Swallowing Rehab in Head & Neck Chemo-Radiotherapy...

"Is the clock ticking?"

Head and Neck EBP Group
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Head and Neck EBP Group

- Established: 2014
- Two leaders: different hospital sites
- Academic Link: Sydney Uni
- No of members: 17 in total
  - 10 members over 6 Sydney sites
  - 7 members from 7 Metropolitan/Regional NSW hospitals.
- No of meetings: 8 & all via teleconference - Break over winter

It’s all about TIMING for us!

- In 2014, H&N group critiqued evidence around **TIMING** of feeding tube placement

  (i.e. prophylactic vs. reactive).

Clinical bottom line =

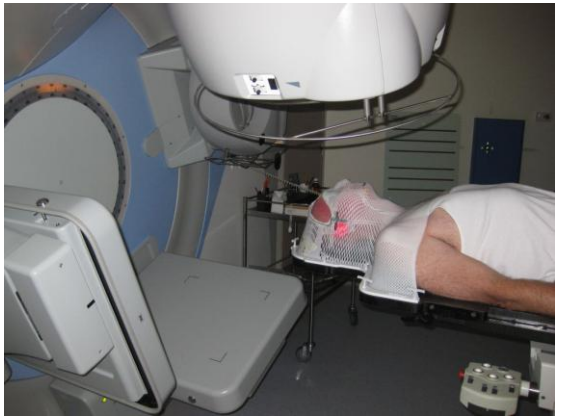
No conclusive evidence of improved functional oral intake with use of prophylactic feeding tube placement compared with reactive placement.

BUT there was no negative impact of having a feeding tube on functional oral intake WHEN oral intake or swallow exercises are maintained during treatment.

Lets take a moment to think about…

TIMING (from our patient's perspective)

- Often decisions regarding treatment are made very quickly from time of diagnosis.
- Treatment with combined Chemotherapy and Radiotherapy usually lasts approximated 6-7 weeks.
- Each Chemotherapy session may run for up to 6 hours per day and Radiation may take 20 minutes per session.



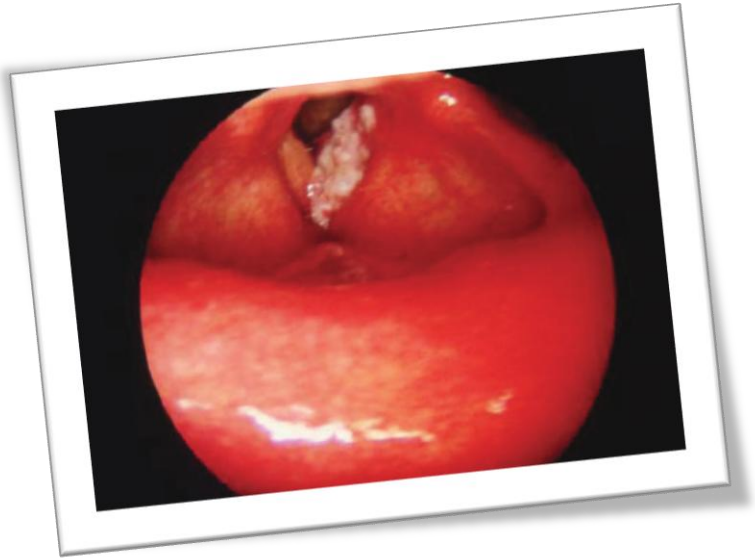
- Onset of treatment toxicities (side effects) can come on quickly or a few weeks into treatment
  - RT – Local side effects
  - CT – systemic side effects

- Treatment side effects can last for many weeks (acute e.g. mucositis, odynophagia, taste changes) to many years post treatment (chronic e.g. xerostomia, trismus).

- Dysphagia and communication impairments may be present before treatment begins, develop during treatment & persist post treatment

So when a patient having RT+/- CT, presents to speech path for baseline Ax and counselling/education session…..

- Should we be commencing exercises? Are these beneficial for swallowing and nutritional outcomes?
- If so, when should we start these? Pre treatment? Later on in treatment? Pre dysphagia symptoms?



Firstly, what do we mean by Prophylactic? (as this got confusing)

Definition = a treatment designed and used to prevent a disease from occurring.

Prior to treatment vs. Prior to onset of dysphagia

(NB: As some patients have baseline dysphagia due to lesion)

Clinical Question (PICO) =

In H&N patients having Radiotherapy +/- Chemotherapy, do prophylactic exercises vs. reactive or no exercises, result in:

1) better swallow outcomes?

2) improved nutrition outcomes/reduced feeding tube use?

3) Improve jaw outcomes?

Critiquing the evidence…

Number of CATs attempted in 2015 = 3

Outcomes:-

- Swallow *(Complete)*
- Nutrition/Feeding tube use *(Complete)*
- Jaw *(Incomplete – plan for 2016)*

Number of CATs completed in 2015 = 2

CAT 1 = Swallowing outcomes

CLINICAL BOTTOM LINE:

- Evidence was SUGGESTIVE that commencing swallow exercises prior radiation +/- chemotherapy can have a positive effect on swallow outcomes in the short term (up to 6 months post treatment) when compared with no exercises or “reactive” exercises.

- No negative effects from prophylactic swallowing intervention were reported.

This is in the context of:

- There was limited evidence to suggest that these improvements were maintained in the long term.
- It is hard to draw conclusion as to whether the timing of exercises vs. the exercises themselves were ‘key’, given there were limited studies which compared this.
- It is also uncertain as to whether SP counselling, ongoing oral intake or swallow exercises individually or cumulatively are ‘key’ to the positive outcomes.
- There is a lack of consensus on the type, frequency and intensity of exercises that should be prescribed.
- Compliance with exercise throughout the duration of treatment was an issue identified in a number of studies.
- Limitations and methodological flaws across the studies made it difficult compare and draw accurate conclusions. Particularly longer follow up is needed given the potential for very late dysphagia with this patient population.

The breakdown for 'swallowing outcome' CAT…

No of articles: 9 CAPs included in CAT (Included 2 systematic reviews)

Study	Definition of prophylactic	Timing of commencing exercise protocol (intervention group)	Comparison group	Does this study measure the impact of timing of exercises	What does this study measure in relation to swallowing outcomes?
Kotz 2012	Prior to treatment	Prior to	Reactive	Yes	Timing
Hutcheson 2013	Prior to treatment	Prior to	No exercise	No	Rehab or no rehab
Tang 2011	Not specified	During "hospitalisation"	No exercise	No	Rehab or no rehab
Peng 2015	2 weeks prior to treatment or first 2 weeks of treatment	2 weeks prior or during first 2 weeks	No exercises	No	Rehab or no rehab
Mortensen 2015	Assume 1 week prior	1 week prior/exercises	Reactive/standard care	No – different regimes	Type of swallow intervention
Duarte 2013	Not specified	Timing not specified Compliant	 Non-compliant	No – all given 2 weeks before treatment	Compliance
Van der Berg 2014	Assume from first week, however not specified and "*from* first week" is broad	*From* first week of treatment	Diet counselling (reactive)	No	Type of swallow intervention
Ohba in press	Assume "during" treatment. Not specified if prior to dysphagia onset.	During	Reactive	No – two different exercise regimes	Type of swallow intervention

Swallow outcome measures used in studies…

- Mix of validated and subjective scales
- Some QOL related measures
- Some instrumental tools e.g. MBS

Often consistent with outcome measured used currently in our practice.

Table 1. Functional Outcome Swallowing Scale (FOSS).[a]

Stage	Description
0	Normal function; asymptomatic
1	Normal function; episodic or daily symptoms of dysphagia
2	Compensated abnormal function manifested by significant dietary modifications or prolonged mealtime, without weight loss or aspiration
3	Decompensated abnormal function, with weight loss of 10% or less of body weight over 6 months due to dysphagia, or daily cough, gagging, or aspiration during meals
4	Severely decompensated abnormal function with weight loss of more than 10% of body weight over 6 months due to dysphagia, or severe aspiration with bronchopulmonary complications; nonoral feeding recommended for most of nutrition
5	Nonoral feeding for all nutrition

[a]Adapted from Salassa, 1999. (© 2000 Karger Publishers, Basel, Switzerland.)

Table 2 Swallowing performance status scale [27]

Score	Description
1	Normal
2	Within functional limits—abnormal oral or pharyngeal stage but able to eat regular diet without modifications or swallowing precautions
3	Mild impairment—mild dysfunction in oral or pharyngeal stage, requires modified diet or therapeutic swallowing precautions to minimize aspiration risk
4	Mild-moderate impairment—mild–moderate dysfunction in oral or pharyngeal stage, requires modified diet, and therapeutic precautions to minimize aspiration risk
5	Moderate impairment—moderate dysfunction in oral or pharyngeal stage, aspiration noted on examination, and requires modified diet and swallowing precautions to minimize risk of aspiration
6	Moderate–severe impairment—moderate–severe dysfunction in oral or pharyngeal stage, aspiration noted on examination, requires modified diet and swallowing precautions to minimize risk of aspiration, and needs supplemental enteral feeding support
7	Severe impairment—severe dysfunction with significant aspiration or inadequate oropharyngeal transit to esophagus; nothing by mouth, requires primary enteral feeding support

Level	Type of Intake
1	Nothing by mouth
2	Tube dependent with minimal attempts of food or liquid
3	Tube dependent with consistent oral intake of food or liquid
4	Total oral diet of a single consistency
5	Total oral diet with mulliple consistencies but requiring special preparation or compensations
6	Total oral diet with multiple consistencies without special preparation, but with specific food limitations
7	Total oral diet with no restrictions

Figure 3. Functional Oral Intake Scale.

Eating in Public

100	No restriction of place, food, or companion (eats out at any opportunity)
75	No restriction of place, but restricts diet when in public (eats anywhere, but may limit intake to less "messy" foods, eg, liquids)
50	Eats only in presence of selected persons in selected places
25	Eats only at home in presence of selected persons
0	Always eats alone

Understandability of Speech

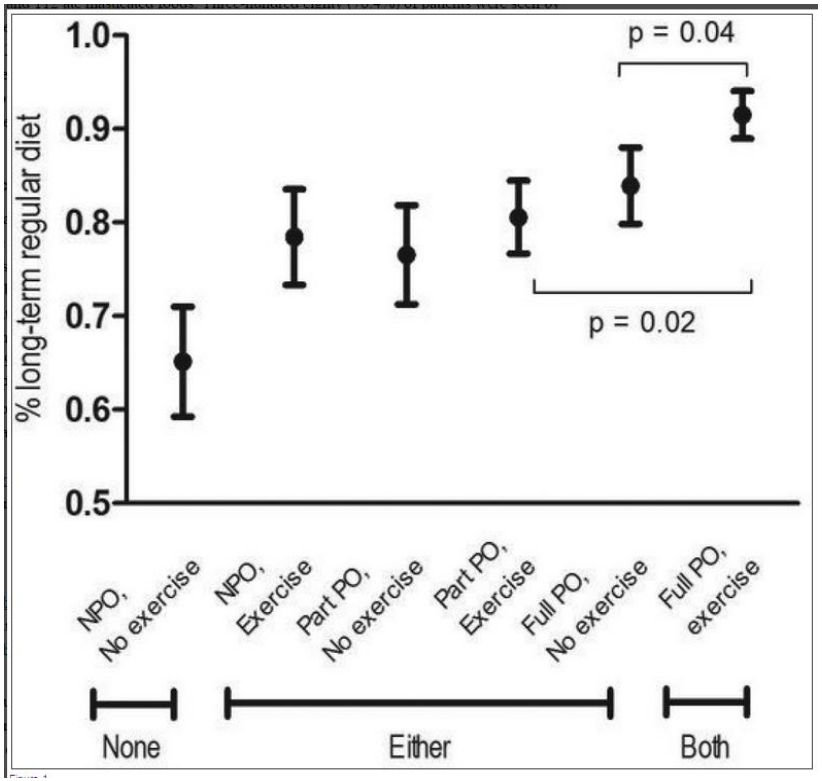
100	Always understandable
75	Understandable most of the time; occasional repetition necessary
50	Usually understandable; face-to-face contact necessary
25	Difficult to understand
0	Never understandable; may use written communication

Normalcy of Diet

100	Full diet (no restrictions)
90	Peanuts
80	All meat
70	Carrots, celery
60	Dry bread and crackers
50	Soft, chewable foods (eg, macaroni, canned/soft fruits, cooked vegetables, fish, hamburger, small pieces of meat)
40	Soft foods requiring no chewing (eg, mashed potatoes, apple sauce, pudding)
30	Pureed foods (in blender)
20	Warm liquids
10	Cold liquids
0	Nonoral feeding (tube fed)

Figure 2. Performance Status Scale for Head and Neck Cancer Patients.

So… it appears that oral intake and/or exercises are vital to achieving good outcomes for these patients…



Hutchenson et al 2013

CAT 2 – Nutritional Outcomes/Feeding Tube Use

No of articles: 7

Clinical Bottom line:

- Five of these seven articles suggest a positive impact in reducing feeding tube dependence/improved nutritional outcomes if a prophylactic swallowing exercise program was adhered to during RT/CRT.

- Some studies also included maintenance of full or partial oral intake as part of the exercise programme/treatment protocol. Whether swallow exercises and maintaining oral intake are independently associated with decreased feeding tube dependence and improved nutritional status, remains unclear.

- Our question of the impact specifically of prophylactic vs reactive exercises was unable to be confidently determined from these studies.

- For all studies reviewed there were a number of relevant variables that were not considered in the final analysis such as tumour and patient characteristics, adherence and frequency of exercises. Limitations in the study design has resulted in lower overall levels of evidence.
- Maintaining swallowing exercises and oral intake during CT/CRT for H&N cancer may result in reduced feeding tube dependence and improved nutritional outcomes.
- No negative impact of prophylactic swallowing exercises during CR/RT were reported.

The Breakdown for the 'nutrition/tube feeding' CAT

No of articles: 7 CAPs included in CAT

Study	Definition of prophylactic	Timing of commencing exercise protocol (intervention group)	Comparison group	Does this study measure the impact of timing of exercises	What does this study measure in relation to nutritional outcomes?
Bhayani 2013 (hypo)	'Preventative exercise regimens'	Not specified	Non-compliant	No – outcomes of compliance groups comparedonly	Measured impact of compliance with exercises vs. no compliance
Virani 2015	Exercise before treatment mentioned in intro	Weekly sessions during treatment (no mention pre-Tx)	Repetitive swallows saliva/liquid	No	Implementing exercise vs. maintaining oral intake during RT
Ahlberg 2011	Prior to treatment	'self-care' regime; 1 session prior to treatment	No exercise offered	No – all or no exercise investigated	Measured impact of self-care rehab program (minimal clinical support) vs no rehab
Bhayani 2012 (oro)	Preventative exercises	All pt's receive before starting treatment at institution (although this was reported in Discussion; timing not specifically mentioned in Methods)	Non-compliant	No – outcomes of compliance groups compared only	Measured impact of compliance with exercises vs. no compliance
Mortensen 2015	Assume 1 week prior	1 week prior/exercises	Reactive/standard care	No – different regimes	Type of swallow intervention
Hutcheson 2013	Prior to treatment	Prior to	No exercise	No	Rehab or no rehab
Duarte 2013	Not specified	Timing not specified Compliant	Non-compliant	No – all given 2 weeks before treatment	Compliance

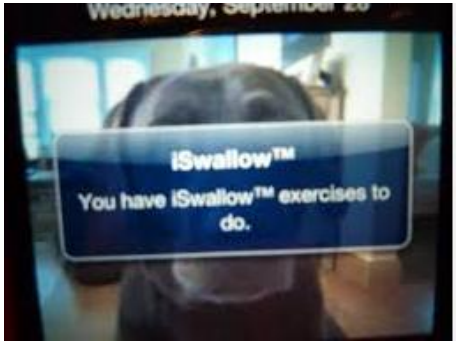
Key take home points

- There is **NO NEGATIVE** impact of these H&N patients having RT/CRT doing prophylactic exercises, on both:-
  - swallow function and
  - nutrition/tube feeding outcomes

- The evidence suggests patients can have better swallowing/nutritional outcomes when exercises are given prophylactically vs no exercises/reactive exercises.

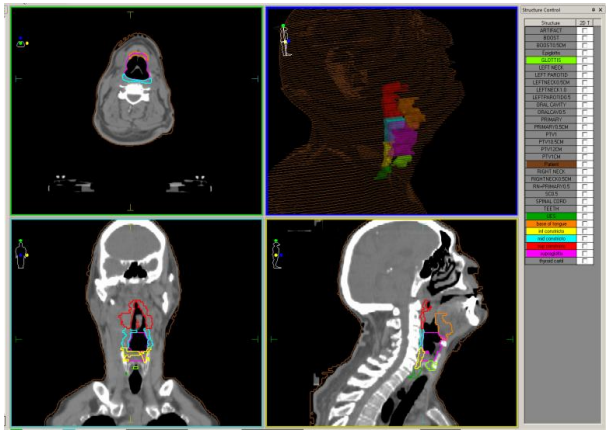
Application to practice

- Reinforces importance of SP's role
- Service delivery –
  - Pre-treatment clinics
  - Rural Patients
  - Group therapy 'exercise' sessions
  - Patient's record of exercises
    (eg: iphone, written material)
  - Working in MDT



Not conclusive re to:

- Which exercises?
- Is it exercise alone or only when accompanied with maintaining oral intake?
- For which patients does it benefit?
- How do we improve compliance?
- How long does the patient need to continue these exercises?



Future directions for the H&N EBP group…

- Complete the CAT re to prophylactic vs reactive/no exercises, and jaw outcomes.
- ??? Which swallow exercises work best for which patients and what other factors influence their outcomes (e.g. exercise regime, social factors)
- ??? How can we improve compliance with exercise regimes.
- ??? PICI/collecting group data re to prophylacytic exercises – ie: We will need some help from our academic and the PICI advisory group re to this!

A couple more points on TIMING…..

…the right **TIME** for our group to tackle these questions is 2016!!!

It's now **TIME** to take a break and enjoy the silly season!

Thanks to our wonderful group members!

- Molly Barnhart
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- Katrina Blyth
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Thank you