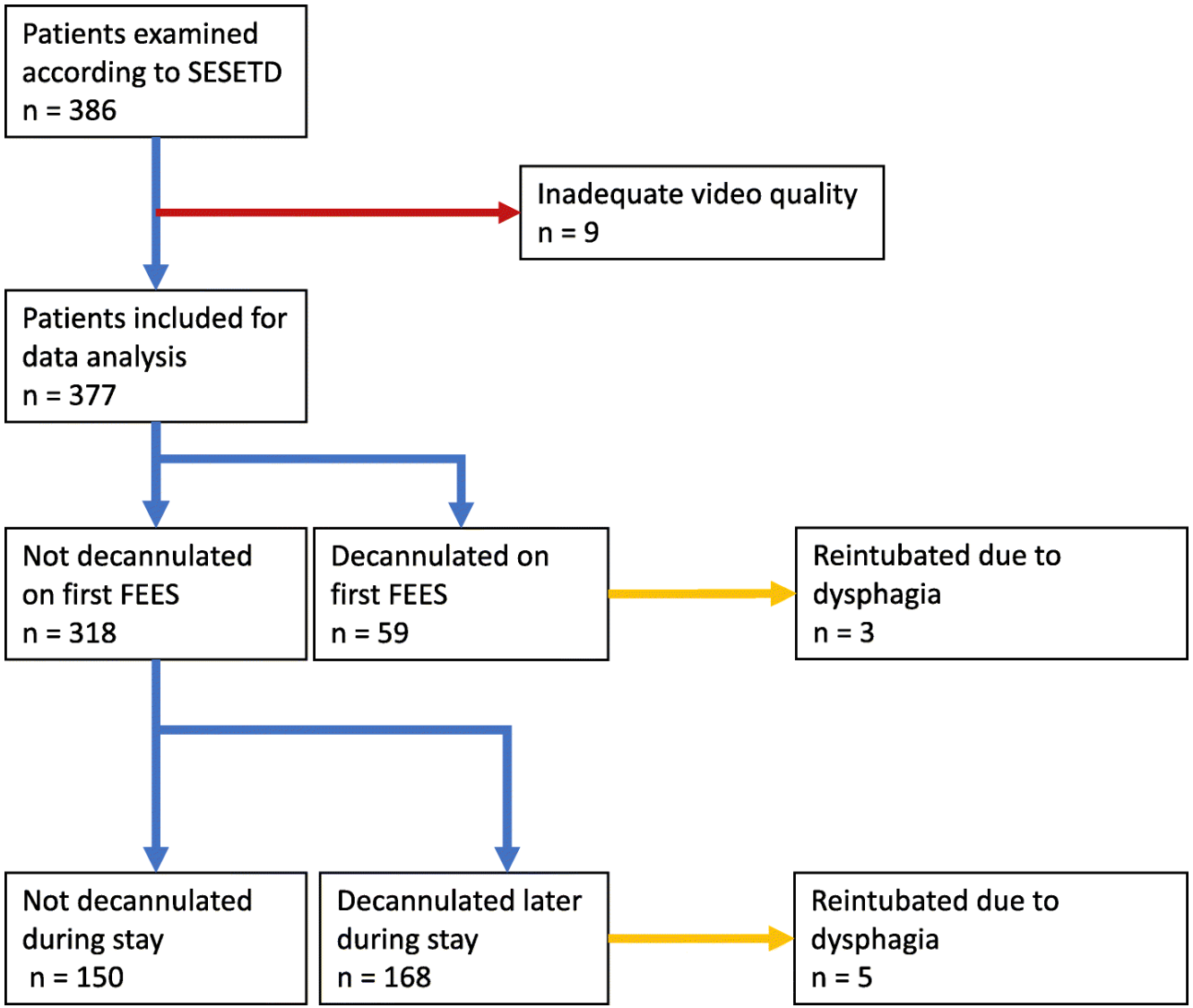
TABLE 1. Description of the Study Population

Patient Characteristics	
Total, *n*	100
Sex: male/female, *n*	55/45
Age (yr)	56.4 ± 14.9
Diagnoses	
Cerebral infarction, *n*	51
Intracerebral hemorrhage, *n*	14
Guillain-Barre syndrome, *n*	11
Meningoencephalitis, *n*	6
Subarachnoid hemorrhage, *n*	3
Other, *n*	15
Duration of mechanical ventilation (d)	20.2 ± 13.1

Warnecke et al., Crit Care 2013

SESETD-Algorithm

Standardized **E**ndoscopic **S**wallowing **E**valuation for **T**racheostomy **D**ecannulation



Muhle et al. Neurol Research and Practice 2021

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- > Decannulation:
  - > 227/377 = 60.2%
- > Decannulation Failure:
  - > Immediate: 3/59 = 5.1%
  - > Delayed: 5/168 = 3.0%
  - > Total: 8/227 = 3.6%

SESETD-Algorithm

Standardized **E**ndoscopic **S**wallowing **E**valuation for **T**racheostomy **D**ecannulation

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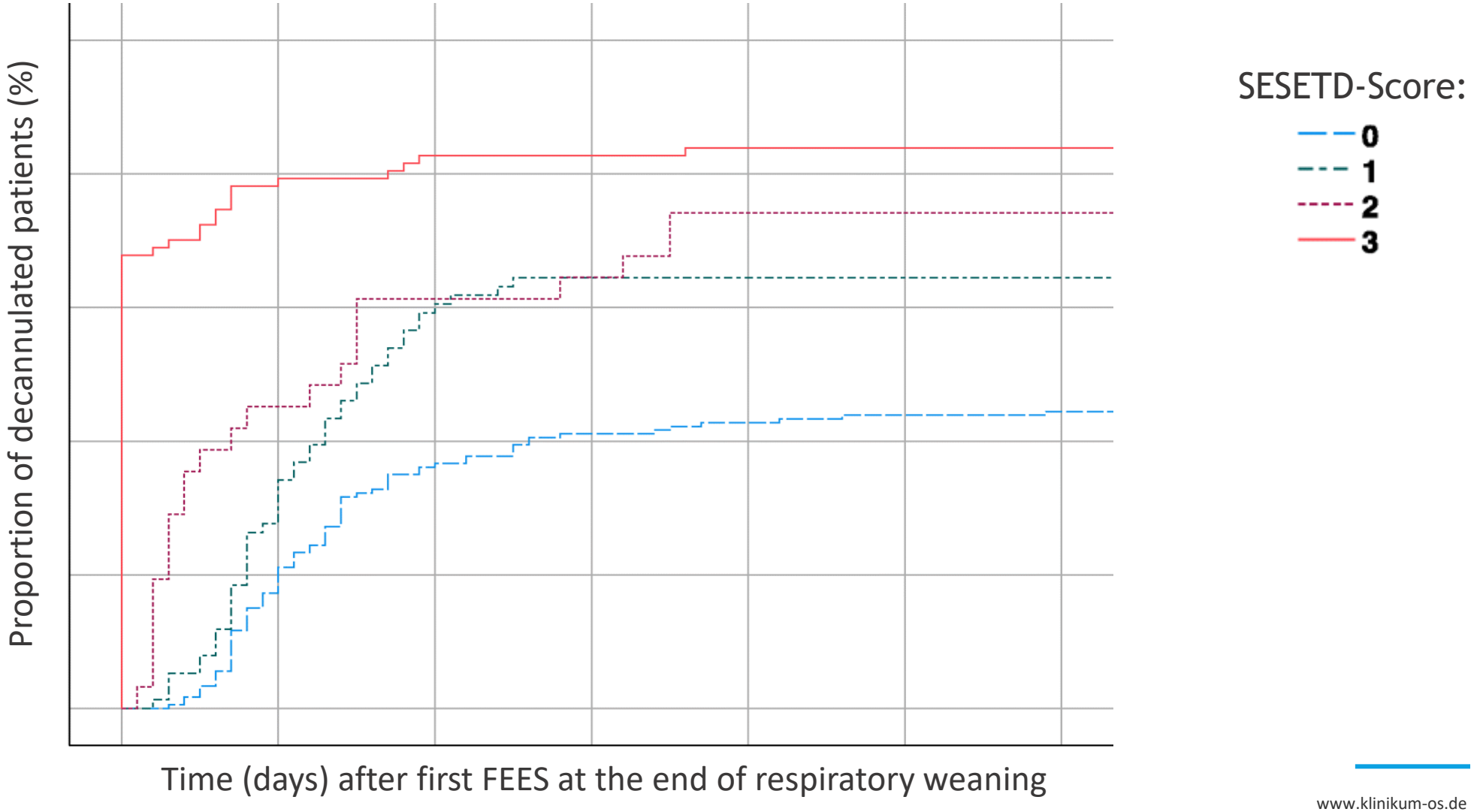
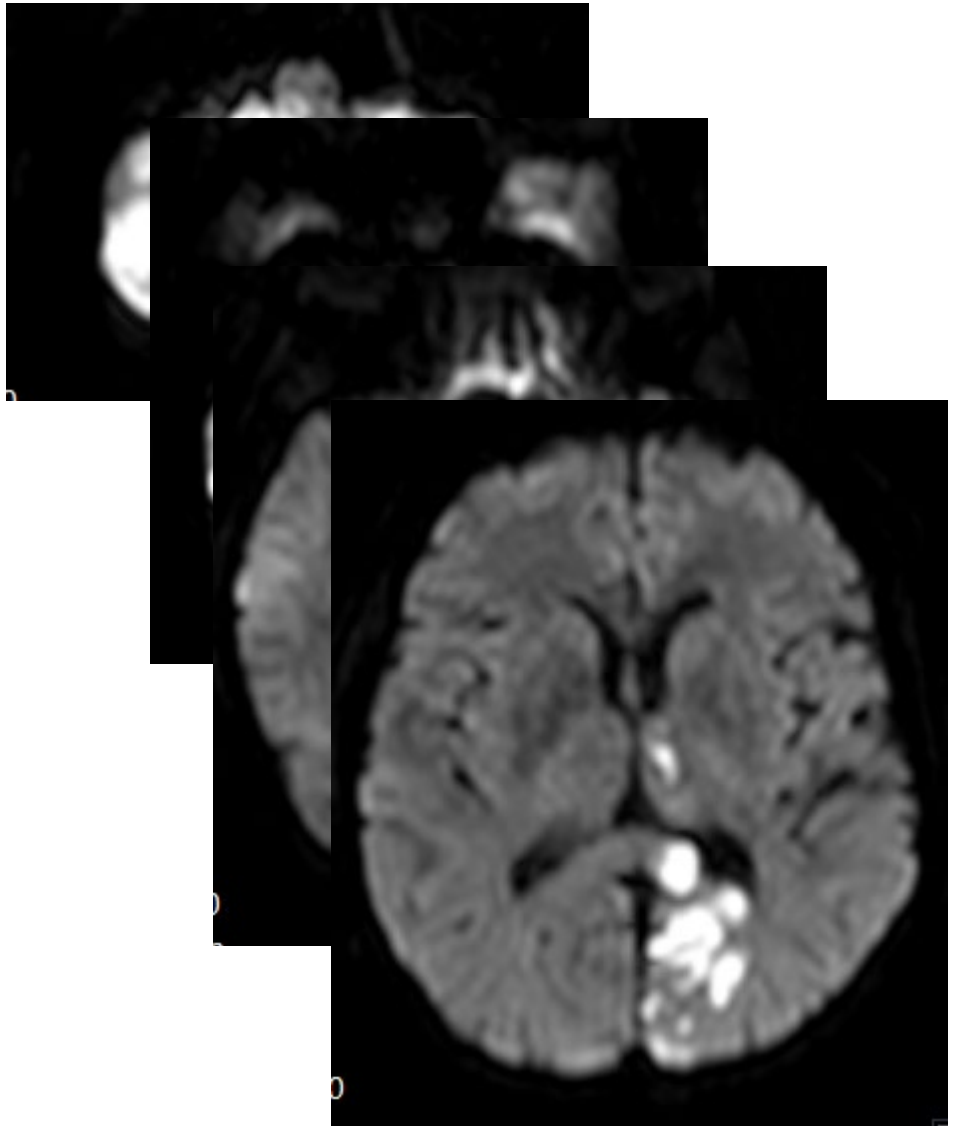
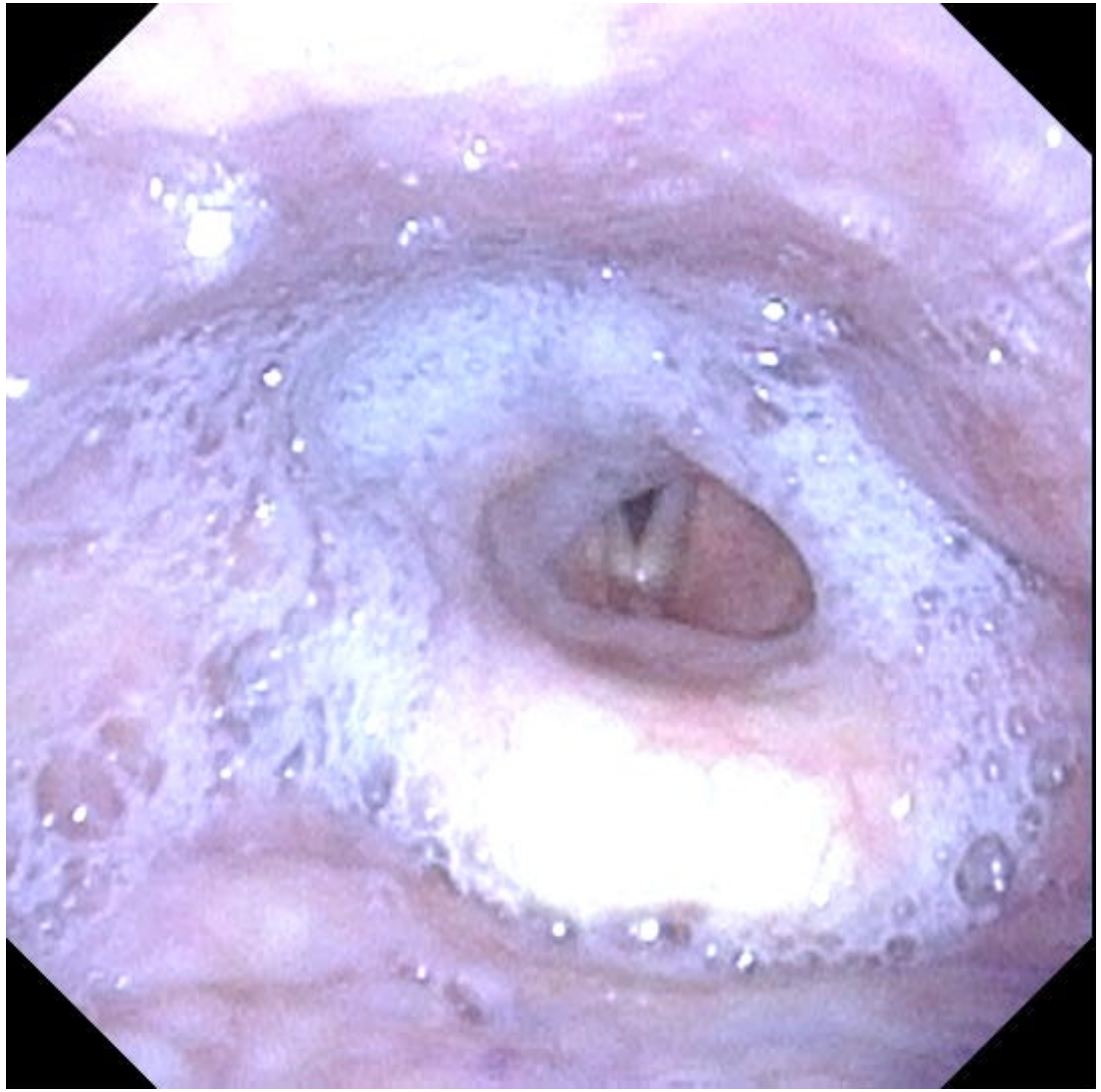


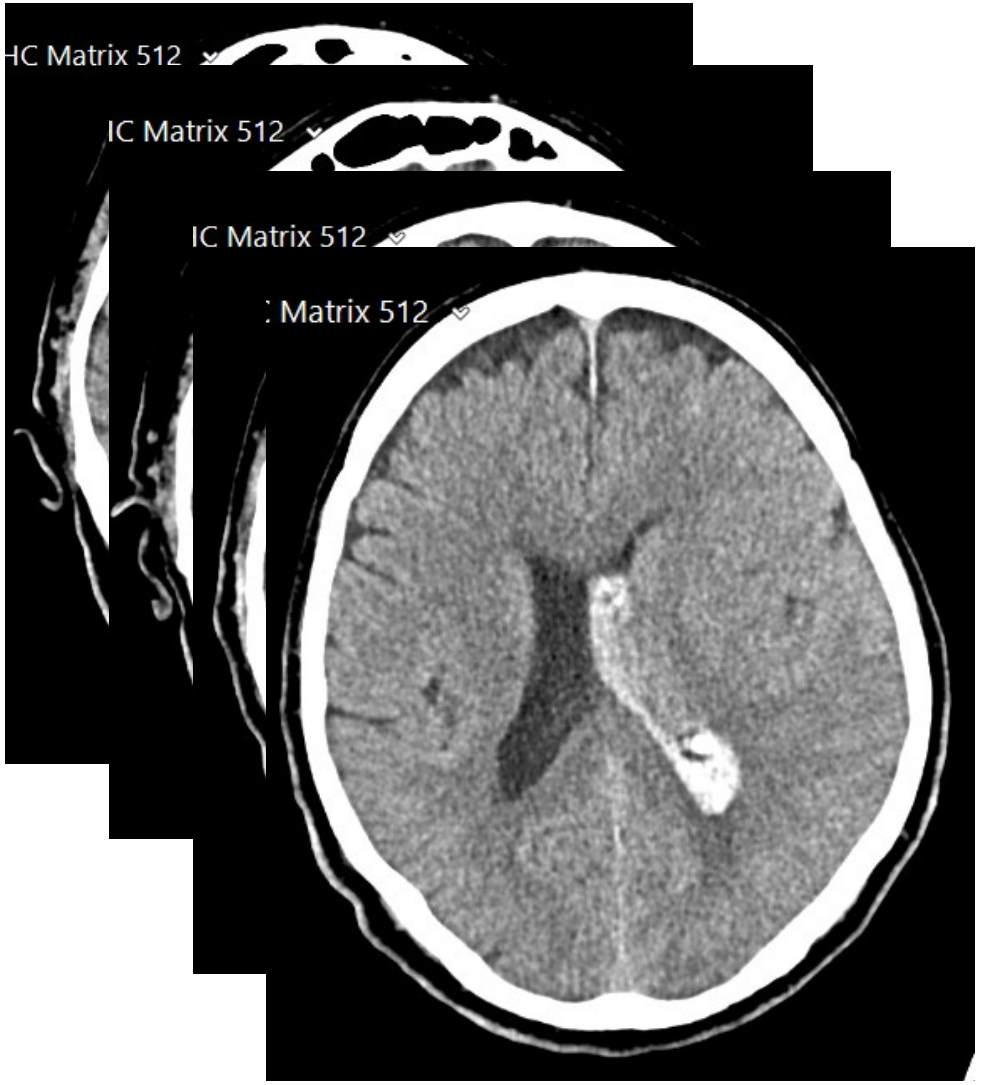
Muhle et al. Neurol Research and Practice 2021

Patient case (1)





Patient case (2)



Patient case (2)

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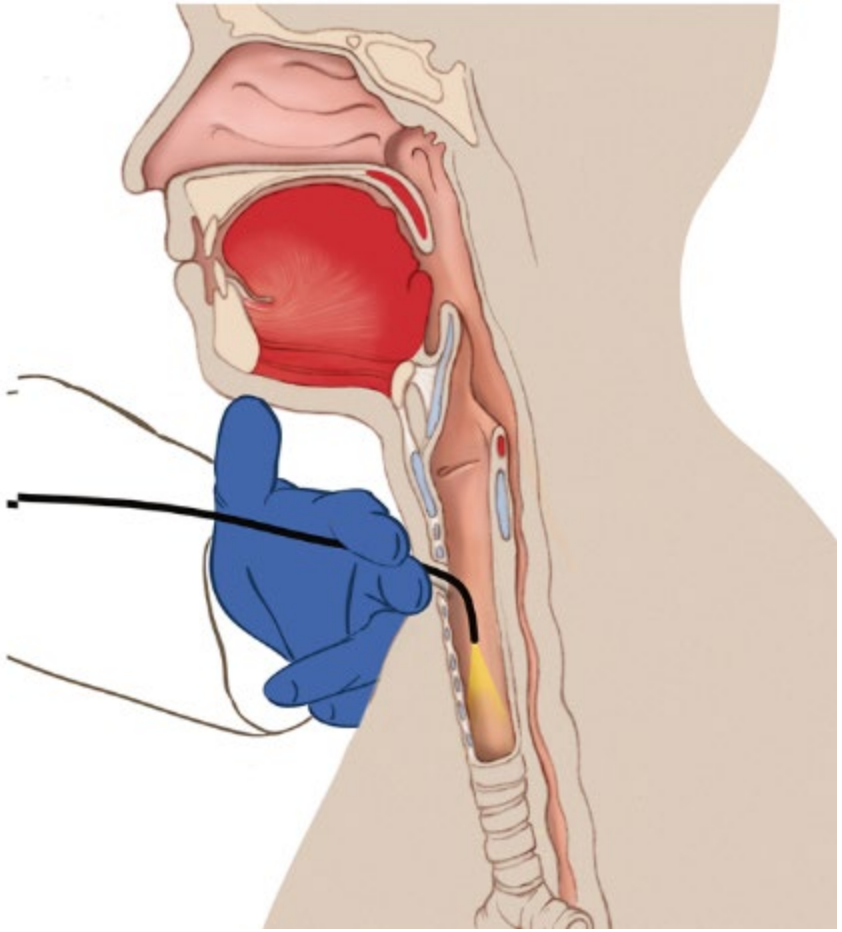

Patient case (2)

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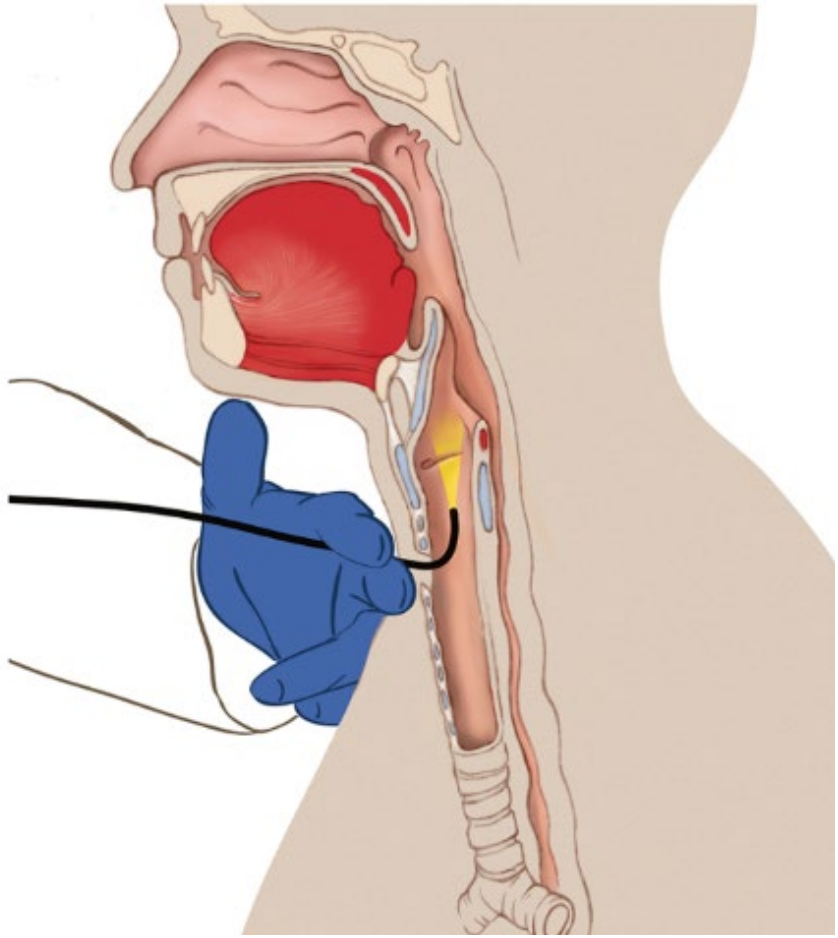

Outline

- General treatment options
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  - Targeted diagnostic procedures
- The A^2BC approach (II)
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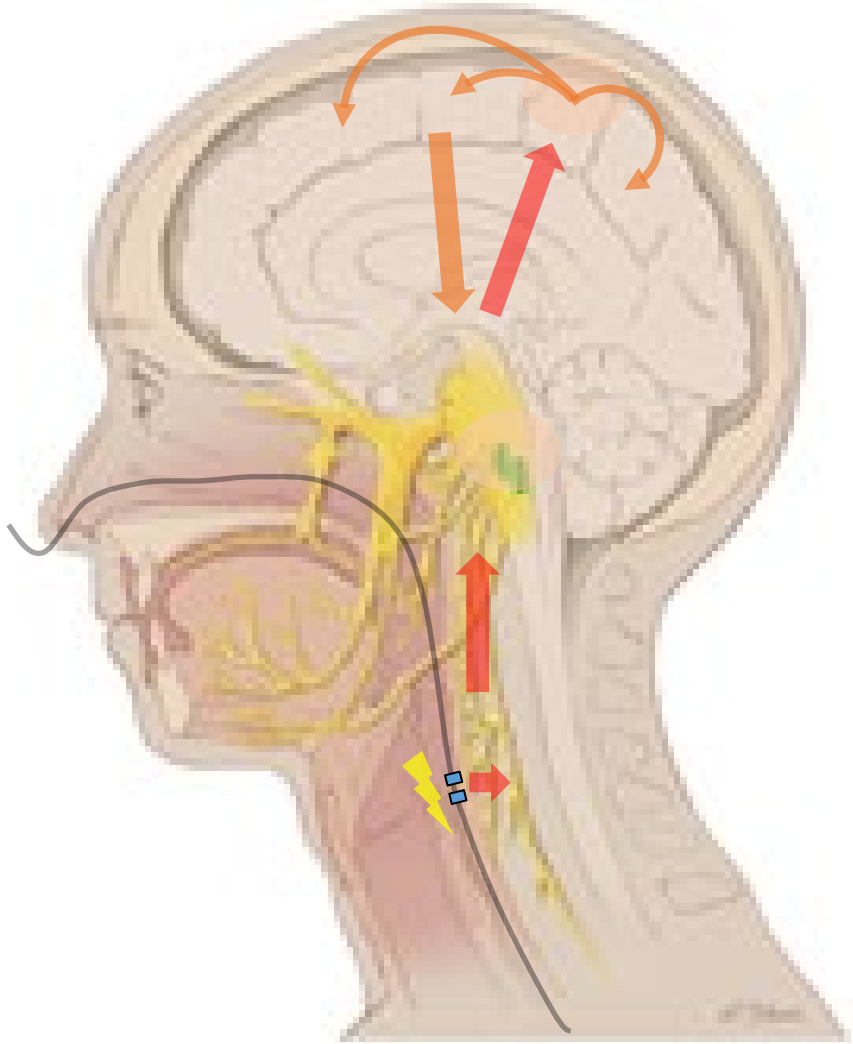
- The comprehensive decannulation algorithm
  - Combining fast-track and standard-track pathways
- Looking into the New England Journal of Medicine
  - Fast-track decannulation works

Treatment to target: A²BC-Criteria

Category	Methods
Airway safety	
• Secretion management	• Saliva reduction (e.g. anticholinergics, botulinum toxin injection)
• Sensitivity	• Tactil-thermal, gustatory and olfactory stimulation
	• Ice-chip protocol
	• Above-cuff vocalization
	• Pharyngeal electrical stimulation
• Swallowing function	• Oropharyngeal strengthening and coordination exercises
	• Pharyngeal electrical stimulation
Airway anatomy	• Reduction of the TC outer diameter
	• Customization of TC configuration
	• Systemic/inhaled corticosteroids
	• Minimally invasive or surgical interventions
Bronchial secretions	• Secretolysis (e.g. inhalation, secretolytics, fluid administration)
	• Secretion reduction (e.g. anticholinergics)
	• Secretion clearance (Air-stacking, oscillation therapy,
	• mechanical cough aid, bronchoscopy)
Cough strength	• Breathing exercises (e.g. incentive spirometry)
	• Cough reflex training (e.g. aerosolized capsaicin)

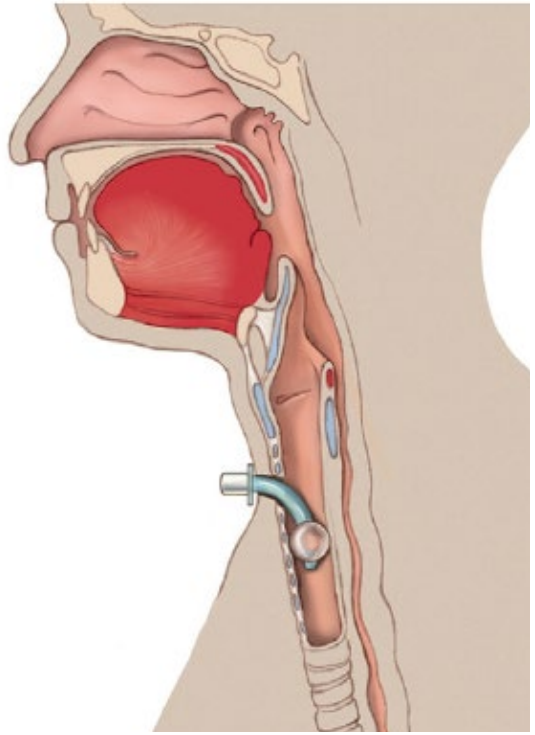
Pharyngeal electrical stimulation (PES)

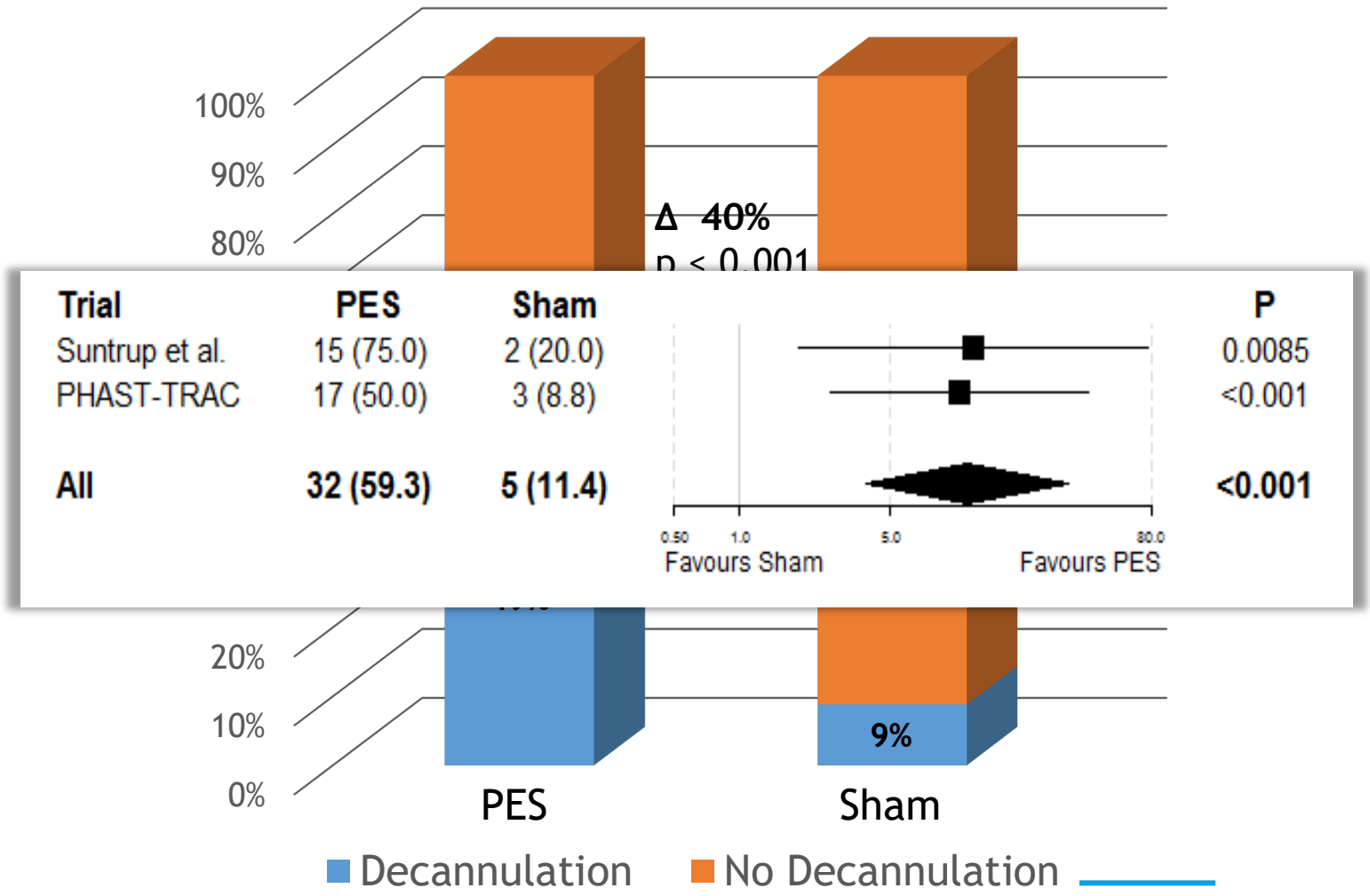


- 3 consecutive days
- 10 minutes of treatment per day

Where it all started - PHAST-TRAC

PHAST-TRAC
Stroke RCT



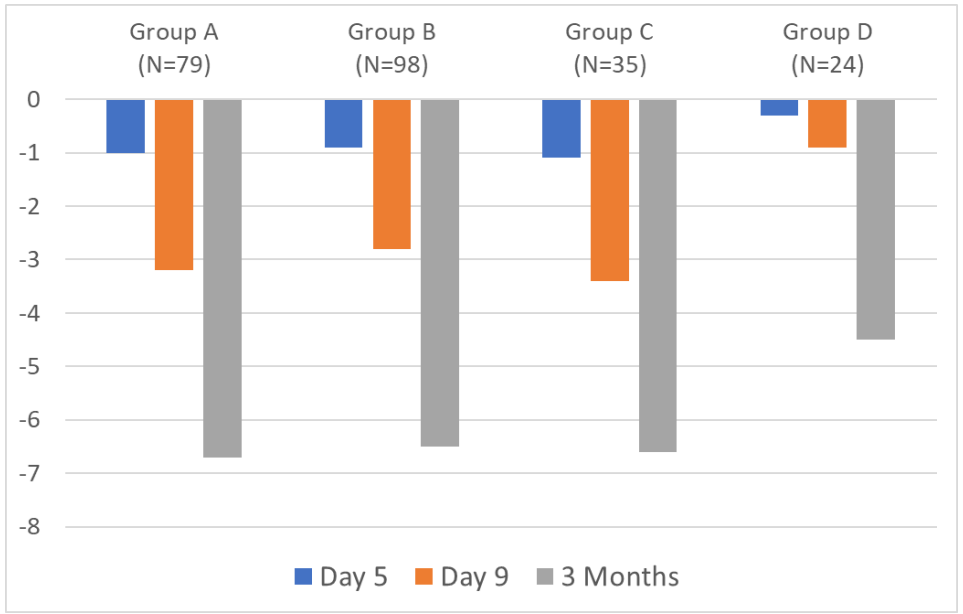


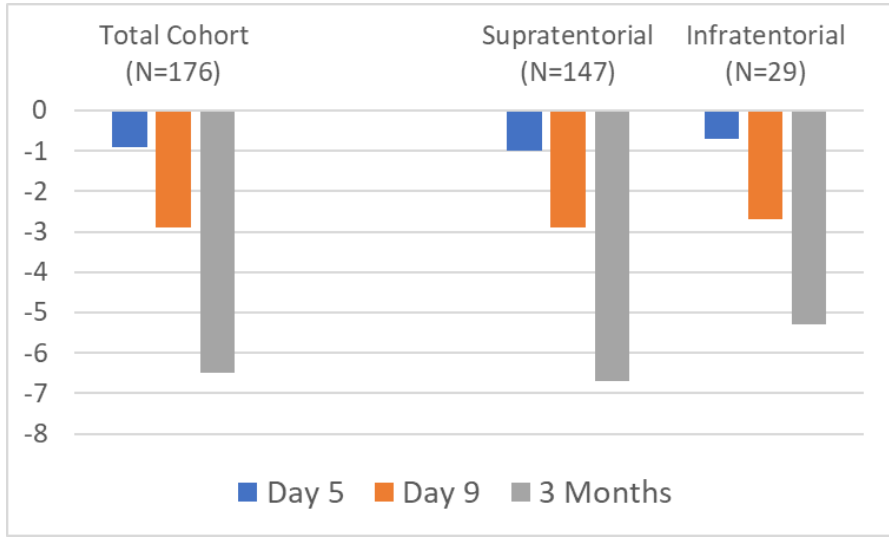
Trial	PES	Sham	P
Suntrup et al.	15 (75.0)	2 (20.0)	0.0085
PHAST-TRAC	17 (50.0)	3 (8.8)	<0.001
All	**32 (59.3)**	**5 (11.4)**	**<0.001**

Dziewas et al., Lancet Neurol 2018 Oct;17(10):849-859

Providing real world evidence - PHADER

PHADER European Registry





- Group A: Stroke, non-ventilated
- Group B: Stroke, ventilated
- Group C: Non-stroke, ventilated
- Group D: Traumatic Brain Injury

Bath et al. E Clinical Medicine 2020

PHADER - tracheotomized patients

Neurotherapeutics 21 (2024) e00433

Contents lists available at ScienceDirect

Neurotherapeutics

journal homepage: www.sciencedirect.com/journal/neurotherapeutics

Original Article

Predictors of pharyngeal electrical stimulation treatment success in tracheotomised stroke patients with dysphagia: Secondary analysis from PHADER cohort study

Ivy Cheng [a,b,c,g], Philip M. Bath [d,e], Shaheen Hamdy [b,f], Paul Muhle [c,g], Satish Mistry [f], Rainer Dziewas [g,h], Sonja Suntrup-Krueger [c,g,*]

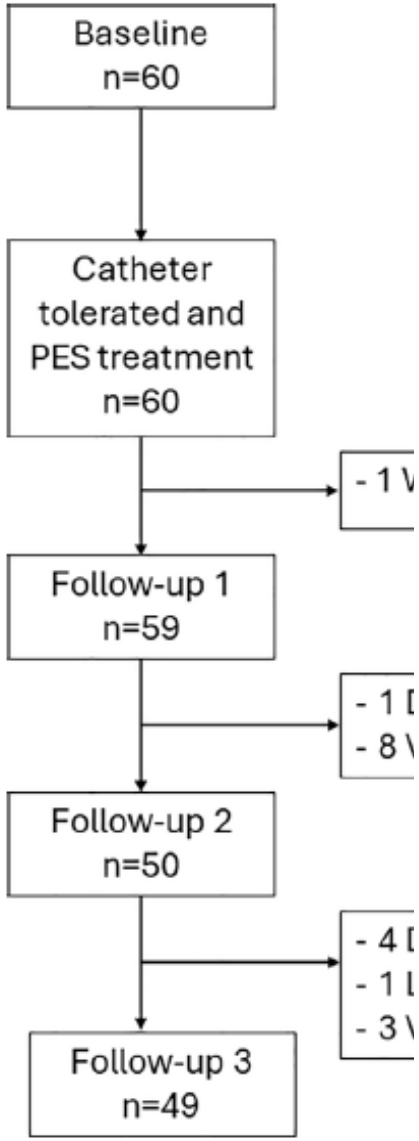
Cheng et al. Neurological Research and Practice (2025) 7:23
https://doi.org/10.1186/s42466-025-00380-5

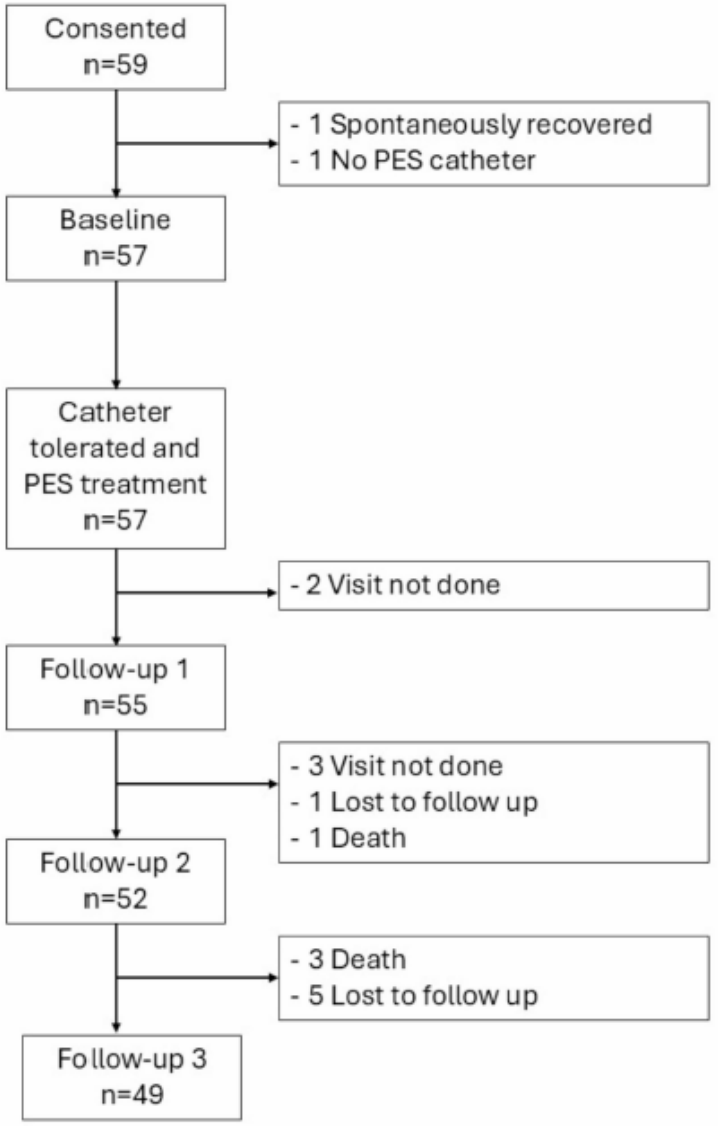
Neurological Research and Practice

RESEARCH ARTICLE Open Access

Clinical predictors of outcome after pharyngeal electrical stimulation (PES) in non-stroke related neurogenic dysphagia after mechanical ventilation and tracheotomy: results from subgroup analysis of PHADER study

Ivy Cheng[1,2,3,7], Philip M. Bath[4,5], Shaheen Hamdy[2,6], Paul Muhle[3,7], Satish Mistry[6], Rainer Dziewas[7,8] and Sonja Suntrup-Krüger[3,7*]



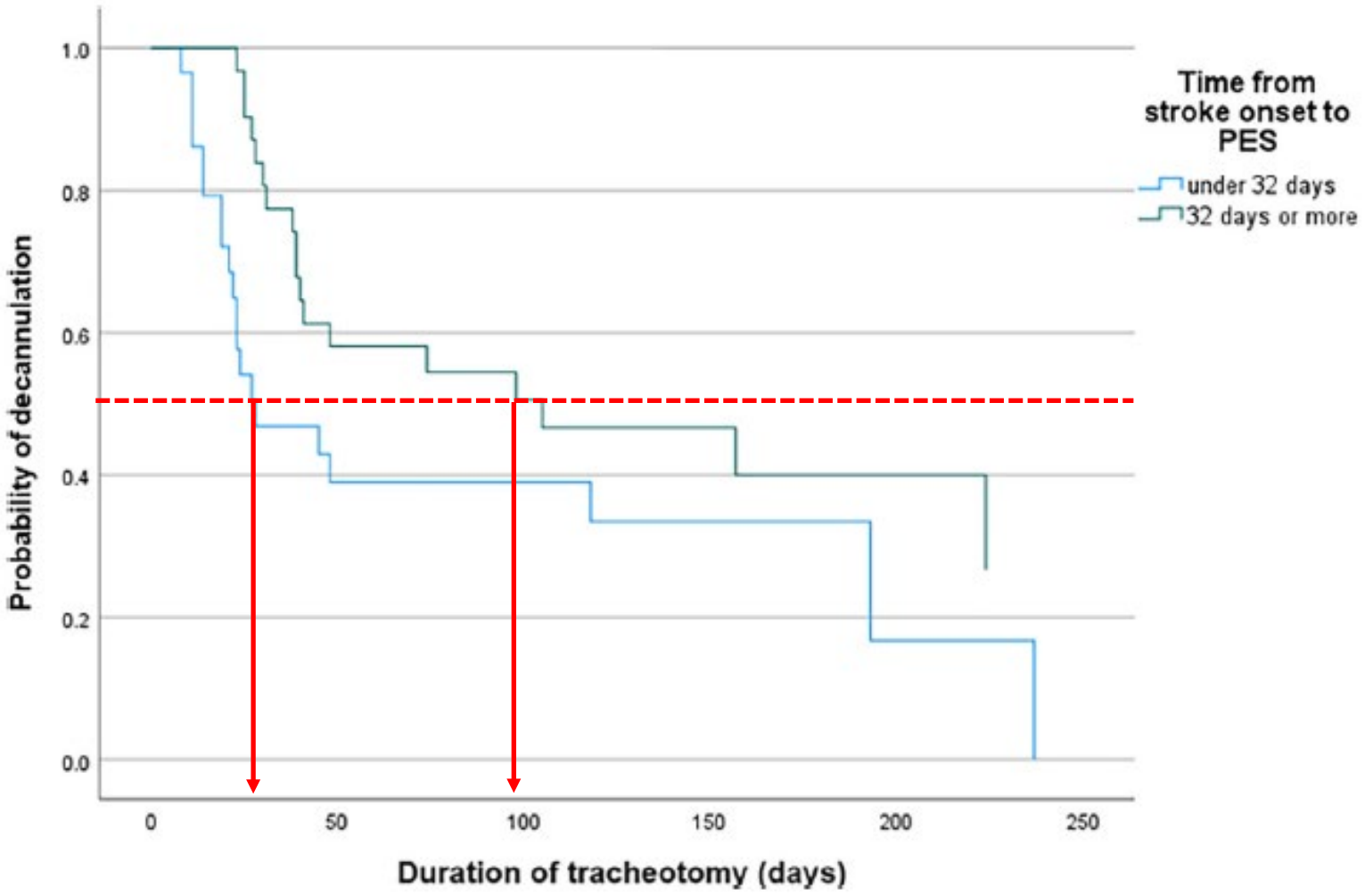


PHADER - Secondary anlaysis (1)

Baseline participant characteristics and intervention characteristics by group. Data are presented in mean (standard deviation), number (%) or median [interquartile range].

	All ventilated stroke patients (n = 98)	Patients who received PES during tracheotomy (n = 60)
Participant characteristics		
Age	66.6 (13.0)	66.6 (11.2)
Sex (Male / Female)	72 (73.5) / 26 (26.5)	44 (73.3) / 16 (26.7)
Body Mass index (BMI; kg/m^2) by age groups		
50 years old or younger	24.6 (4.8)	25.8 (4.9)
51–60 years old	26.8 (9.1)	24.2 (4.6)
61–70 years old	26.2 (5.4)	26.1 (5.4)
71–80 years old	28.0 (4.4)	28.8 (3.6)
80 years old or older	26.5 (6.0)	26.4 (5.6)
Feeding status at baseline		
Oral, normal	0 (0.0)	0 (0.0)
Oral, supervision	1 (1.0)	0 (0.0)
Oral, with support	0 (0.0)	0 (0.0)
NGT or NJT	71 (72.4)	46 (76.7)
PEG or RIG	24 (24.5)	13 (21.7)
Other routes	2 (2.0)	1 (0.0)
NIHSS (/42)	13.4 (5.8)	13.5 (5.0)
Stroke type		
Ischaemic	74 (75.5)	46 (76.6)
Haemorrhagic	24 (24.5)	14 (23.3)
Stroke lesion location		
Supratentorial	84 (85.7)	54 (90.0)
Infratentorial	14 (14.3)	6 (10.0)
Intervention characteristics		
PES perceptual threshold at baseline (mA)	15.9 (7.9)	14.5 (7.6)
PES intensity on session 1 (mA)	30.9 (10.2)	30.0 (10.6)
Time from stoke onset to treatment (days)	29.5 [34.8]	32.5 [25.5]
DSRS		
Baseline	11.7 (1.2)	11.7 (1.2)
Day 5	10.8 (2.4)	11.1 (1.9)
Day 9	8.9 (3.8)	9.3 (3.6)
Day 92	5.3 (5.0)	5.6 (5.2)

DSRS: dysphagia severity rating scale [24]; NGT: nasogastric tube; NIHSS: National Institute Health Stroke Scale; NJT: nasojejunal tube; PEG: percutaneous endoscopic gastrostomy tube; PES: pharyngeal electrical stimulation; RIG: radiographically inserted gastrostomy tube.



Cheng et al.; Neurotherapeutics 2024

PHADER - Secondary anlaysis (2)

	All ventilated non-stroke (*n* = 57)
Participant characteristics	
Age	63.6 (15.5)
Sex (Male / Female)	40 (70.2) / 17 (29.8)
Neurological conditions causing dysphagia	
Traumatic brain injury	22 (38.6)
Critical illness polyneuropathy	15 (26.3)
Hypoxia	3 (5.3)
Seizures	3 (5.3)
Encephalitis	2 (3.5)
Guillain-Barré	2 (3.5)
Meningitis	2 (3.5)
Tumour	2 (3.5)
Brain abscess	1 (1.8)
Cavernoma	1 (1.8)
Cerebral oedema	1 (1.8)
Encephalopathy	1 (1.8)
Multiple sclerosis	1 (1.8)
Neurosarcoidosis	1 (1.8)
*Feeding status at baseline**	
Oral, normal	0 (0.0)
Oral, supervision	0 (0.0)
Oral, with support	0 (0.0)
NGT or NJT	29 (50.9)
PEG or RIG	26 (45.6)
Other routes	2 (3.5)

Table 2 Multiple linear regression findings for participants with neurogenic (non-stroke) dysphagia who required mechanical ventilation and tracheotomy (*n* = 57)

Participant characteristics	**Change in DSRS at Day 5**			**Change in DSRS at Day 9**			**Change in DSRS at 3 months**		
	β [95% CI]	*SE*	*p*	*β* [95% CI]	*SE*	*p*	*β* [95% CI]	*SE*	*p*
Age	0.008 [-0.028, 0.045]	0.018	0.463	0.008 [-0.058, 0.074]	0.033	0.803	0.004 [-0.097, 0.105]	0.050	0.938
Sex	0.473 [-0.758, 1.704]	0.614	0.771	1.587 [-0.618, 3.792]	1.099	0.155	0.348 [-2.884, 3.580]	1.606	0.829
Intervention characteristics									
	Change in DSRS at Day 5			**Change in DSRS at Day 9**			**Change in DSRS at 3 months**		
	β [95% CI]	*SE*	*p*	*β* [95% CI]	*SE*	*p*	*β* [95% CI]	*SE*	*p*
PES perceptual threshold at the first session	0.091 [-0.050, 0.232]	0.070	0.202	0.281 [0.034, 0.528]	0.123	***0.027**	0.199 [-0.127, 0.526]	0.162	0.225
PES stimulation intensity at the first session	-0.012 [0.106, 0.083]	0.047	0.801	-0.096 [-0.263, 0.071]	0.083	0.254	0.000 [-0.218, 0.217]	0.108	0.998
Time from diagnosis to first PES	0.001 [-0.001, 0.003]	0.001	0.343	0.003 [0.000, 0.007]	0.002	0.077	0.013 [0.004, 0.022]	0.004	***0.004**

CI: confidence interval; DSRS: dysphagia severity rating scale; PES: pharyngeal electrical stimulation; SE: standard error

> …our findings suggested that in patients with neurogenic dysphagia, regardless of the lesion location, nature or chronicity, **early PES treatment** can facilitate re-establishment of neural networks necessary to drive functional recovery.

Cheng et al.; Neurol Res Practice 2025

Outline

- General treatment options
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- The comprehensive decannulation algorithm
  - Combining fast-track and standard-track pathways
- Looking into the New England Journal of Medicine
  - Fast-track decannulation works

The final challenge: Decannulation Algorithm

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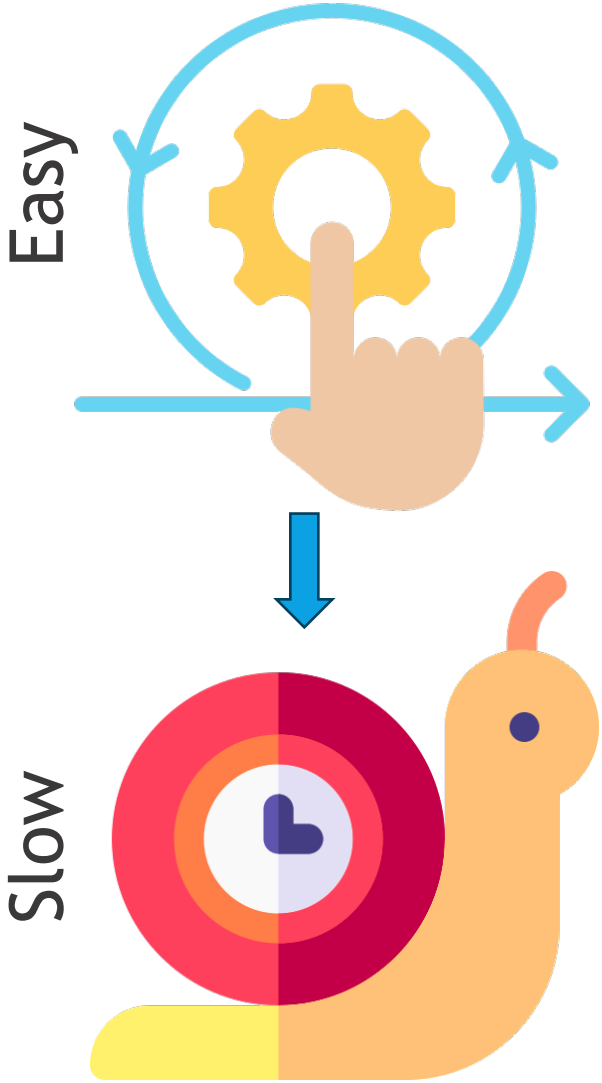
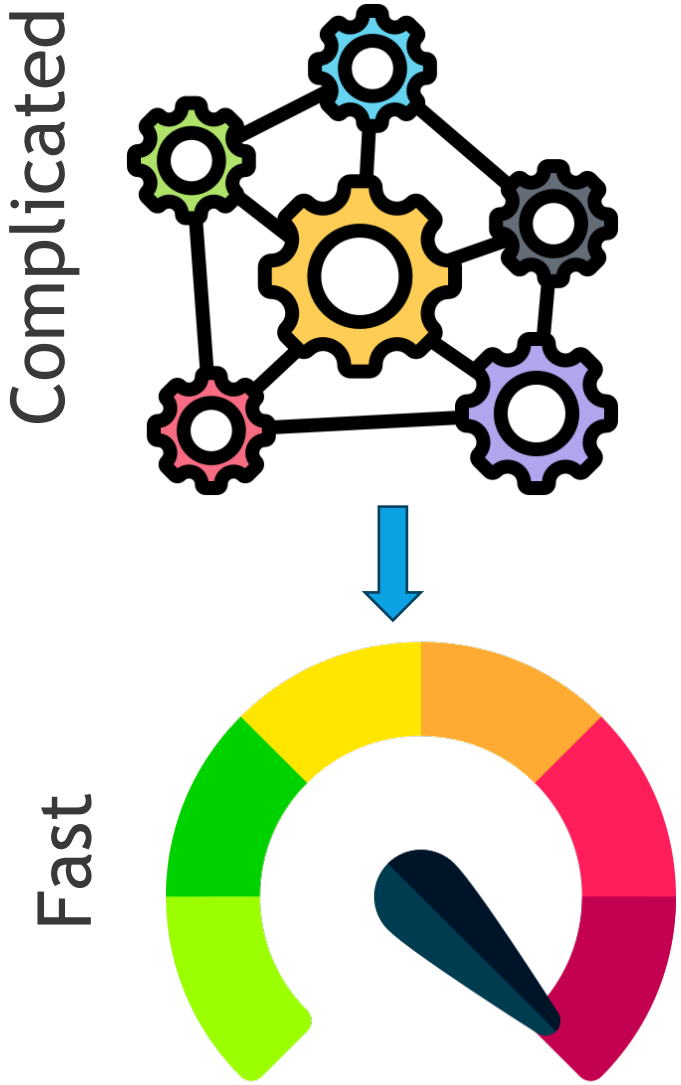
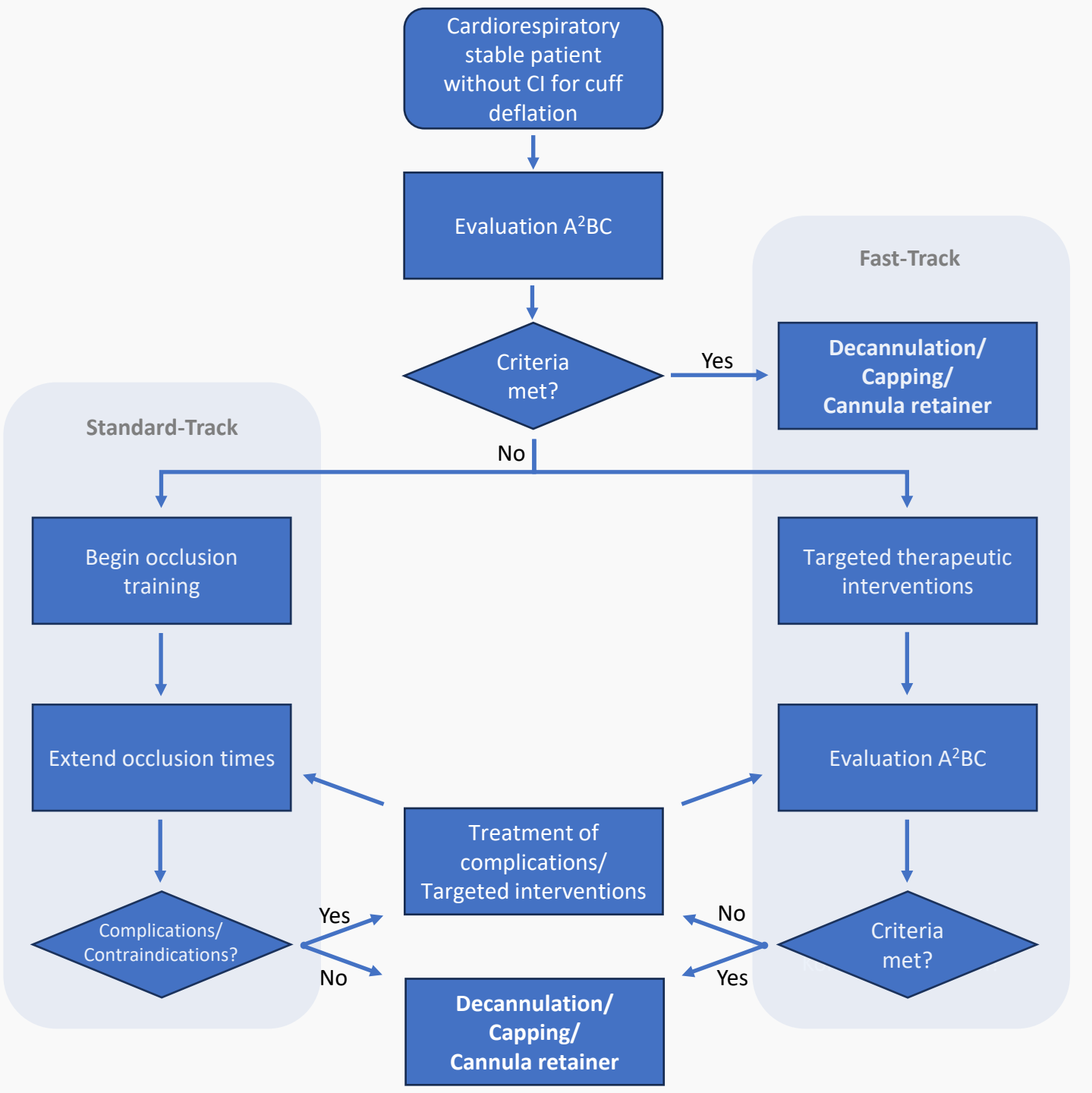




All in one

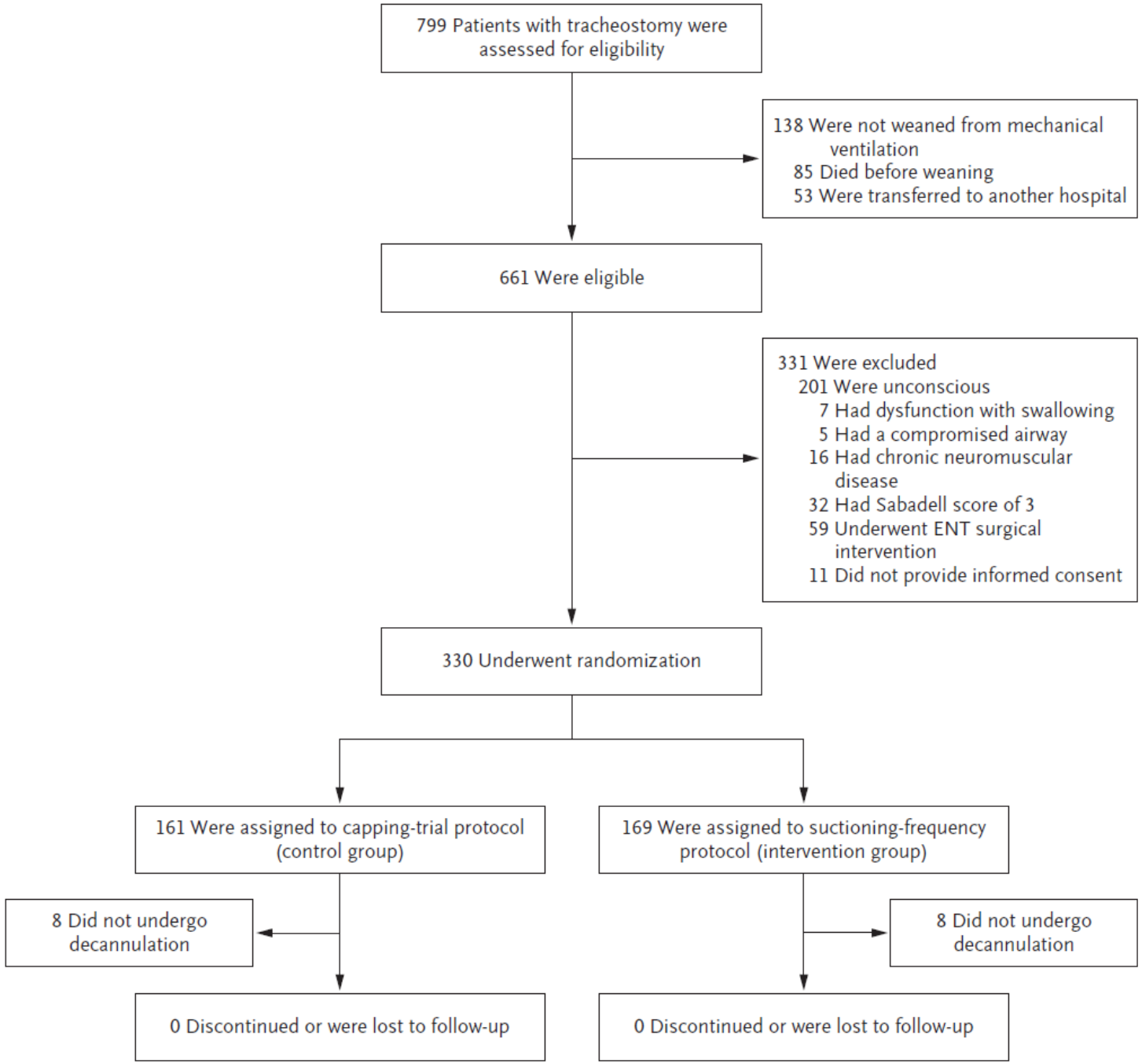

Cardiorespiratory stable patient without CI for cuff deflation
Evaluation A²BC
Criteria met?
Yes
Decannulation/ Capping/ Cannula retainer
Fast-Track
No
Standard-Track
Begin occlusion training
Extend occlusion times
Complications/ Contraindications?
Yes
No
Treatment of complications/ Targeted interventions
Decannulation/ Capping/ Cannula retainer
Targeted therapeutic interventions
Evaluation A²BC
Criteria met?
No
Yes

Outline

- General treatment options
  - Guideline suggestions & basic principles
- The A^2BC approach (I)
  - Targeted diagnostic procedures
- The A^2BC approach (II)
  - Targeted therapeutic interventions
- The comprehensive decannulation algorithm
  - Combining fast-track and standard-track pathways
- Looking into the New England Journal of Medicine
  - Fast-track decannulation works

Does rapi


The
JOUR
ESTABLISHED IN 1812
High-Flow
for
Gonzalo Hernández Martínez
Ramón Ortiz, M.D.,
Laura Colinas, M.D., Ph.
Marina Garcia-d


799 Patients with tracheostomy were assessed for eligibility
138 Were not weaned from mechanical ventilation
85 Died before weaning
53 Were transferred to another hospital
661 Were eligible
331 Were excluded
201 Were unconscious
7 Had dysfunction with swallowing
5 Had a compromised airway
16 Had chronic neuromuscular disease
32 Had Sabadell score of 3
59 Underwent ENT surgical intervention
11 Did not provide informed consent
330 Underwent randomization
161 Were assigned to capping-trial protocol (control group)
169 Were assigned to suctioning-frequency protocol (intervention group)
8 Did not undergo decannulation
8 Did not undergo decannulation
0 Discontinued or were lost to follow-up
0 Discontinued or were lost to follow-up

REDECAP Trial (1)

Reducing decannulation times limiting capping

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- Inclusion criteria:
  - Patients with a tracheal cannula, weaned from ventilation
- Exclusion criteria:
  - Unconsciousness (GCS <6)
  - Severe dysphagia
    - 50 ml Water-Swallow-Test
    - if pathological FEES according to SESETD protocol
  - Impaired airway patency
    - Failed 5 minutes tube occlusion
    - concordant findings in endoscopy
  - Severe neuromuscular disease (other than ICUAW)

REDECAP Trial (2)

Reducing decannulation times limiting capping

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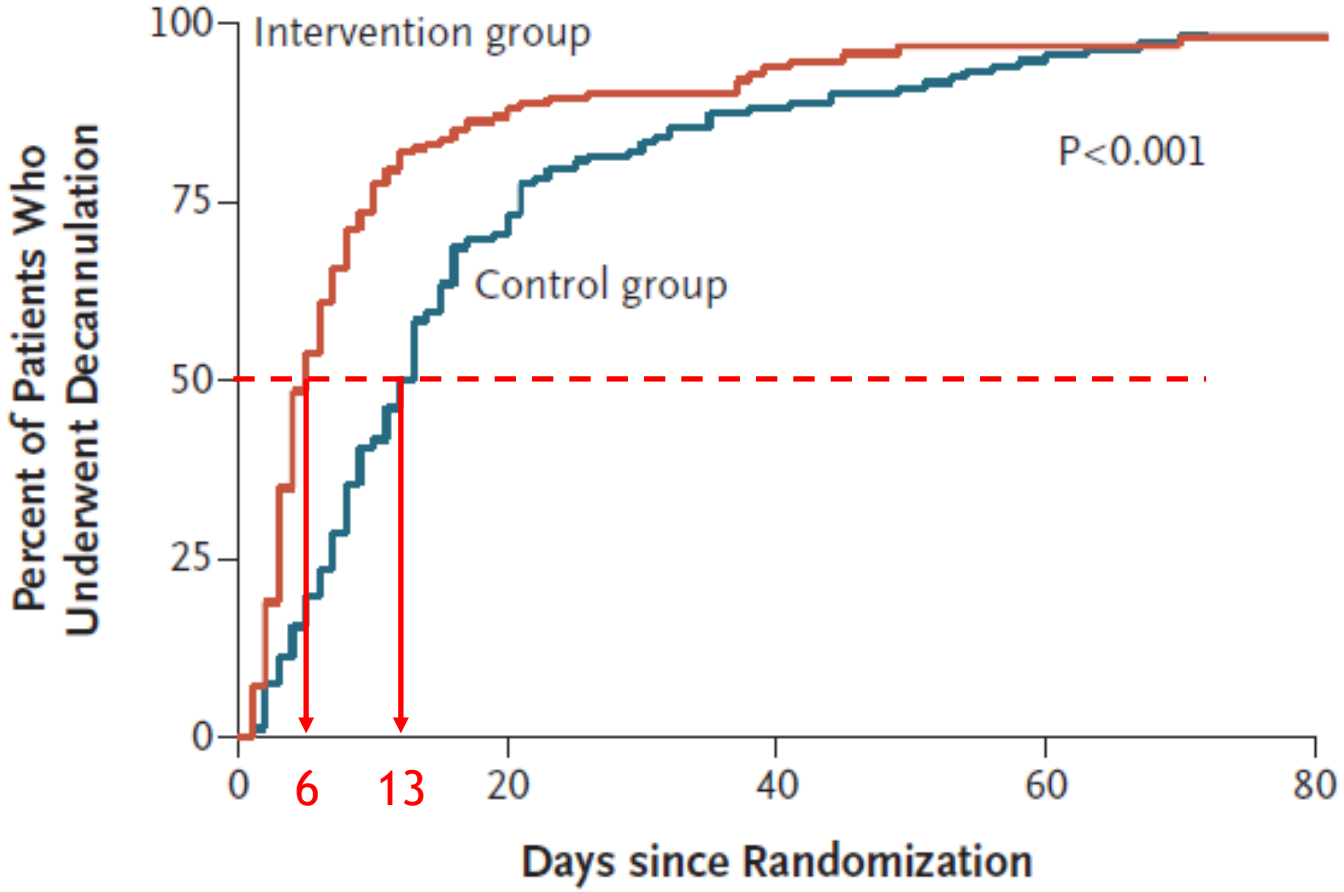
- Study intervention:
  - Intervention group:
    - High-flow oxygen and unblocked fenestrated tracheal cannula
    - Decannulation criterion: <2 suctioning episodes/8 hours for 24 hours
  - Control group:
    - High-flow oxygen and unblocked fenestrated tracheal cannula & intermittent capping trials
    - Decannulation criterion: Successful 24 h capping trial
- Primary endpoint:
  - Time to decannulation
- Secondary endpoints:
  - Decannulation failure
  - Respiratory infections
  - Length of stay on the ICU
  - ICU readmissions
  - In-hospital death

Primary Outcome



No. of Patients					
Intervention group	169	20	7	3	1
Control group	161	46	17	7	1

Prim

um
NABRÜCK

Table 2. Primary and Secondary Outcomes.*

Outcome	Control Group (N=161)	Intervention Group (N=169)	Difference (95% CI)
Primary outcome: median time to decannulation (IQR) — days†	13 (11 to 14)	6 (5 to 7)	7 (5 to 9)
Secondary outcomes			
Decannulation failure — no. (%)	9 (5.6)	4 (2.4)	3.2 (–1.2 to 8.1)
Weaning failure — no. (%)‡	27 (16.8)	11 (6.5)	10.3 (3.4 to 17.4)
Pneumonia — no. (%)	16 (9.9)	7 (4.1)	5.8 (0.2 to 11.8)
Tracheobronchitis — no. (%)	47 (29.2)	32 (18.9)	10.3 (1.0 to 19.3)
Median duration of stay (IQR) — days			
In the ICU§	35 (27 to 51)	32 (25 to 43)	3 (–1 to 11)
In the hospital	62 (38 to 105)	48 (33 to 71)	14 (9 to 33)
Death — no. (%)			
In the ICU	0	0	0 (–2.2 to 2.3)
In the hospital	8 (5.0)	4 (2.4)	2.6 (–1.7 to 7.4)
Sepsis — no. (%)	12 (7.5)	12 (7.1)	0.3 (–5.5 to 6.3)
Multiorgan failure — no. (%)	6 (3.7)	2 (1.2)	2.5 (–1.1 to 6.8)
Exploratory outcomes			
Decannulation before ICU discharge — no. (%)	104 (64.6)	139 (82.2)	–17.7 (–26.8 to –8.1
Capping-trial failure — no. (%)¶	118 (73.3)	NA	NA
Median duration of stay (IQR) — days			
In the hospital after randomization	37 (20 to 66)	23 (14 to 36)	14 (10 to 31)
In the hospital after ICU discharge	27 (11 to 53)	16 (7 to 27)	11 (4 to 20)
ICU readmission — no. (%)	17 (10.6)	10 (5.9)	4.6 (–1.4 to 10.9)
Swallowing dysfunction at decannulation — no. (%)	16 (9.9)	15 (8.9)	1.1 (–5.4 to 7.6)

Summary (1)

- Tracheostomy is one of the most frequent procedures on the ICU and particularly common in severly affected patients.
- Dysphagia is often the key reasons why decannulation has to be delayed in this scenario.
- According to recent guideline recommendations, FEES should be used for bedside dysphagia evaluation in tracheotomized patients.
- Restoring physiological airflow through the upper airway constitutes an important therapeutic principle during the rehabilitation of tracheotomized patients.
- Targeted diagnostic and therapeutic interventions need to focus on the A^2BC criteria
  - Airway safety
  - Airway patency
  - Bronchial secretions
  - Cough strength

Summary (2)

- The SESETD algorithm assesses airway safety and airway patency and is an early prognosticator for „time-to-decannulation“
- Pharyngeal electrical stimulation (PES) shortens time to decannulation in stroke patients and other patient groups.
- The comprehensive decannulation algorithms distinguishes fast-track and standard-track pathways.
- A recent RCT showed that the option of fast-track decannulation reduces
  - time-to-decannulation
  - Complications
  - length of stay parameters
  - the decannulation failure rate.

Thank you!

klinikum OSNABRÜCK

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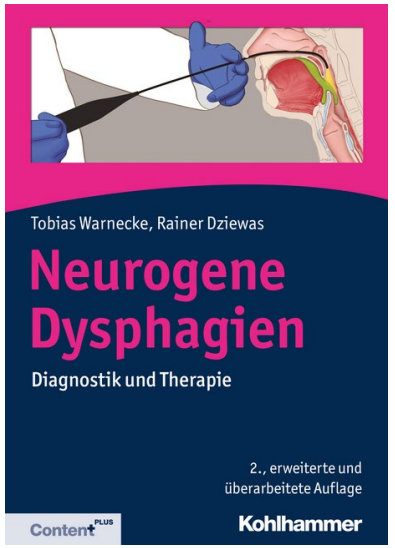

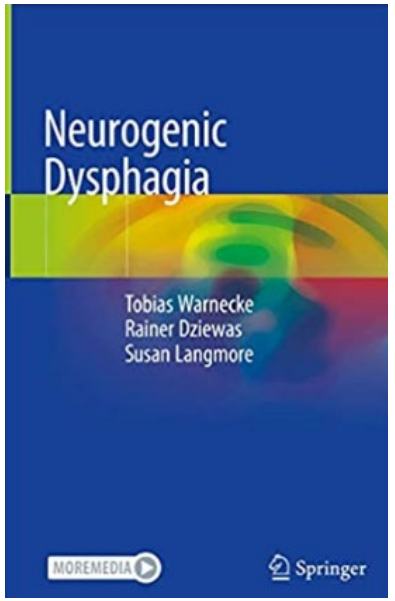

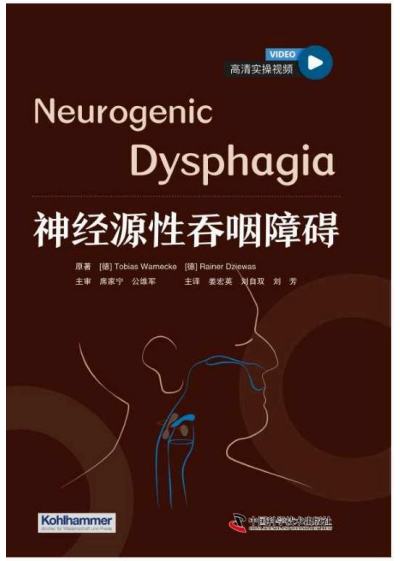

A special thanks to ESSD

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Vragen?

Scan de QR-code voor het doorsturen van uw vragen

- Uw naam (optioneel)
- Naam van de spreker
- Uw vraag

U kunt het formulier meermaals gebruiken/invullen

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- Naam van de spreker
- Uw vraag

U kunt het formulier meermaals gebruiken/invullen

Stuur uw vraag gerust in het Nederlands, wij vertalen indien nodig.

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05

Beyond the voice

A holistic approach to laryngeal rehabilitation

Prof. Dr. Sarah Wallace | Professor & Clinical Chair NHS
Manchester University

Atos
Coloplast Group

NHS Manchester University NHS Foundation Trust

MANCHESTER 1824 MACC

The University of Manchester Academic Critical Care

NTSP www.tracheostomy.org.uk National Tracheostomy Safety Project

Above Cuff Vocalisation: Beyond the voice, a ho approach to laryngeal rehabilitation

Professor Sarah Wallace OBE FRCSLT

Consultant Speech and Language Therapist
Wythenshawe Hospital, Manchester University NHS Trust
Honorary Clinical Chair, The University of Manchester
National Tracheostomy Safety Project
RCSLT Specialist Advisor
Visiting Professor - Manchester Metropolitan University & University of Leuven, Belgium

Manchester Metropolitan University

KU LEUVEN FACULTEIT GENEESKUNDE FACULTY OF MEDICINE

Disclosures

1. ATOS Tracheostomy Advisory Board

2. Safe and Effective Above Cuff Tracheostomy Vocalisation (SEACTV) study funded by the NIHR (i4i Product Development Award)

   Clinicaltrials.gov (NCT04647786) on 20/11/2020

   Favourable ethical opinion on 4/3/2022 (IRAS-ID 278006; REC-Ref 22/NW/0022)

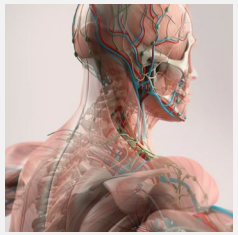
Overview and aims

1. Effects of intubation and tracheostomy on integrated laryngeal function
2. Negative impact on patient well-being and outcome
3. ACV and laryngeal rehab
4. Recent ACV research

Why laryngeal function matters

Larynx is a multi/shared organ system

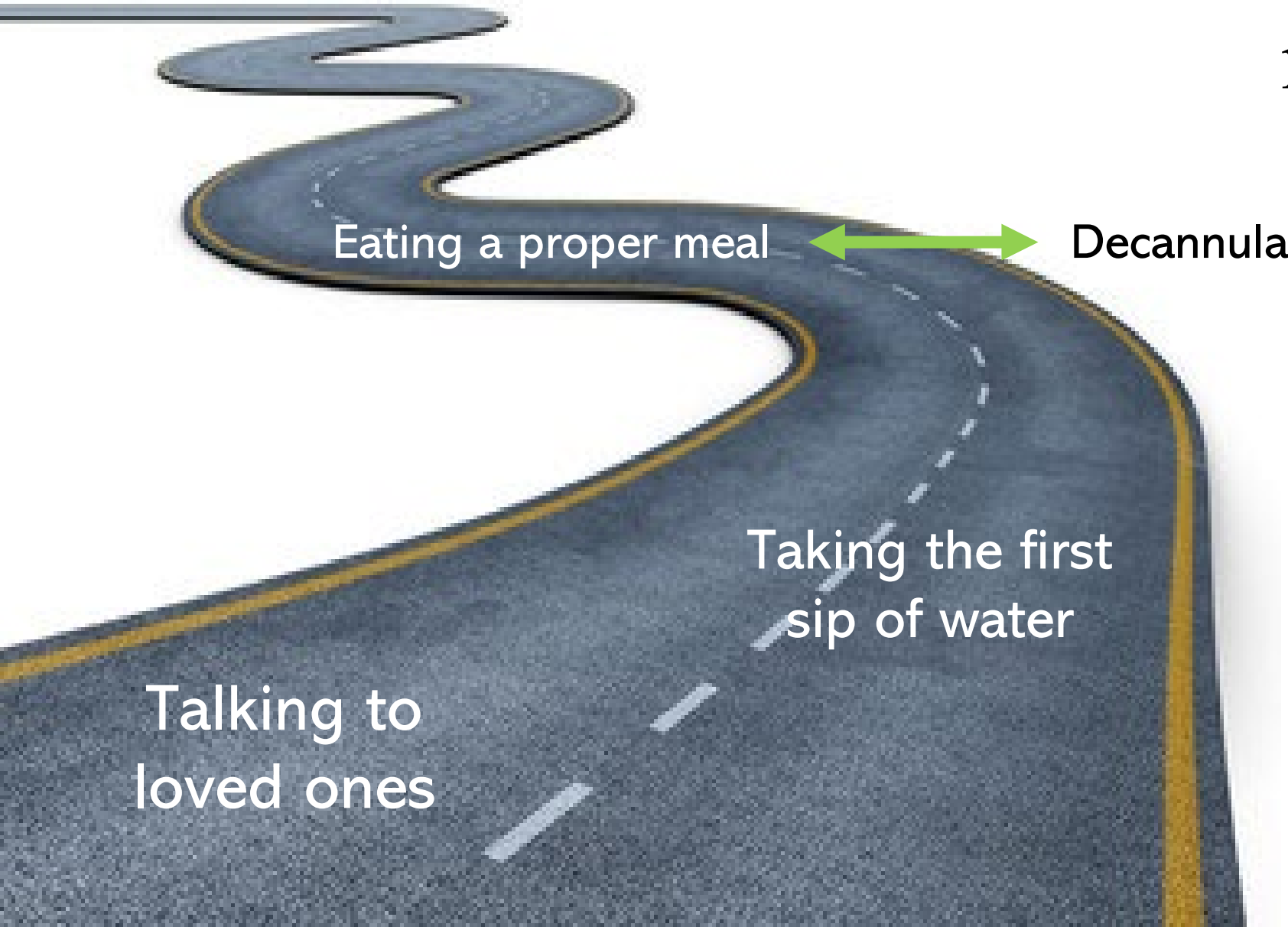
Voice, swallowing, airway protection, cough, breathing



Function requires normal anatomy and physiology

Upper airway airflow, subglottic pressure, sensation and timing are vital

Recovery milestones



Aetiologies of laryngeal dysfunction

Intubation

Mechanical ventilation

Respiratory disease

Weakness

Critical illness myopathy = 91% dysphagic*

Comorbidities

Neurology, respiratory, cancer, surgery, frailty

Delirium, cognition

Laryngo pharyngeal

Reflux – laryngeal injury

* Ponfick 2015

Intubation and tracheostomy stats

13-20 million people are intubated every year worldwide, ICU survival and post-airway sequelae rates are increasing

Laryngeal injury is associated with worse breathing and vocal symptoms

15-20,000 new tracheostomies per year in UK. 250,000 total per year in resource rich countries

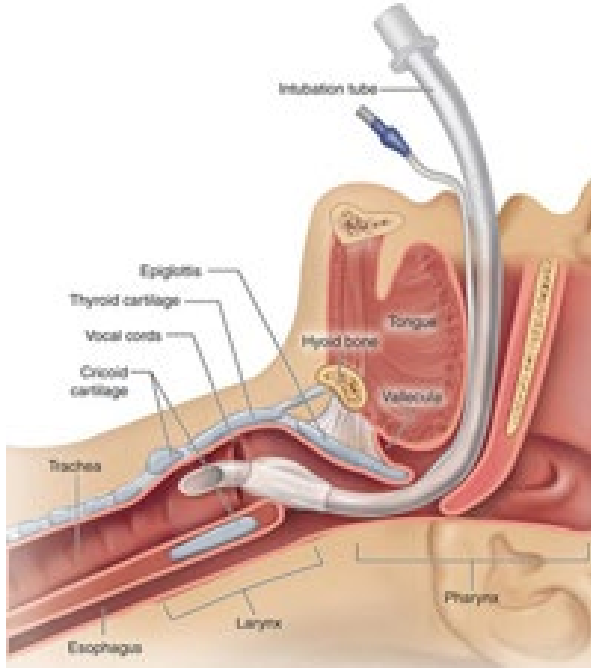
Mortality rates in trachy pts - 10-60% dependent on comorbidity

Tracheostomy does not eliminate laryngeal risk, it adds its own set of complications

Cárdenas, LC., *et al*. Trends in mortality in septic patients according to the different organ failure during15 years. *Crit Care* **26**, 302 (2022).

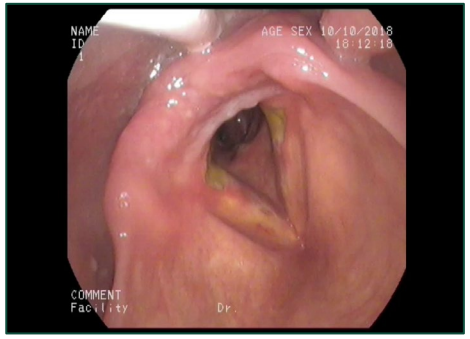
Effects of intubation on laryngeal function

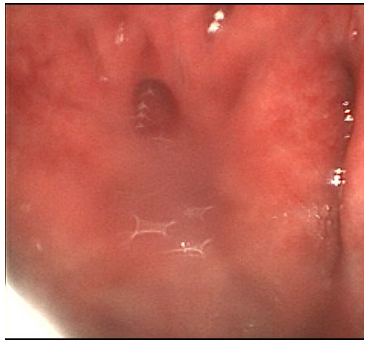
1. Laryngeal injury (in up to 83%), clinically significant in 10–20%
2. Desensitisation (in up to 77%), impairs cough, LAR
3. Disuse atrophy of laryngopharyngeal musculature
4. Sedatives associated with pharyngeal weakness and aspiration
5. Dysphagia and aspiration (in up to 60%)
6. Dysphonia (in up to 76%), a marker for laryngeal dysfunction
7. Reduced UES sphincter compliance
8. ↑ injury with duration, reintubation, tube size, cuff pressure, proning, sedatives

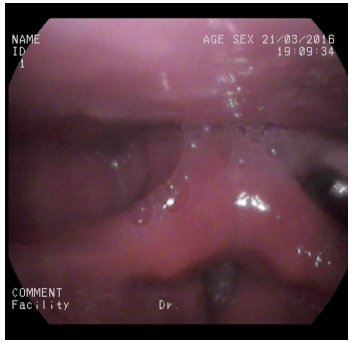


Brodsky et.al. 2018 *Crit Care Med* 46(12): 2010-2017, Kruscinas et al. *Crit Care Med* 2020, Plowman et al. *J Thoracic and CV Surg* 2021
Macht M et al., *Chest*, 2011. Kreinest M et al., *Crit Care Med*, 2020

Intubation-related laryngeal injury







Mucosal ischemia

Vocal fold immobility - cuff pressure on RLN

Persistent oedema

Ulceration, granulomas

Arytenoid cartilaginous trauma

Posterior glottic stenosis - airway obstruction

ELSEVIER

BJA Education, 21(7): 250–257 (2021)

doi: 10.1016/j.bjae.2021.02.005
Advance Access Publication Date: 21 April 2021

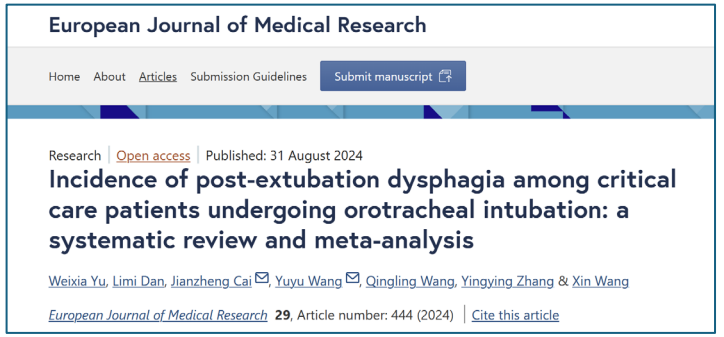
Laryngeal complications after tracheal intubation and tracheostomy

S. Wallace[1] and B.A. McGrath[1,2,*]

[1]Wythenshawe Hospital, Manchester University NHS Foundation Trust, Manchester, UK and [2]University of Manchester Academic Critical Care, Wythenshawe Hospital, Manchester, UK

*Corresponding author: Brendan.mcgrath@manchester.ac.uk

Keywords: complications; dysphagia; dysphonia; intra-tracheal; intubation; larynx; speech and language therapy; tracheostomy



European Journal of Medical Research

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Incidence of post-extubation dysphagia among critical care patients undergoing orotracheal intubation: a systematic review and meta-analysis

Weixia Yu, Limi Dan, Jianzheng Cai, Yuyu Wang, Qingling Wang, Yingying Zhang & Xin Wang

European Journal of Medical Research **29**, Article number: 444 (2024) | Cite this article

Impact of intubation on laryngeal sensation

Curr Otorhinolaryngol Rep. Author manuscript; available in PMC: 2014 Sep 22.

Published in final edited form as: Curr Otorhinolaryngol Rep. 2013 Sep;1(3):178–182. doi: 10.1007/s40136-013-0018-5

Neurophysiology and Clinical Implications of the Laryngeal Adductor Reflex

Amanda S Domer [1], Maggie A Kuhn [2], Peter C Belafsky [3,✉]

Multicenter Study > Dysphagia. 2019 Aug;34(4):521-528. doi: 10.1007/s00455-019-09980-1. Epub 2019 Jan 29.

Relationship Between Laryngeal Sensation, Length of Intubation, and Aspiration in Patients with Acute Respiratory Failure

James C Borders [1], Daniel Fink [2], Joseph E Levitt [3], Jeffrey McKeehan [4], Edel McNally [5], Alix Rubio [6]

Laryngeal Adductor Reflex

Bilateral firing of thyroarytenoid muscles to close VC & protect airway

→ LAR is absent in up to 77% post-extubation, LAR reduces with age

Diminished LAR is associated with intubation duration, **oedema**, secretions, dysphagia, aspiration

→ Oedema raises LAR threshold further

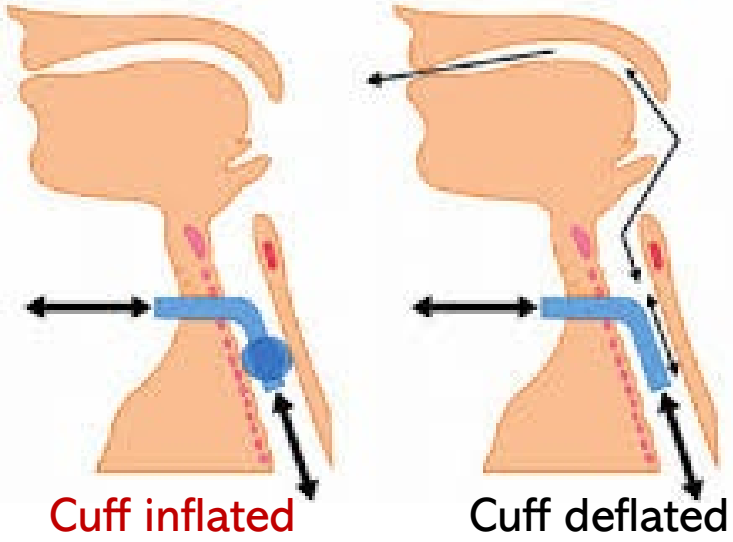
Severity of sensory impairment and the impact of airflow is not known

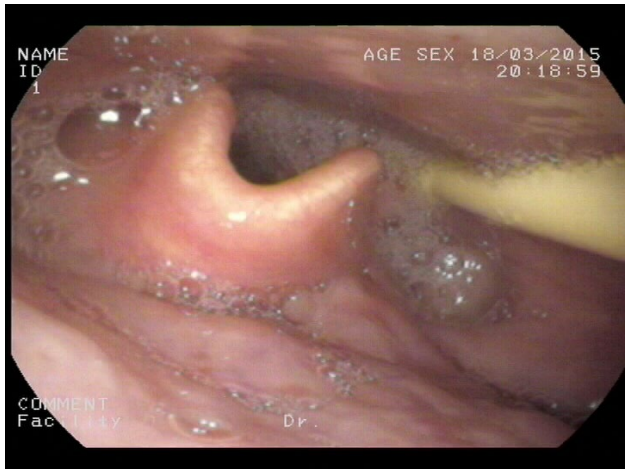
Aviv. *Ann Otol Rhinol Laryngol.* 1993 Oct;102(10):777-80, Labeit et al. *Neurogastroenterol Motil.* 2019 Nov;31(11):e13690.

Effect of tracheostomy on laryngeal function

- Loss of upper airway / laryngeal airflow
- Loss of voice
- Desensitisation, no afferent swallow trigger
- Laryngopharyngeal deconditioning & weakness
- Breath / swallow pattern incoordination

Effect of cuff inflation 'use it or lose it'

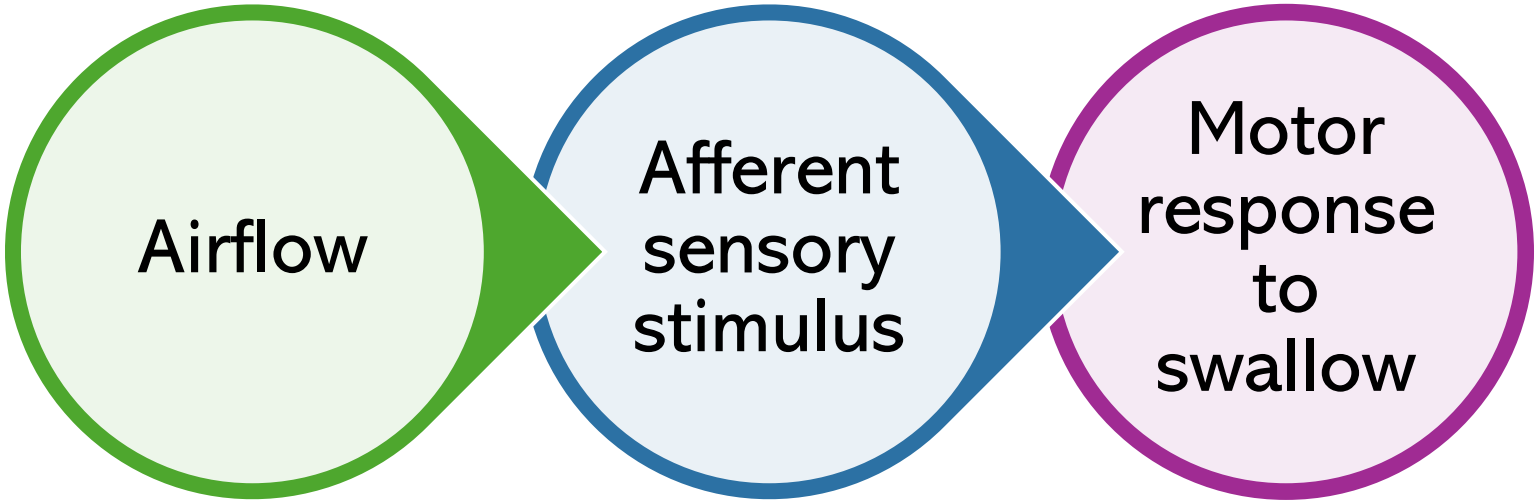




- Loss of sensation - silent aspiration
- Loss of subglottic pressure → ineffective cough, pharyngeal residue
- Secretions pool in upper airway

Brodsky 2018, Schefold 2017, Langmore 2020, Kelly 2020, Zuercher 2020, Kruscinas 2020, Borders 2019, Dawson 2021

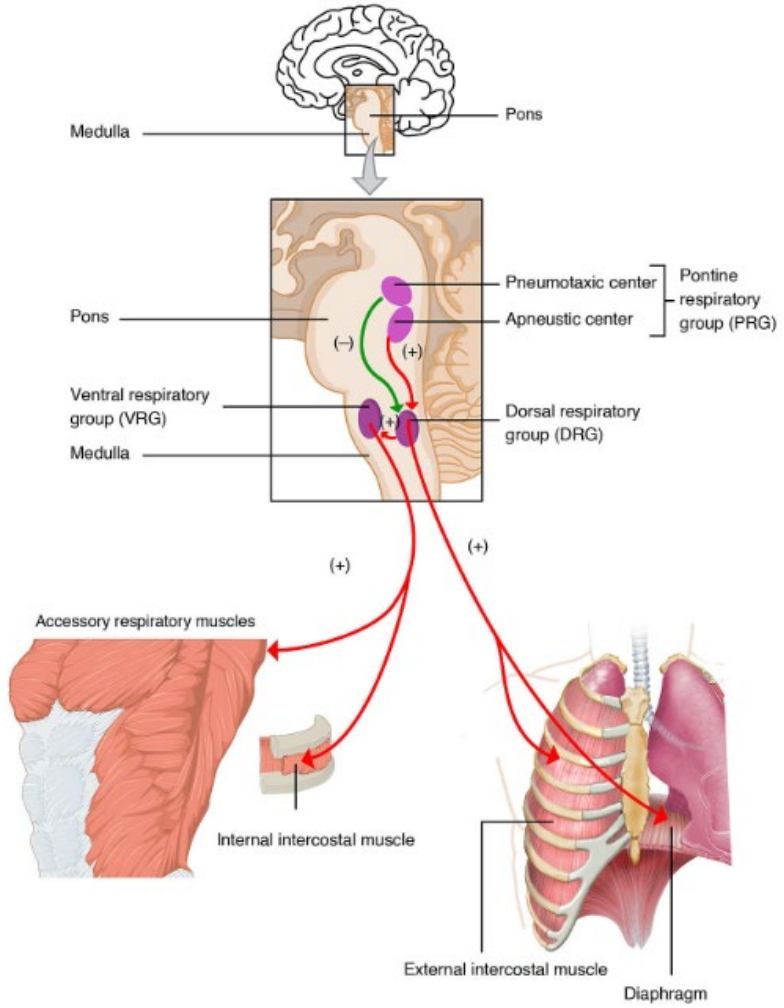
The swallow sensorimotor loop



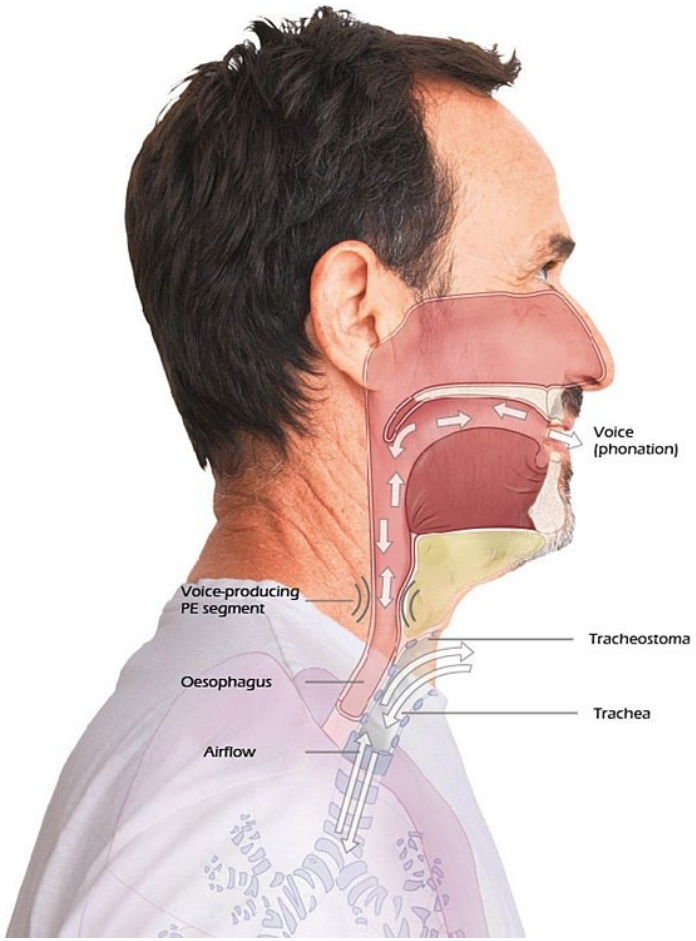
Breath– swallow coordination

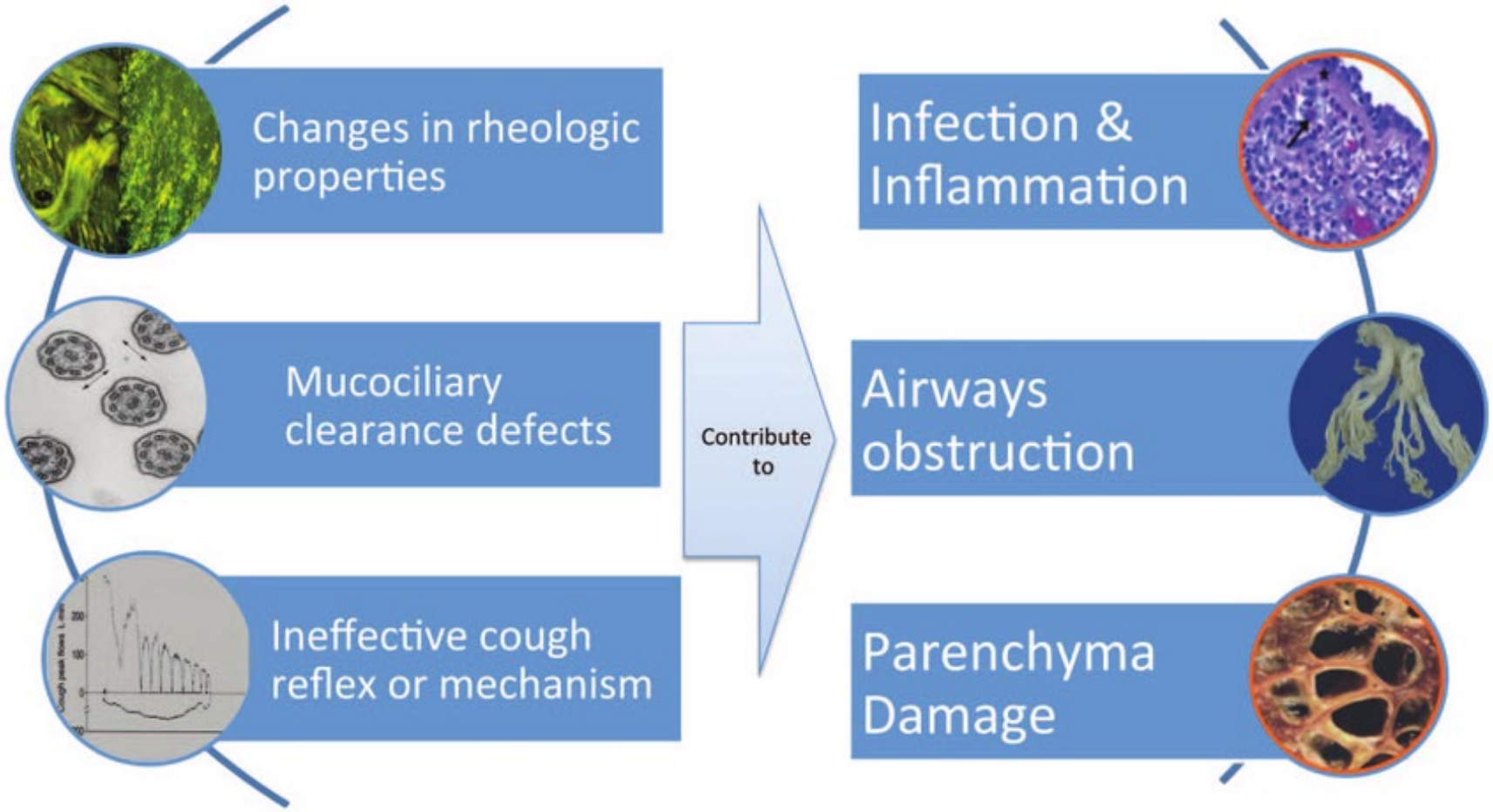
"I can't swallow right now, I have to keep breathing"

- Central Pattern Generators for respiration and swallowing are intertwined in the brainstem
- Sophisticated degree of coordination between the two systems
- Chewing disrupts respiratory cycles
- Larger lung volumes needed for liquids
- Hypercapnia reduces swallow frequency
- Ventilator alters synchrony with phonation, swallow apnoea



Impact of tracheostomy on secretion manageme





Increased secretion volume and viscosity
Risks – prolonged weaning, ICU stay

Consequences of laryngeal dysfunction

- Prolongs wean & need for trache
- ↑ ICU/hospital LoS
- Malnutrition, NBM, thirst
- Aspiration pneumonia
- Chronic dysphagia, tube feeding
- Chronic dysphonia
- Worse psychological well-being
- ↑ mortality

Dylczyk-Sommer 2020, Brodsky 2017; 2018; 2020, McIntyre 2021, Barker 2009, Zuercher 2019, Macht 2011, Marvin 2021

Psychological impact of voice loss

- Anxiety
- Loss of autonomy
- Frustration
- Isolation
- PTSD

↓ engagement with rehab and weaning

Journal of Critical Care 72 (2022) 154145

Contents lists available at ScienceDirect

Journal of Critical Care

journal homepage: www.journals.elsevier.com/journal-of-critical-care

What matters most to adults with a tracheostomy in ICU and the implications for clinical practice: a qualitative systematic review and metasynthesis

Helen Newman, MSc [a,b,*], Gemma Clunie, PhD [c,d], Sarah Wallace, MSc [e,f], Christina Smith, PhD [g], Daniel Martin, PhD [a,h], Natalie Pattison, PhD [i,j]

Voice = **IDENTITY**

Seen and heard as a unique person

Khalaila et al 2011 *Am J Crit Care* 20:470-479, Breckenridge et al 2014 *Heart Lung* 43:392-398


You are now reading this
in my voice

Voice loss impacts care

Difficulty optimising pain relief

3x more likely to have an adverse medical event

Difficulty managing **delirium**

Failed attempts to communicate induce staff stress

Bartlett *CMAJ* 2008, Bergbom-Engberg *Int Crit Care Nurs* 1993, Freeman-Sanderson *J Crit Care* 2016

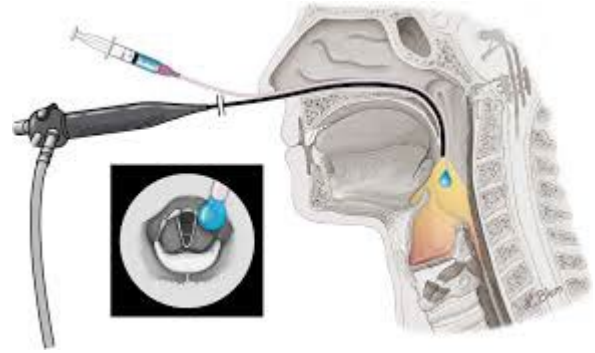
Prevention and assessment of laryngeal dysfun

Prevention

- Smaller ETTs, careful cuff pressure monitoring
- Early tracheostomy
- Early laryngeal rehabilitation

Assessment

- Clinical bedside exam
- FEES
- Detect injury, oedema, LPR, secretion issues
- Guide laryngeal rehabilitation



Sutt, Wallace, Egbers. Upper airway assessment for One-Way Valve use in a patient with a tracheostomy Am J SLP 2021

Aims of laryngeal rehabilitation

1. Restore upper airway physiology
2. Improve laryngeal function and outcomes
3. Safer, faster weaning and decannulation
4. Individualised rehab and humanisation
5. Improve QoL

Laryngeal rehab starts with restoring airflow

1. Early cuff deflation + One Way Valve (within 24-48hrs if haemodynamically stable

2. ACV if cuff inflated

Special Article

jics Journal of the Intensive Care Society

Benefits and options for voice restoration in mechanically ventilated intensive care unit patients with a tracheostomy

Journal of the Intensive Care Society
2022, Vol. 0(0) 1–8

DOI: 10.1177/17511437221113162
journals.sagepub.com/home/jics
SAGE

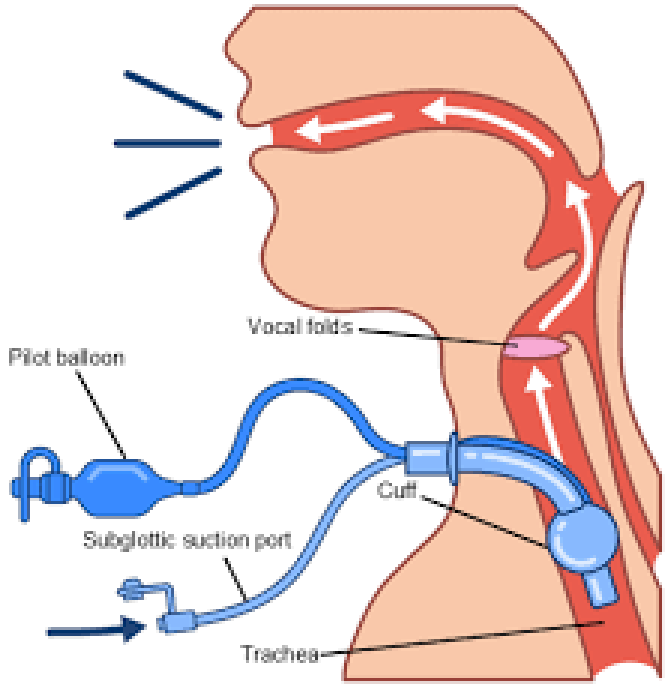
Sarah Wallace[1,2], Sue McGowan[3] and Anna-Liisa Sutt[4,5,6]

What is Above Cuff Vocalisation ACV?

Retrograde airflow delivered above the cuff via subglottic port, when cuff is inflated, no ventilator adjustments needed

Rationale

- Voice when cuff inflated
- Early laryngeal stimulation
- Restore physiology and sensation
- Precursor or adjunct to cuff deflation + OWV



McGrath & Wallace - 2016 *J Int Care Soc* 17(1):1-8, and Safety and feasibility *J Int Care Soc* 0(0) 1-7

ACV
Above Cuff Vocalisation

NTSP
www.tracheostomy.org.uk
National Tracheostomy Safety Project

https://www.youtube.com/watch?v=IAcfufLvM-c

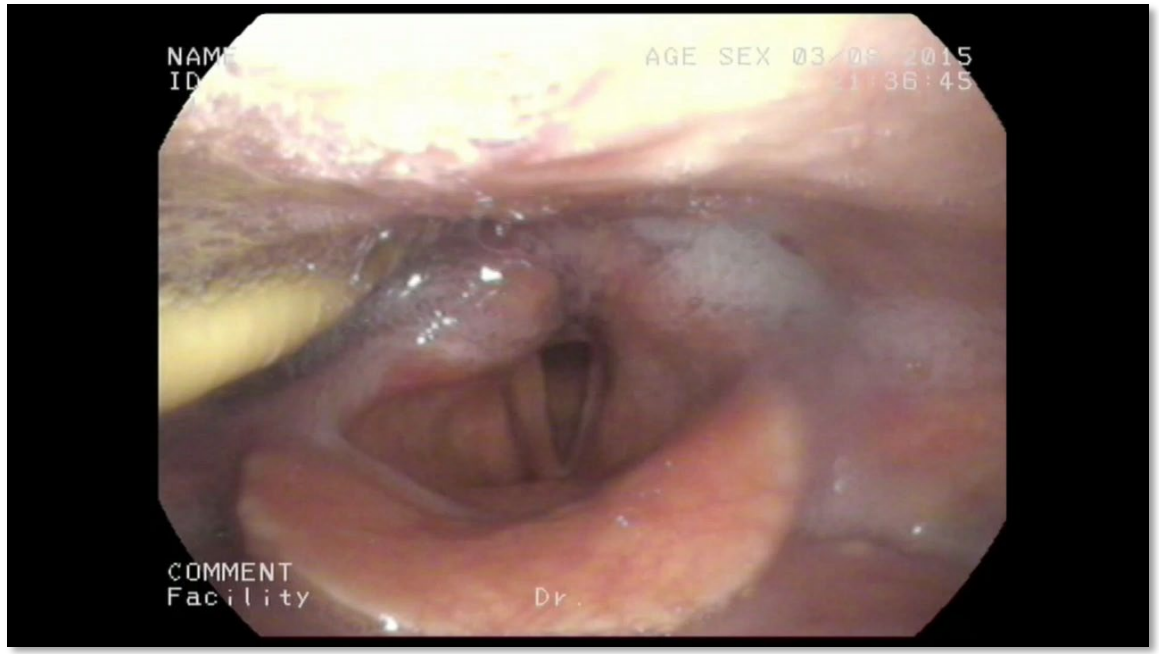
From ‘speaking’ to laryngeal rehabilitation

ACV is about laryngeal rehabilitation, not just voice

Laryngeal dysfunction is a multidisciplinary concern

Successful weaning depends on the larynx

ACV can support early laryngeal rehab



Provokes vocal fold closure, LAR

Stimulates swallow

Expels secretions

2-5l airflow/min

Safety, voice and comfort

Table 2. Effectiveness and complications of ACV.

Nausea	1	1.1
Patient asked to remove	1	1.1
Total	91	100.0

ACV: above cuff vocalisation.

Original article

Safety and feasibility of above cuff vocalisation for ventilator-dependant patients with tracheostomies

Brendan A McGrath[1], Sarah Wallace[2], Mark Wilson[2], Leanne Nicholson[2], Tim Felton[1], Christine Bowyer[1] and Andrew M Bentley[1]

27.5%

Fiberoptic endoscopic evaluation of swallowing (FEES)

Patient selection for ACV

1. Patent upper airway
2. Stable ventilation
3. Inflated cuff all or most of the time
4. Subglottic suction tracheostomy tube

Contraindications

- Airway obstruction
- Surgical emphysema
- Intolerance

Acta Anaesthesiol Scand. 2021 Jan; 65(1): 15–25.
Published online 2020 Nov 1. doi: 10.1111/aas.13706
PMCID: PMC7756796
PMID: 32920849

Above cuff vocalisation (ACV): A scoping review

Antonija Petosic,[1,2] Marit F. Viravong,[3] Anna M. Martin,[4] Cecilie B. Nilsen,[1] Kjell Olafsen,[5] and Helene Berntzen[1]

- 17 studies
- Audible voice or whisper in 88% across studies
- QoL scores improved (V-RQOL and QOL-MV)
- Minor complications in 27%
- Two serious adverse events: subcutaneous emphysema

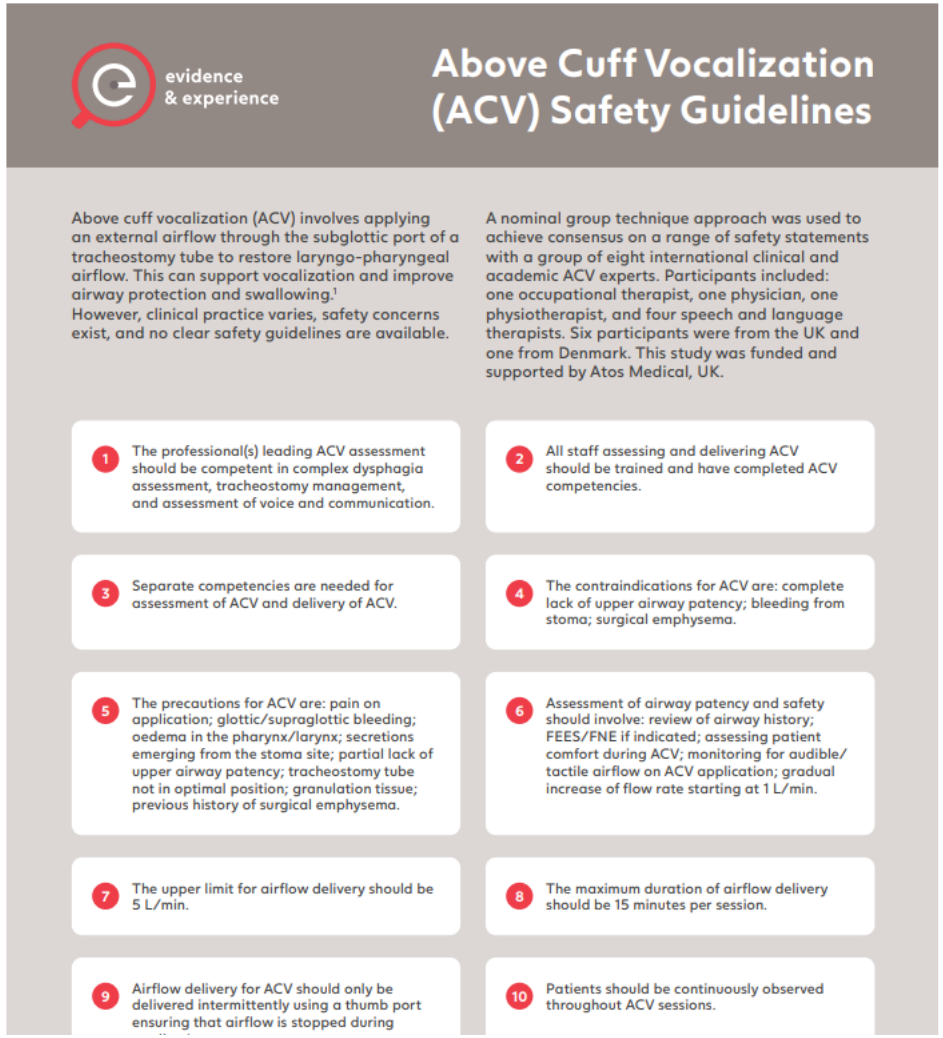
Observational Study > Arch Phys Med Rehabil. 2022 Mar;103(3):394-401.

doi: 10.1016/j.apmr.2021.08.016. Epub 2021 Sep 22.

Determining the Prevalence, Implementation Approaches, and Opinions of Above Cuff Vocalization: A Survey of Health Care Professionals

Claire S Mills [1], Emilia Michou [2], Mark C Bellamy [3], Heidi J Siddle [4], Cathy A Brennan [5], Chris Bojke [5]

ACV practice varies widely
Barriers - lack of knowledgeable staff, access to training



evidence & experience

Above Cuff Vocalization (ACV) Safety Guidelines

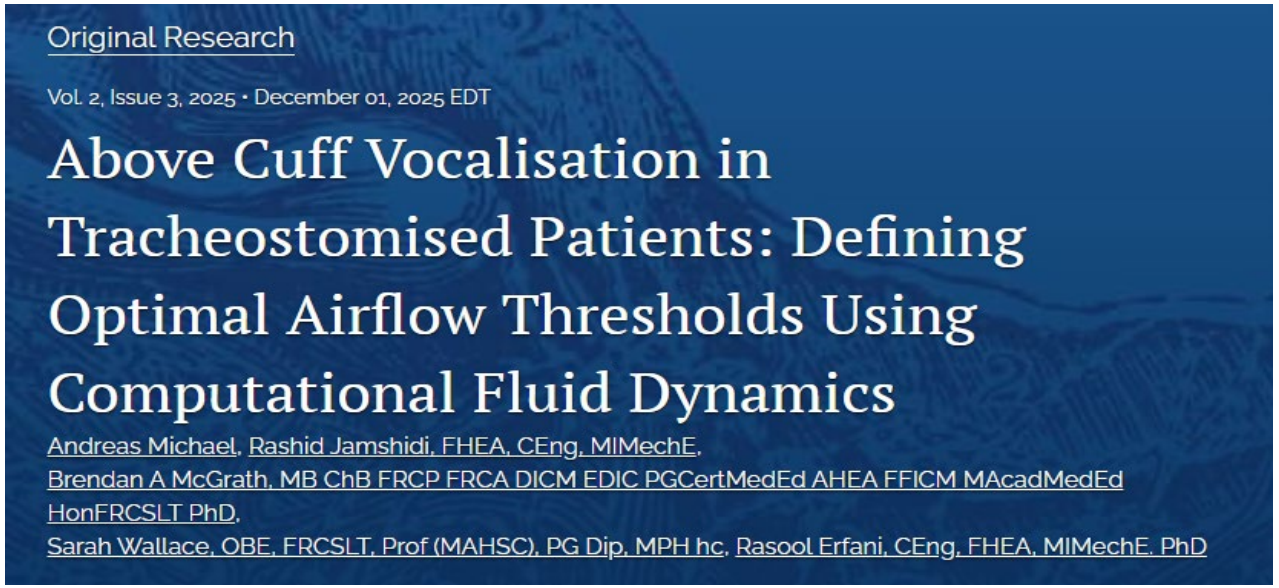
Above cuff vocalization (ACV) involves applying an external airflow through the subglottic port of a tracheostomy tube to restore laryngo-pharyngeal airflow. This can support vocalization and improve airway protection and swallowing.[1]
However, clinical practice varies, safety concerns exist, and no clear safety guidelines are available.

A nominal group technique approach was used to achieve consensus on a range of safety statements with a group of eight international clinical and academic ACV experts. Participants included: one occupational therapist, one physician, one physiotherapist, and four speech and language therapists. Six participants were from the UK and one from Denmark. This study was funded and supported by Atos Medical, UK.

1. The professional(s) leading ACV assessment should be competent in complex dysphagia assessment, tracheostomy management, and assessment of voice and communication.
2. All staff assessing and delivering ACV should be trained and have completed ACV competencies.
3. Separate competencies are needed for assessment of ACV and delivery of ACV.
4. The contraindications for ACV are: complete lack of upper airway patency; bleeding from stoma; surgical emphysema.
5. The precautions for ACV are: pain on application; glottic/supraglottic bleeding; oedema in the pharynx/larynx; secretions emerging from the stoma site; partial lack of upper airway patency; tracheostomy tube not in optimal position; granulation tissue; previous history of surgical emphysema.
6. Assessment of airway patency and safety should involve: review of airway history; FEES/FNE if indicated; assessing patient comfort during ACV; monitoring for audible/tactile airflow on ACV application; gradual increase of flow rate starting at 1 L/min.
7. The upper limit for airflow delivery should be 5 L/min.
8. The maximum duration of airflow delivery should be 15 minutes per session.
9. Airflow delivery for ACV should only be delivered intermittently using a thumb port ensuring that airflow is stopped during
10. Patients should be continuously observed throughout ACV sessions.

ATOS ACV safety guidelines

Modelling upper airway airflow on ACV

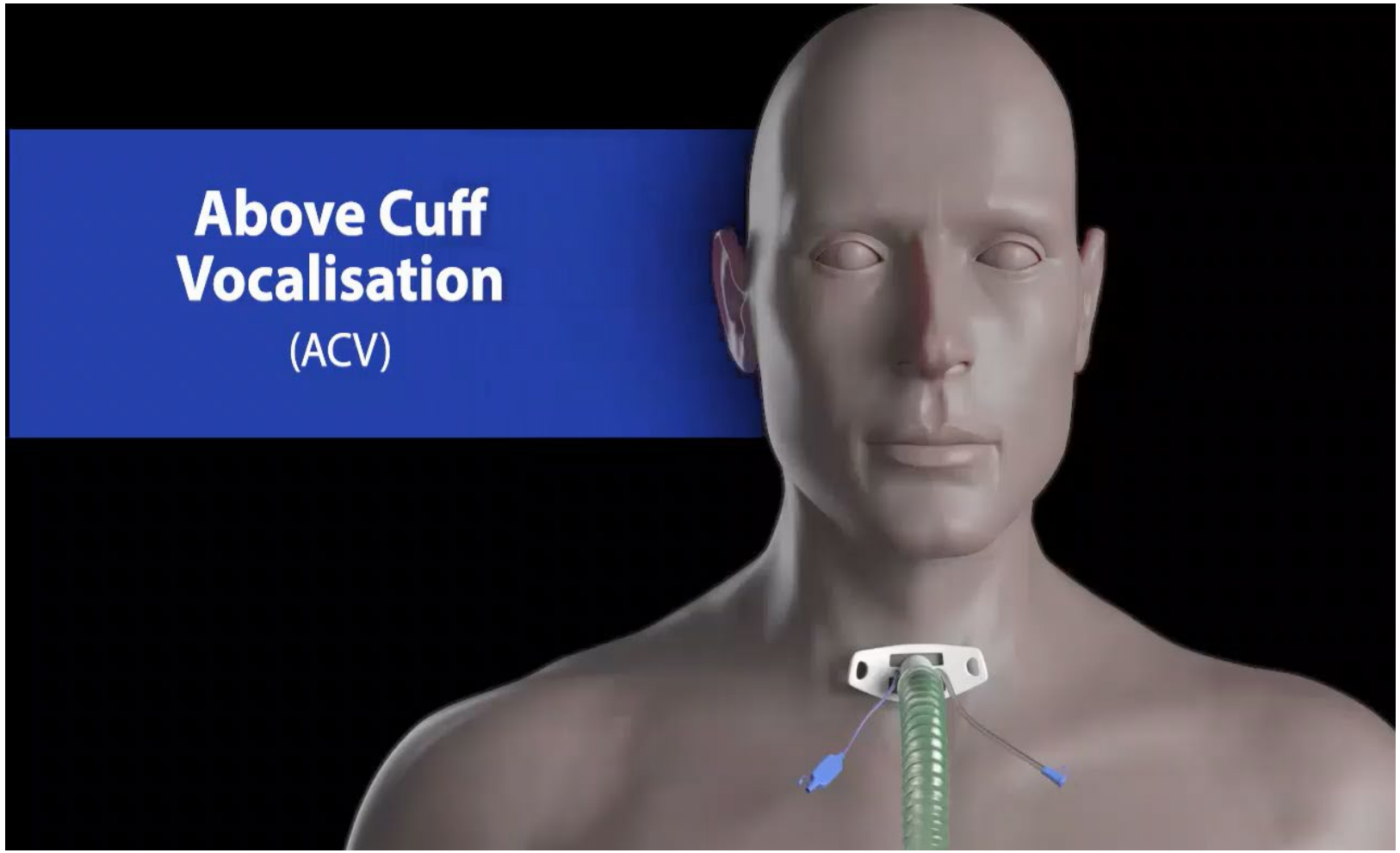


2.17 l/min matched natural exhalation velocity/pressures - enough for voice

Flow rates ≥5 l/min generate significant turbulence & pressure, no vocal benefit

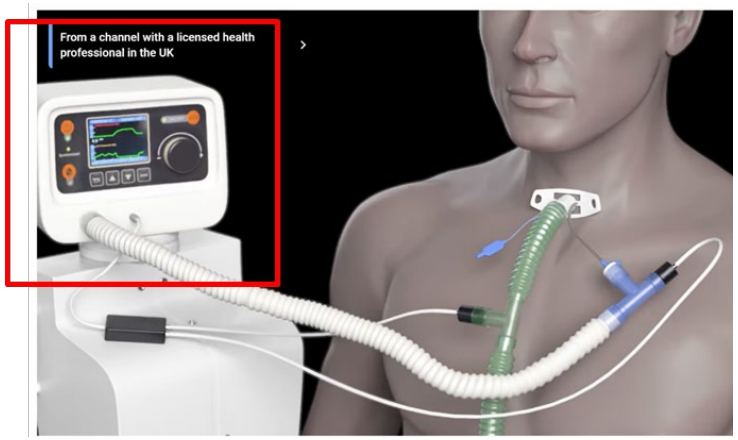
Latest ACV research

Manchester, device development



SEA CTV

‘Safety and Effectiveness of Above Cuff Tracheostomy Vocalisation’



SEACTV study aims

Test ACV safety parameters and measure effectiveness

Determine impact of airflow on voice, swallow, sensation, secretion management & aspiration severity

Methods

Design and build prototype, bench test

Clinical trial on ICU

In-built data chip captures episodes, alerts

E-Stim catheter measures pharyngeal sensory thresholds

Pre and post ACV

FEES

Pre ACV, with ACV, and follow-up

Daily patient & staff ratings of voice, comfort & anxiety

E-Stim catheter

Visual Analogue Scale scores
0 = no voice, uncomfortable
100 = normal voice, comfortable


DS2 Trigger
DS7A Stimulator
Connecting cables
Gaeltech eStim catheter

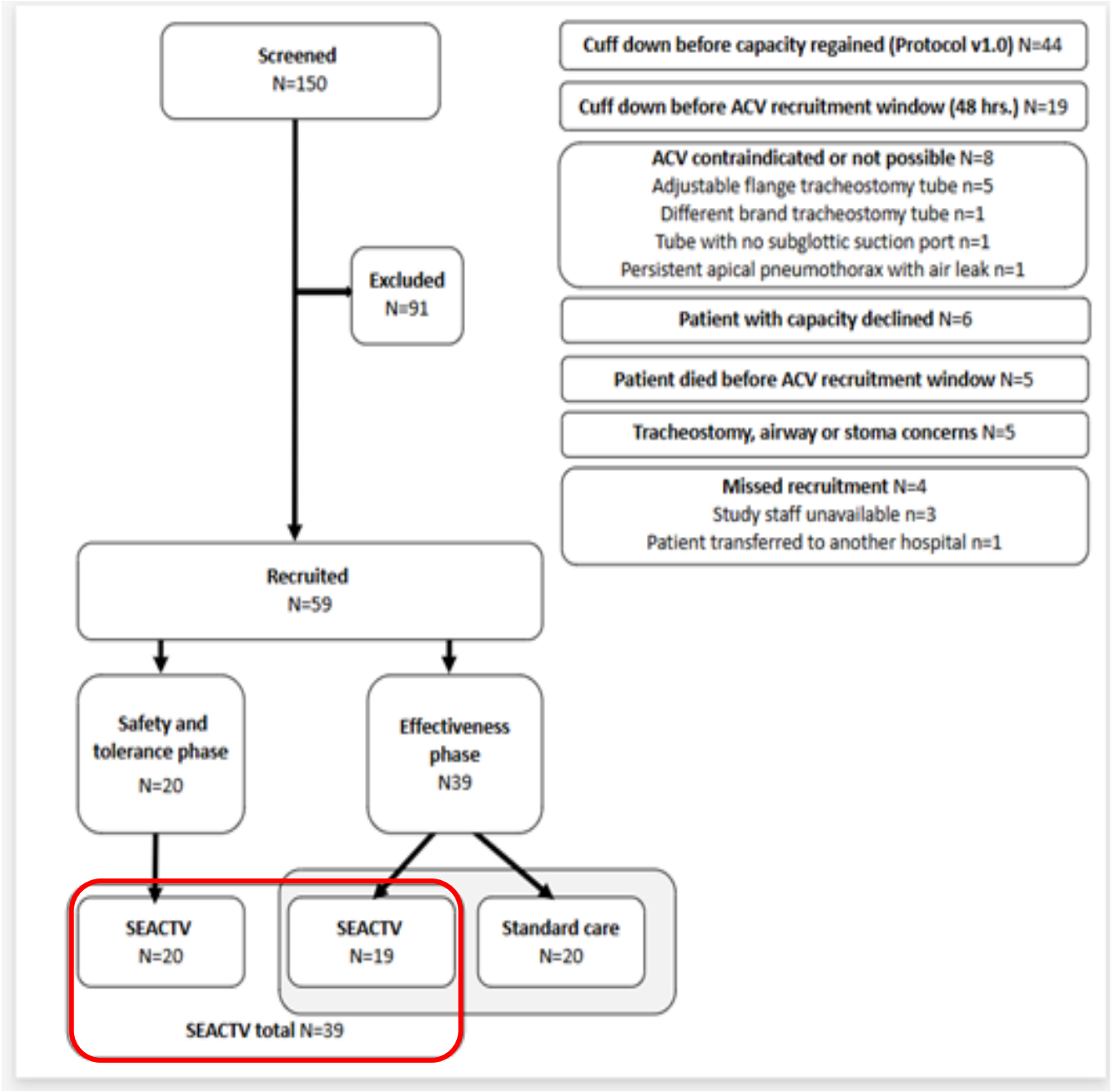
ICU recruitment

n=59 pts

39 had SEACtV

20 had standard care
(cuff up/ down, OWV, basic ACV)

Excluded cuff down, ACV unsafe



Results– Safety and comfort

SEACTV device use - 5.3 days per patient, 37.5 minutes each episode

Voice

35/39 (89.7%) achieved voice everyday, voice quality was rated 22-95/100

Tolerance

Humidification increased the duration of ACV by 23 mins over 7 days

Ease of use

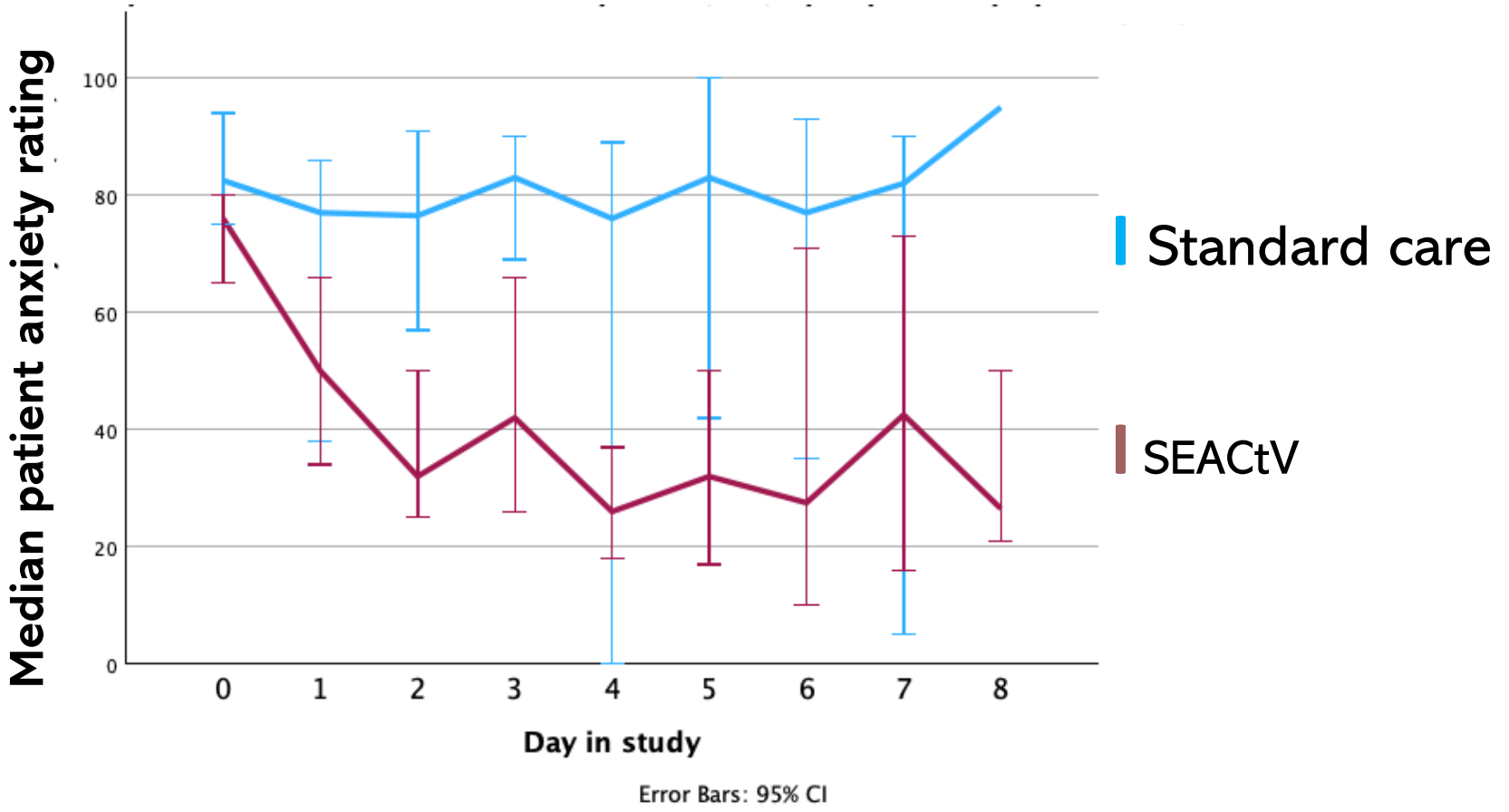
72/100, highest rating 100

SEACtV delivered ACV for longer with no adverse effects
SEACtV was effective, comfortable, and easy to use

Results Patient anxiety

100 extremely anxious

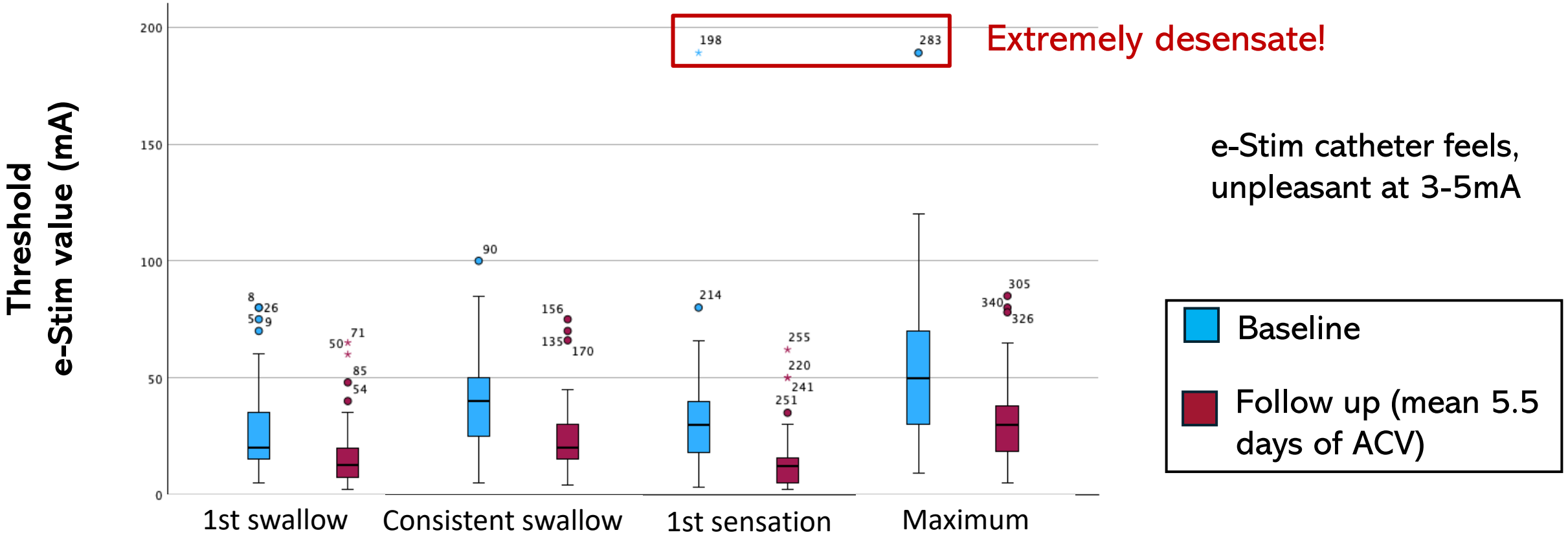
0 not anxious



All patients had high anxiety levels, standard care pts stayed highly anxious
SEACTV - anxiety levels reduced quickly, stayed low

Results: Laryngopharyngeal sensation

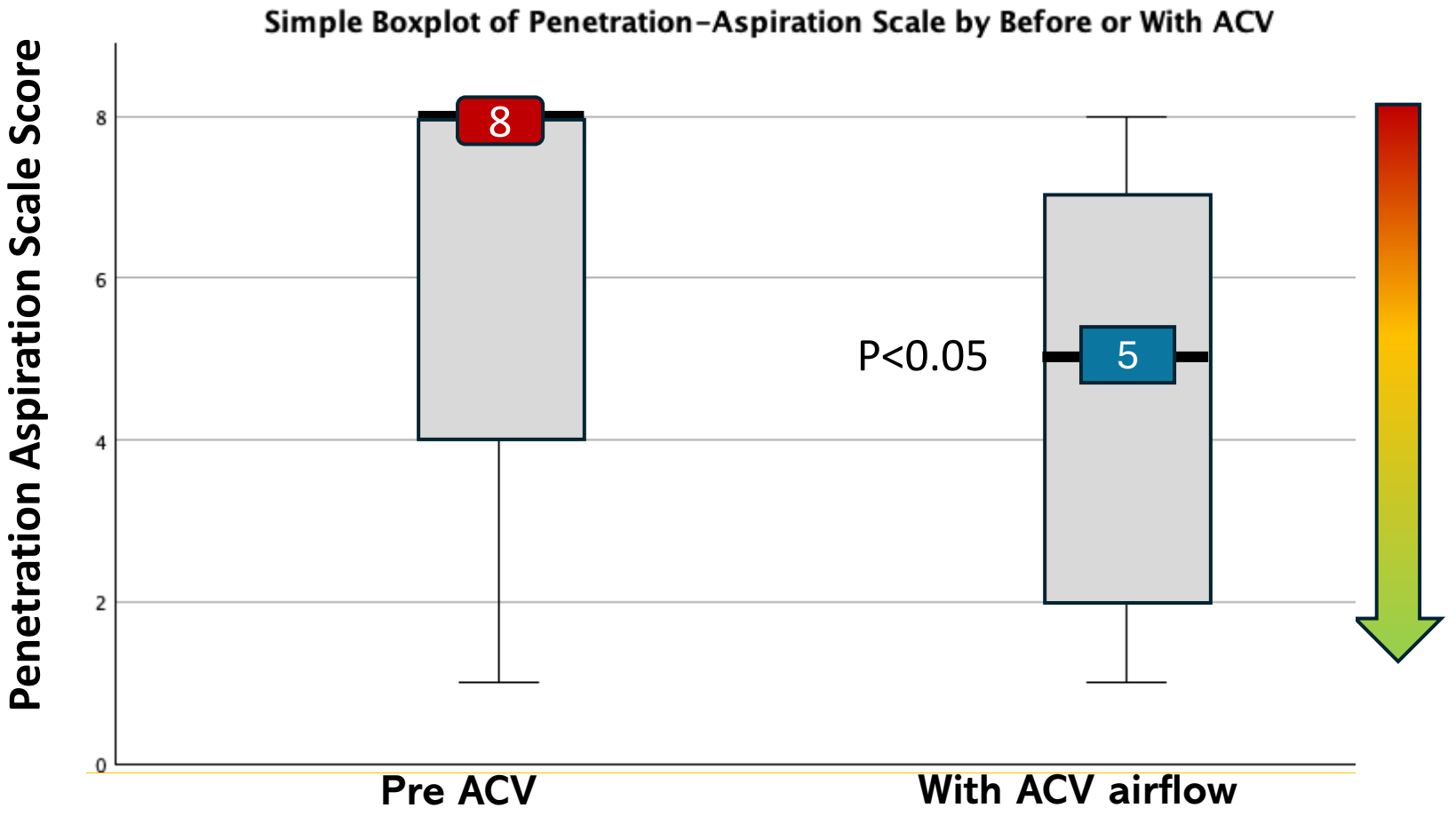
4 sensory thresholds recorded



All thresholds dropped = <u>sensation improved</u>

<u>Quantifies the impact of airflow on sensory impairment</u>

Results Aspiration severity



Penetration Aspiration Scale

8 = Silent aspiration
worst rating

5 = Material contacts vocal folds
No aspiration

1 = No penetration or aspiration

Rosenbek et.al. 1996. PAS - *Dysphagia* 11:93-98

Immediate and significant improvement in aspiration severity with airflow
Earlier oral intake

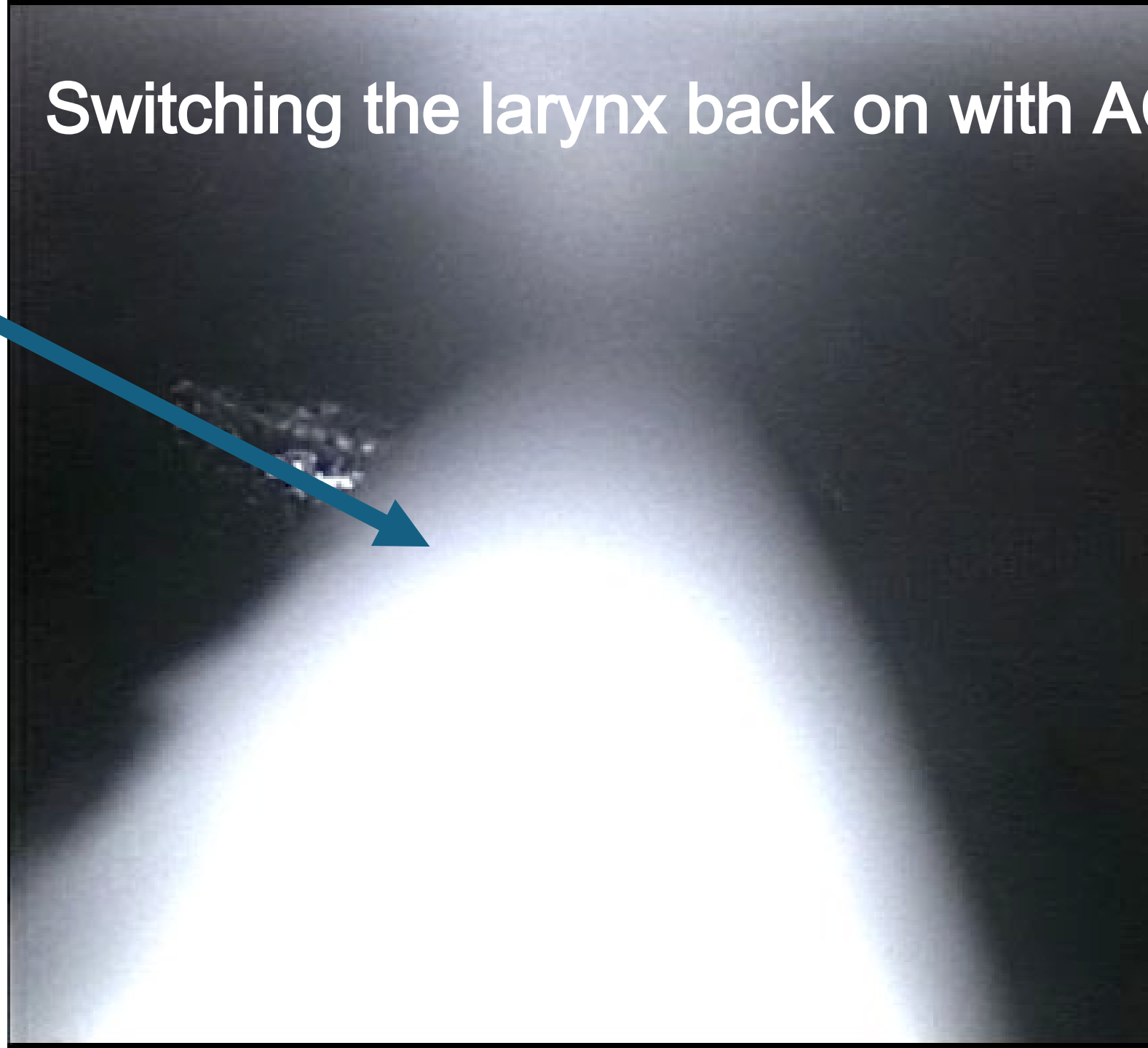
FEES

Cuff inflated

Larynx full of secretions

ACV airflow starts, see bubbles
Cough and swallow trigger spontaneously

Airway clears
Vocal cords moving
Laryngeal anatomy visible
No secretions /aspiration
Cough/swallow frequency improve



Take home messages

Laryngeal dysfunction is common and complex

ACV provides holistic laryngeal rehabilitation earlier

Supports humanisation and QoL

Research gaps – larger studies, protocol refinement

Thank you, questions?

sarah.wallace@mft.nhs.uk

Communication with ACV

Jeanette, 56yrs old Heart transplant

Before ACV and after ACV airflow is turned on

Vragen?

Scan de QR-code voor het doorsturen van uw vragen

- Uw naam (optioneel)
- Naam van de spreker
- Uw vraag

U kunt het formulier meermaals gebruiken/invullen

Stuur uw vraag gerust in het Nederlands, wij vertalen indien nodig.

Atos
Coloplast Group

Pauze

15:15 – 15:45

Vragen?

Scan de QR-code voor het doorsturen van uw vragen

- Uw naam (optioneel)
- Naam van de spreker
- Uw vraag

U kunt het formulier meermaals gebruiken/invullen

06

Tracheacanule zorgpad

Hans Janssen | Ventilation Practicioner Amphia Ziekenhuis

Atos
Coloplast Group

Zorgpad
Tracheacanule & Tracheastoma zorg

Amphia

- Grootste niet academische fusie ziekenhuis
- Cardio chirurgisch centrum
- 572 eenpersoonskamers met eigen douche en toilet
- Verzorgingsgebied van circa 400.000 mensen
- Op 1 na grootste werkgever van Breda
- Amphia komt thuis
- Goed geïnformeerde patiënt die ook de benodigde handelingen zelfstandig en juist kan uitvoeren.

Amphia

Samen Gezonder

De Professional
Patiëntenzorg
Samenwerking
Wetenschap en Techniek
Duurzame bedrijfsvoering

Samen, Aandacht, Deskundig, Gedreven.

Organogram per 1 januari 2026

RAAD VAN COMMISSARISSEN

- Voorzitter: A.E. (Arno) Timmermans
- Vicevoorzitter: Mw. drs. J.D. (Jolanda) Lamse-Minderhout
- Lid: Drs. B.E. (Bas) van den Dungen
- Lid: Prof. dr. S. (Sjoerd) Repping
- Lid: Mw. prof. dr. H. (Hester) Vermeulen

RAAD VAN BESTUUR

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- Voorzitter (CEO): dr. R. (Robert) Wagenmakers MBA, Tst. 3068
- Lid (CFO): I.W.A. (Ivo) Vergouwen RC AA MSc, Tst. 3070

ALV Coöperatie MSB-A

MSB-A-BESTUUR

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- Vicevoorzitter: Drs. Th. (Thijs) de Wit, plastisch chirurg, Tst. 2331
- Lid: Mw. dr. A.G.W. (Anouk) van Norden, neuroloog, Tst. 5636
- Lid: Dr. P.D. (Paul) Gobardhan, chirurg, Tst. 1123
- Lid: Mw. drs. D.C. (Dominique) de Lange, Klinisch Geriater, Tst. 2532
- Directeur: Ir. S. (Sietske) Groenbroek-Huizer, Tst. 5445

BESTUURSRAAD

ZORGGROEPEN EN ZORGKERNEN

Zorggroep 1 Diagnostiek en behandeling
Mw. S. (Susanne) Nieuwenhuijsen MBA, Tst. 5887

- Radiologie: Mw. drs. I. (Ilse) Niers-Stobbe, Tst. 5561
- Nucleaire Geneeskunde: Drs. E.A. (Erik-Jan) van Asperen, Tst. 4295
- Pathologisch Laboratorium: Drs. A.J.P. (Peter) Joosten a.i. Tst. 4192
- Farmacie A+ Apotheek: Dr. J. (Jeroen) Diepstraten, Tst. 4102
- Microvida (Medische Microbiologie): Drs. W. van den Bijllaardt arts-microbioloog, portefeuillehouder Amphia, Tst. 5623
- Result Laboratorium: dr. A.J. van Gammeren Klinisch Chemicus en portefeuillehouder Amphia, Tst. 5259

Zorggroep 2 Hart, Vaten en Hersenen
R.J.J. (Roel) de Vos MSc, Tst. 5179

- Cardiologie: Dr. D. (Dolf) Segers, Tst. 4002
- Cardio-thoracale Chirurgie: Drs. M. (Mohamed) Bentala, Tst. 4461
- Neurologie: Mw. dr. L. (Lotte) Vlam, Tst. 7443
- Neurochirurgie: Mw. dr. L. (Lotte) Vlam, Tst. 7443
- Ziekenhuis Psychiatrie: Drs. Y.R.M. (Yashvir) Sukul, Tst. 2068
- Medische Psychologie: Mw. drs. M. (Marieke) Damen, Tst. 4296

Zorggroep 3 Vrouw-Moeder-Kind
Mw. E. (Emma) Zwaveling MSc, Tst. 4410

- Gynaecologie: Dr. D. (Dennis) van Hamont, Tst. 1494
- Verloskunde: Mw. dr. M. (Marjolein) Santema, Tst. 1490
- Kindergeneeskunde*: Mw. drs. S.M.H.B. (Saskia) de Pont, Tst. 2641
- Bekkenbodemcentrum: Mw. drs. E.A.E.M. (Eline) Reynaers, Tst. 1303
- Annature Geboortezorg: Mw. drs. L. (Linda) Nijenhuis-Dijkstra, Directeur Bedrijfsvoering, Tst. 1442

* incl. Team SIP (Signalering Inventarisatie en Preventie huiselijk geweld en Kindermishandeling)

Zorggroep 4 Bewegen en complex snijdend
Drs. P. (Pim) Sas, Tst. [illegible]

- Chirurgie: Drs. M.G. (Thijs) Buimer, Tst. 7663
- Urologie: Dr. H.J.H.P (Hans) Broos, Tst. 2502
- Orthopedie / Orthopedische Kliniek Amphia: Dr. S.B.T. (Stefan) Bolder, Tst. 1380
- Sportgeneeskunde: Mw. drs. T.A.M. (Tessa) Backhuijs, Tst. 5215
- Revalidatiegeneeskunde: Drs. M. (Michiel) Kortsmit, Tst. 5491
- Fysio- en Ergotherapie / Logopedie / Diëtetiek
- Klinische Geriatrie: Drs. A.C.G. (Geert) Weststrate, Tst. 1315

Zorggroep 5 Oncologie en Inwendige specialismen
Mw. L.A.C.L. (Linda) Klouwens MSc, Tst. 1588

- Zorgkern Oncologie/ Hematologie: Mw. Ir. J.B. (Joan) Heijns, Tst. 4155
- Interne Geneeskunde: Dr. W. (Sjoerd) van Thiel, Tst. 5458
- Maag-, darm-, leverziekten, Endoscopie & Centrale Scopenreiniging en Desinfectie: Dr. J.H. (Jasper) Smalberg, Tst. 4309
- Reumatologie: Drs. E.H.C.C. (Eefje) Janssen, Tst. 2447
- Longgeneeskunde: Dr. K.H. (Cor) van der Leest, Tst. 5679

Zorggroep 6 Acute zorg
Mw. S. (Stefanie) van Dinther, Tst.4264

- Intensive Care: Drs. D. (Debby) Vriens, Tst. 5831
- SpoedEisende Hulp: Mw. dr. G. (Gerba) Buunk, Tst. 5471; Dr. P. (Pieter) Boele van Hensbroek, Tst. 4445
- Acute Opname Afdeling: Mw. dr. G. (Gerba) Buunk, Tst. 5471
- Commissie Reanimatie Amphia (CRAZ): Mw. S.I.M. (Simone) van Zijll Langhout (voorzitter), Tst. 5244
- Geestelijke verzorging
- Amphia Thuis zorgteam
- Transfer
- Medisch Maatschappelijk Werk

Zorggroep 7 OK
Mw. M. (Mirjam) Nagtegaal, Tst. 2581

- Operatiekamercomplex Centrale Sterilisatie Afdeling Opname/ Voorbereidingsplein: Drs. L.H. (Lode) Jacobs, Tst. 5245; Drs. H.J.H.P. (Hans) Broos, Tst. 2502
- Anesthesiologie

Zorggroep 8 Monodisciplinaire vakken/ zintuigen
Mw. drs. M. (Mélinda) Choo, Tst. 5533

- Mond-, Kaak- en Aangezichtschirurgie: Mw. drs. A.J. (Hanneke) Kouwenberg, Tst. 5842
- Centrum Bijzondere Tandheelkunde: Drs. P.A.L. (Pascal) Mel, Tst. 3042
- Oogheelkunde: Mw. drs. I.L.A. (Irene) van Liempt, Tst. 7280
- Plastische chirurgie: Drs. G.H.C.G. (Guido) Dolmans, Tst. 4020
- Keel-, Neus- en Oorheelkunde: Drs. G.L.E. (Geert) Küppers, Tst. 4014
- Dermatologie/ ZBK / Medische Fotografie: Dr. S.P. (Bas) Prens, Tst. 5033/7477
- Pijncentrum / Palliatie: Mw. drs. M.W.A. (Miriam) van der Velden, Tst. 1554
- Behandelcentrum

Gegevens per 01-01-2026

Zorgpaden

Doel

Iedere patiënt heeft recht op dezelfde, hoogwaardige zorg op basis van de laatste wetenschappelijke inzichten

- Verantwoordelijkheid: management van de zorgkernen (managers Zorg en Bedrijfsvoering, medisch managers, Teammanagers
- Jaarlijks wordt een selectie gemaakt
- Ingerichte zorgprocessen zijn relevant voor de patiëntpopulatie van het ziekenhuis en sluiten aan bij de missie van het ziekenhuis.
- De selectie van de zorgprocessen is mede gebaseerd op richtlijnen die van toepassing zijn op de diensten en patiënten van het ziekenhuis, verplichte landelijke richtlijnen zijn bij dit proces inbegrepen.

- kenniskern Proces & Innovatie
- kenniskern Kwaliteit & Veiligheid

Doel

Doel

Uniforme werkwijze voor de behandeling van patiënten met tijdelijke luchtweg / eindstandige luchtweg tijdens het traject dat onder de verantwoordelijkheid van Amphia valt (spoed/klinisch/poliklinisch), op een dusdanige wijze dat het:

- Veilig,
- Efficiënt,
- Effectief wordt uitgevoerd
- Goed geïnformeerde patiënt die ook de benodigde handelingen zelfstandig en juist kan uitvoeren.

Scope

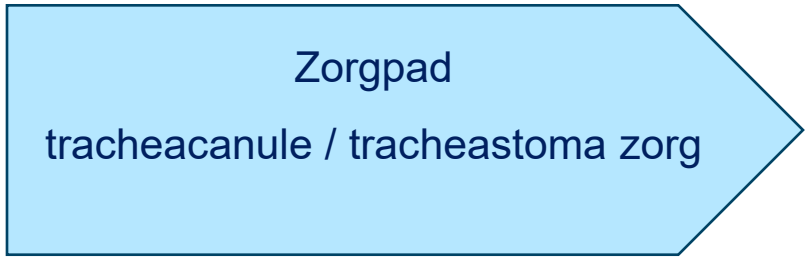
Scope

Volledige zorg die Amphia levert aan patiënten met/zonder canule (die deze reeds hebben of nog gaan krijgen)

Begin/start zorgpad

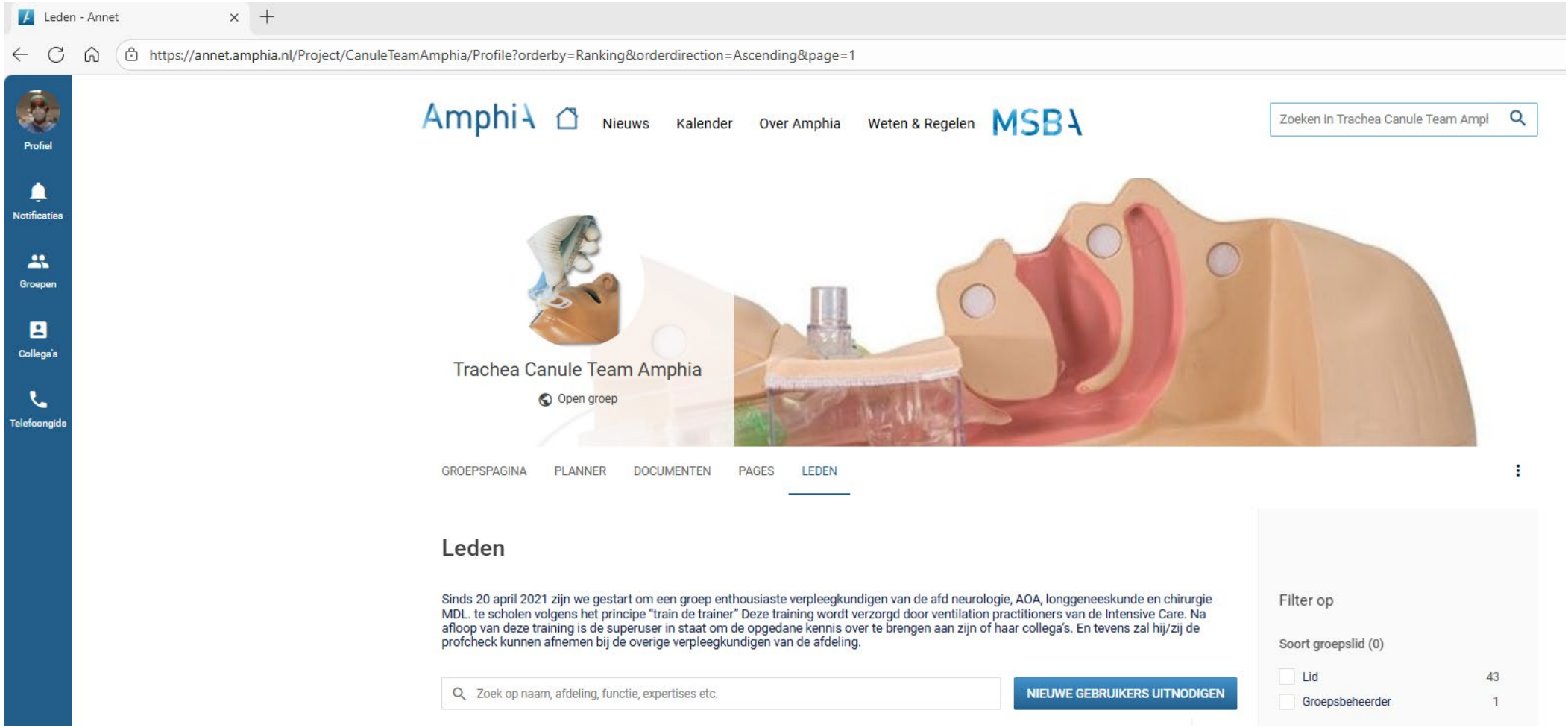
Patiënten die al hebben of nodig hebben:

- Tijdelijke luchtweg
- Eindstandige luchtweg



Eind zorgpad

Indien geen enkele klinische/poliklinisch zorg voor patiënt met tijdelijke luchtweg of eindstandige luchtweg meer nodig is (en deze zorg is overgedragen).



Trachea Canule Team

H.Janssen (ventilation practitioner/ICU vpk & C. Hol (business partner Procesverbetering & Innovatie) Amphia Breda

Doel bijeenkomst

- Neuzen dezelfde kant op
- Gezamenlijk herkennen van de problemen die spelen + verzamelen problemen
- Opstart om te komen tot oplossing
- Eerst met deze groep
- Later ook andere betrokkenen aan laten sluiten

Inventariseren problemen

1. Geen uniforme zorg/onduidelijk proces
2. Onduidelijk wie waar verantwoordelijk voor is
3. (borging) deskundigheid (kennis + vaardigheden) ontbreekt
4. Benodigde materialen: niet de juiste materialen beschikbaar op juiste moment op juiste plaats

Problemen (symptomatisch)

1) Geen uniforme zorg/onduidelijk proces

- Niet altijd de juiste zorg/juiste hulpmiddelen beschikbaar en toegepast
- Niet bij iedereen bekend hoe het proces is/zou moeten zijn (begin/eind/varianten/betrokken afdelingen, specialismen en volgorde activiteiten)
- Zenya protocollen zijn niet up-to-date en EBP (Evidence Based Practice) wordt niet altijd toegepast.
- Gevolgen:
  - Inefficiënt
  - Veiligheidsrisico's
  - Vragen/onbeantwoorde vragen/verstoringen IC-personeel
    - Vragen van superusers en/of uitvoerend verpleegkundigen aan IC (Ventilation Practitioner (VP)-vaktechnisch specifiek/Consultatieve IC-verpleegkundige (CIV)

VP niet altijd bereikbaar; dan wordt CIV gecontacteerd maar die heeft niet hetzelfde kennisniveau als VP.

Problemen (symptomatisch)

2) Onduidelijk wie waar verantwoordelijk voor is:

- Onduidelijkheid over taken en verantwoordelijkheden
- Geen eigenaarschap voor volledige proces

Problemen (symptomatisch)

3) Borging deskundigheid (kennis en vaardigheden) ontbreekt

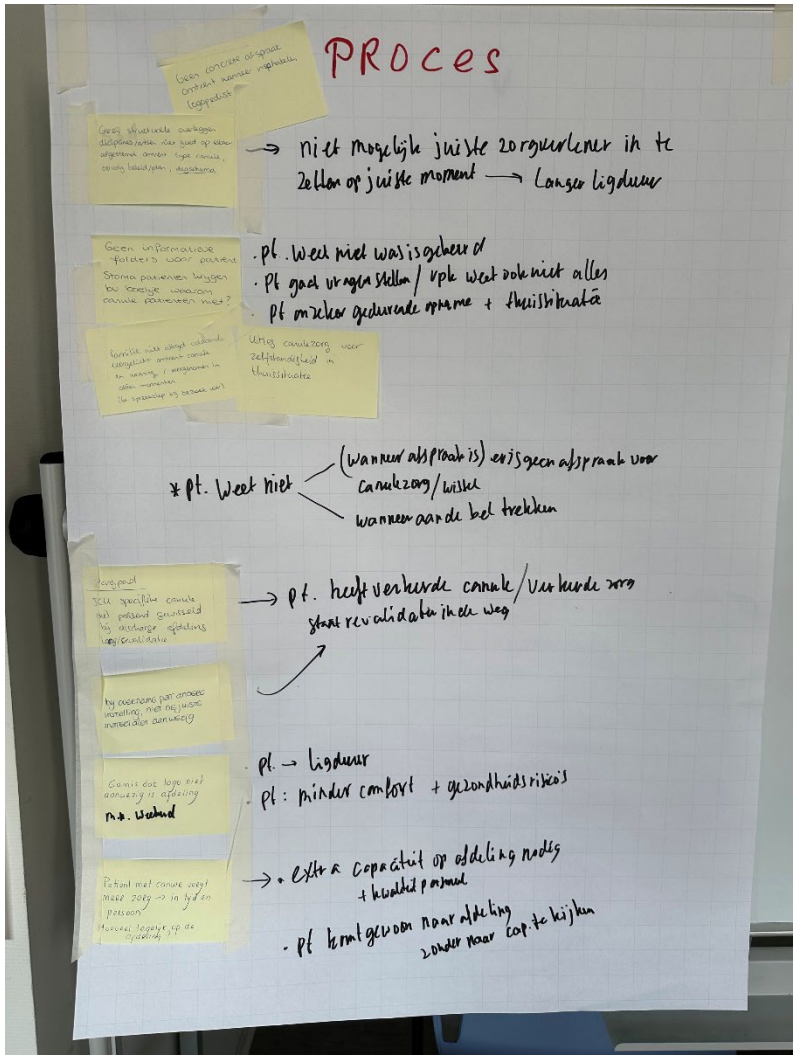
- Incidentrisico
- Veiligheidsrisico voor patiënt
- Medewerker: onzeker/inefficiënt
- Eis van inspectie?
- Voorbehouden handelingen → inefficiëntie/zelfredzaamheid

Problemen (symptomatisch)

4)Benodigde materialen niet aanwezig/verschillend

- IC houdt voorraad en leent uit → financiële problemen/discussie
- Misgrijpen → inefficiëntie/materiaal blijft langer zitten bij patiënt → minder goede zorg
- Vraag en aanbod onbekend
- Logistieke systeem/bevoorrading mogelijk niet goed ingericht

Brainstormen



Proces (1/2)

- Geen structurele overleggen tussen disciplines/artsen: geen goede afstemming omtrent type canule vervolgbeleid/plan, dagschema
- Geen concrete afspraak omtrent wanneer inschakelen logopedist

- Niet mogelijk juiste zorgverlener in te zetten op juiste moment
- Langere ligduur

- Geen informatiefolders voor patiënt (stomapatiënten krijgen dit wel)
- Familie is niet altijd voldoende op de hoogte/voorgelicht omtrent canule en weaning/meegenomen in oefenmomenten (bv spreekklep bij bezoekuur)
- Uitleg canulezorg voor zelfstandigheid in thuissituatie

Zowel verpleegkundige als patiënt/familie onvoldoende op hoogte

- Pt weet niet wat is gebeurd
- Pt gaat vragen stellen aan vpk
- Vpk weet ook niet alles
- Pt onzeker gedurende opname
- Pt onzeker in thuissituatie
- Pt weet niet
  - Wanneer afspraak is voor canulezorg/wissel
  - Er is soms ook geen afspraak
  - Wanneer aan de bel te trekken

Proces (2/2)

- ICU-specifieke canule niet passend gewisseld bij ontslagafdeling long/revalidatie.
- Bij overname patiënt vanuit andere instelling: niet juiste materialen aanwezig.

- Logopedie is niet aanwezig op afdeling (m.n. in weekend)

- Pt heeft verkeerde canule
- Pt krijgt verkeerde zorg
  → staat revalidatie van patiënt in de weg
  → Comfort patiënt ↓
  → Gezondheidsrisico's
  → Langere ligduur

- Patiënt met canule vergt meer zorg → meer tijd/meer personen
- Er is niet vastgelegd hoeveel canulepatiënten op een afdeling kunnen komen (gezien de gevraagde extra benodigde capaciteit).

- Extra capaciteit op afdeling nodig
- Juist gekwalificeerd personeel nodig
- Er is niet bepaald hoeveel canulepatiënten er op een afdeling kunnen worden opgenomen.
- Patiënt wordt gewoon op afdeling geplaatst zonder te kijken of de capaciteit (en kwaliteit) toereikend is.

Taken & verantwoordelijkheden

- Wie is verantwoordelijk voor wat?
  - Is Ventilation Practitioner verantwoordelijk…. Voor wat dan?

- Verantwoordelijkheid KNO
  - Geen duidelijk format in bijvoorbeeld avatar of notitie van KNO over canule, maat, gecuffed, etc.
  - Dus niet in 1 oogopslag duidelijkheid over hoe en wat de verpleegkundige problematiek is voor de patiënt.

- Geen eenduidig beleid
- Niet duidelijk wie waarvoor verantwoordelijk is
- Niet duidelijk waar men NIET bevoegd toe is

Deskundigheid (kennis/vaardigheden)

- Te weinig ervaring met bepaalde typen canules
- Pt krijgt verkeerde zorg
  → staat revalidatie van patiënt in de weg; langere ligduur
  → Comfort patiënt ↓
  → Gezondheidsrisico's
- Patiënten worden voor ander probleem opgenomen maar hebben een canule.
- Kennis op verpleegafdelingen (incl IC)

- Er zijn meer therapiemogelijkheden dan nu wordt gedaan

- Onduidelijkheid wat wel/niet kan (pt/vpk)

- Verkeerde canule geplaatst of nu niet meer goed.

- Geen goede scholing
  - Inhoudelijk + materiaal
  - Inwerken nieuwe collega's
  - Periodieke lessen
  - Welke scholing voor wie?

Benodigde materialen

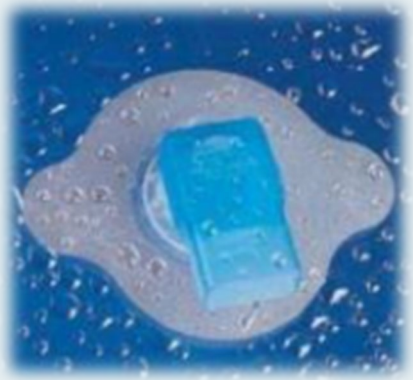
- 53A: Materialen op 1 centraal punt
  - Materiaal niet aanwezig
  - Onduidelijk waar materialen liggen
  - Zoeken op andere afdelingen
  - → financiële gevolgen

- Bevoorrading Producten
  - Vaak producten vanaf verpleegafdeling op halen bij IC

- Onduidelijk waar je spullen kan halen
  - Bv douchecanule

- Vraag: onvoldoende/niet bekend
- Aanbod: niet (altijd) beschikbaar (juiste materialen op de juiste plek)

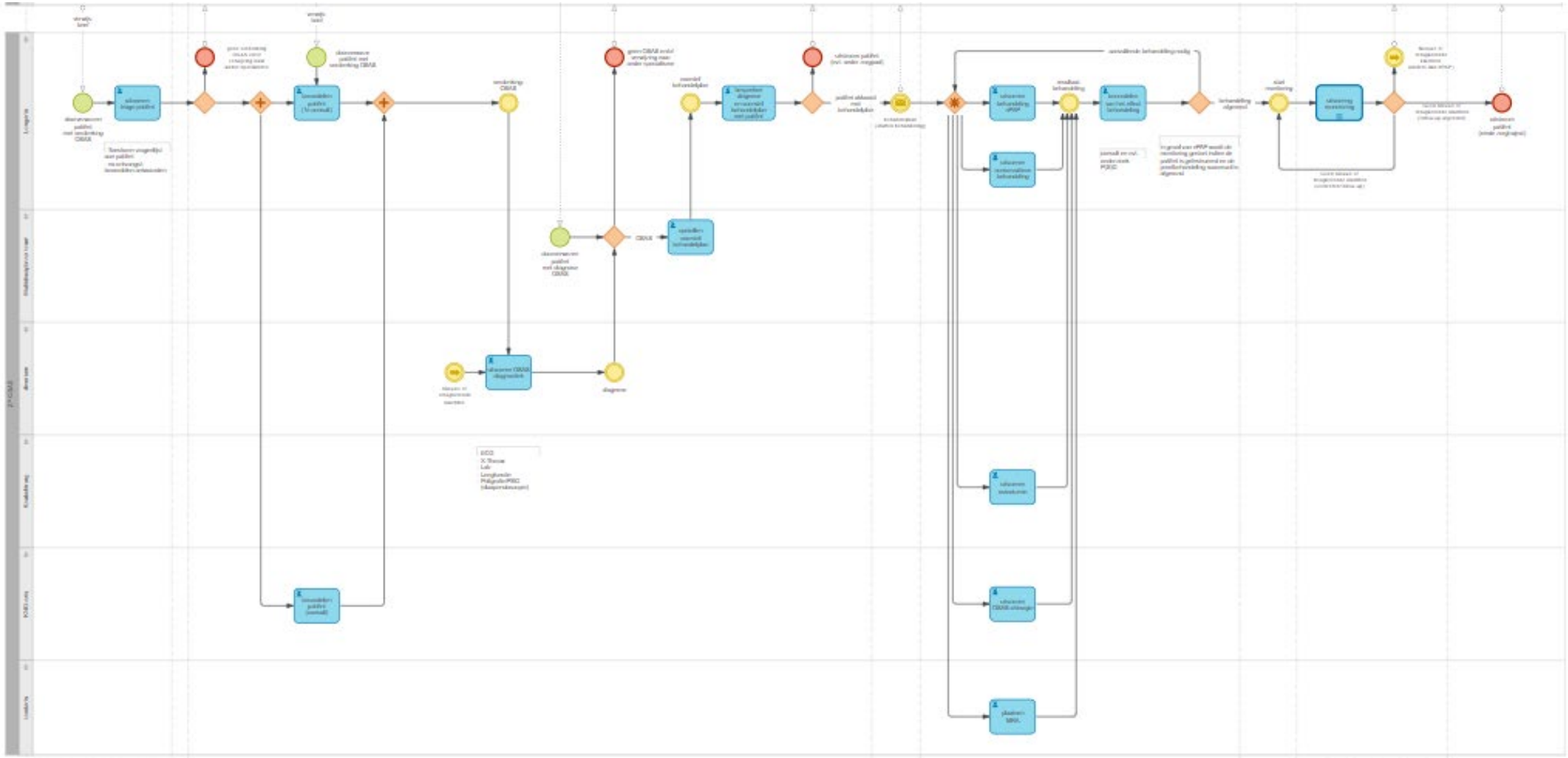
- Onduidelijk welke producten waar beschikbaar zijn
- Financiële afwikkeling (wie betaalt wat) niet goed geregeld



Vervolg: hoe verder en met wie?

- Management betrokken afdelingen
- Specialisten: intensivisten, KNO artsen, logopedie
- Superuser groep verpleegkundigen
- Ventilation practitioners
- Amphia academie
- Kenniskern Proces verbetering & Innovatie
- Afdeling inkoop
- Industrie

Zorgpad



Zorgpad

Vragen?

Scan de QR-code voor het doorsturen van uw vragen

- Uw naam (optioneel)
- Naam van de spreker
- Uw vraag

U kunt het formulier meermaals gebruiken/invullen

07

Afsluiting

Atos
Coloplast Group

Uw feedback is belangrijk voor ons!

We stellen het formulier ook digitaal beschikbaar.
Scan de QR-code.

Evaluatie-formulier

20 maart 2026

Wat vond u van deze dag?
Laat het ons weten!

Vul in en ontvang een goodiebag!

Atos
Coloplast Group

Tracheotomie Symposium

Het tracheacanule zorgpad - van plaatsing tot decanulatie

20 maart 2026

Het Tracheacanule zorgpad – *van plaatsing tot decanulatie*

Closure

Atos
Coloplast Group

Bedankt!

Veilige rit huiswaarts

Atos
Coloplast Group

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Scan de QR-code.

Evaluatie-formulier

20 maart 2026

Wat vond u van deze dag?
Laat het ons weten!

Vul in en ontvang een goodiebag!

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Netwerkborrel

16:45 – 17:30

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