

## Critical Review:

*\*This paper was created as a required assignment for the CSD9639 Evidence Based Practice for Clinicians course at Western. While it has been evaluated by course instructors for elements of accuracy and style, it has not undergone formal peer-review.*

### Search Strategy

A literature search was conducted through the PubMed computerized database using the search terms: ((oral cancer) AND (radiation) AND (swallowing) AND (exercise\*)).

A literature search of the Scopus online database was conducted using the terms:

treatment in non-neurologically-based dysphagia patients, which may have some clinical applicability to HNC patients. The authors calculated effect sizes (Cohen's D, repeated effect size dz) from the presented data with the use of statistical software, which then were used to compare the efficacy of each intervention.

The review was well-organized, grouping studies into ones that used swallowing exercises (direct therapy) and interventions that targeted underlying disease (non-swallowing, indirect therapy). Articles reviewed were then grouped further by research design. While only a portion of the articles reviewed used HNC participants, the critical review reported small effect sizes between groups in these select studies. As a whole, the four studies using HNC patients provide suggestive evidence to support the use of non-swallowing exercises. However, the authors acknowledge that little research exists regarding optimal session duration, number of sessions, and time period of therapy necessary. Additionally, they noted that the strongest effect sizes for swallowing exercise regimens are within the post-stroke population using cortical stimulation and direct therapy concluded that dysphagia therapy as a whole has small-to-moderate effects. The dearth of articles regarding dysphagia therapy in the HNC population is believed to reflect the lack of research into different therapy approaches for this population, and suggests more research into this population is necessary.

A randomized control trial by Lazarus et al examined the functional swallowing outcomes for stage 2-4 oral and oropharyngeal cancer patients treated with (C)RT (n=23) (2014). The control group performed a mix of both swallow and non-swallow exercises

performed mostly non-swallow exercises. Outcome measures selected consisted of a Chinese translation of the MDADI (Chen et al, 2001) and a variety of videofluoroscopic measurements. Appropriate statistical analyses were used (paired *t*-tests). Results of the study showed significant differences in hyoid elevation and Penetration-Aspiration Scale scores between the groups, with the experimental (swallow exercises) group showing greater improvements (Rosenbek et al, 1996). Although both groups showed some decline in swallowing ability, this study suggests that functional swallowing exercises combined with non-swallowing electrical stimulation (VitalStim) may help reduce aspiration and increase hyoid movement and speed.

Strengths of this level 2b design study included the objective measurement of many indicators of swallowing ability.



results of this study provide compelling evidence for the use of non-swallowing exercises.

### ***Discussion***

Research into optimal exercise programs for

### ***Clinical Implications***

There is growing evidence to support the use of exercise regimens for HNC patients. As the use of exercises becomes a routine part of care for patients receiving (C)RT, it is critical to select tasks that will have the maximum benefit. Further research into multiple exercises is warranted in order to streamline the design of exercise programs. Additional research will clarify best practice in incorporating oral-motor exercises into dysphagia rehabilitation.

Early suggestive evidence for the use of non-swallowing oral

### References

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