

**Title of measure:****The University of Michigan Xerostomia-Related Quality of Life Scale (XeQOLS)**

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**DISCLAIMER:**

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**Brief overview:**

The subjective impact of salivary gland dysfunction and xerostomia is assessed using the Xerostomia-Related Quality of Life Scale developed at the University of Michigan. It measures the impact of salivary gland dysfunction and xerostomia on the four major domains of oral health-related quality of life. This scale consists of 15 items covering four major domains of oral health-related quality of life: physical functioning, personal/psychological functioning, social functioning, and pain/discomfort issues.

**Validated (yes/no):**

Yes, see below.

**Psychometric properties and references:**

The reliabilities of the four domains and the total XeQOLS score were determined with a sample of 283 head and neck cancer patients being treated for parotid-sparing and standard bilateral-neck radiation therapy. All Cronbach coefficients were statistically significant for the four domains: physical ( $r=0.85$ ), personal/psychological ( $r=0.87$ ), social ( $r=0.86$ ), and pain/discomfort ( $r=0.89$ ). Internal validity was determined in conjunction with responses to a previously validated four-item subjective xerostomia tool, and coefficients for the four domains and the total score were significant at  $p<0.05$ . External validity was determined by correlating the four domains with objectively determined unstimulated and stimulated parotid flow rates from treated and spared parotid glands for the same population (4).

**Normative data:**

These data have been published previously (4, 5).

**Clinically significant changes:**

Subjective XeQOLS has been developed and validated (3). Xerostomia questionnaire scores suggested that xerostomia was significantly reduced in patients irradiated with bilateral neck, parotid-sparing RT, compared to patients with similar tumors treated with standard RT.

It was found to be reliable and valid in measuring patient-reported xerostomia (1). Each patient completed an 8-item self-reported xerostomia-specific questionnaire (XQ).

**Website or how to register to use:**

No website. Per the author of this instrument, it is in the public domain and permission for its use is not necessary (6). Samples of the questionnaire can be found in a previously-published article (4).

**List any fees for usage:**

None

**Languages available:**

English

**Instructions for CRAs and/or credentialing of administration:**

Patients answered the XQ questionnaires at baseline (pre radiotherapy), and at 3, 6 and 12 months after completion of therapy. They answered the questionnaire while waiting at the Dental or Radiation Oncology clinics for their scheduled follow up visits. Mailed questionnaires were not used (5).

**Time required to administer instrument:**

No specific reference found.

**Quality assurance for administration (if needed):**

None.

**Scoring of instrument:**

All subjects completed a 15-item xerostomia-related quality of life scale (XeQoLS) prior to RT, at the completion of RT, 1, 3, 6 and 12 months post-RT. Patients answered the questions by checking the box that describes best the true each statement has been for the patient during the past 7 days (not a all, a little, somewhat, quite a bit, very much), 1-5 scale. Higher scores represent greater degree of symptoms. Physical functioning is based upon responses to items Nos.1, 6, 10, 12. Pain/discomfort issues are based upon responses to items Nos. 2, 3, 7, 9. Personal/psychological functioning is based upon responses to items Nos. 8, 13, 14, 15. Social functioning is based upon responses to items Nos. 4, 5, 11.

**References:**

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2. Eisbruch, A., Ship, J.A., Terrell, J.E., Martel, M.K., Kim, M. (1999). Assessment of the quality of life of patients with head and neck cancer irradiated with parotid sparing or standard techniques. Grant protocol # UMCC 9759.
3. Eisbruch, A., Ship, J.A., Dawson, L.A., Kim, H.M. et al. (2003) Salivary gland sparing and improved target irradiation by conformal and intensity modulated irradiation of head and neck cancer. *World J Surg*, 27 (7): 832-7.
4. Hensen, B.S., Inglehart, M.R., Eisbruch, A., Ship, J.A. (2001). Preserved salivary output and xerostomia-related quality of life in head and neck cancer patients receiving parotid-sparing radiotherapy. *Oral Oncology*, 37(1): 84-93.

5. Lin, A., Kim, H.M., Terrell, J.E., Dawson, L.A., Ship, J.A., Eisbruch, A., (2003) Quality of life after parotid-sparing IMRT for head and neck cancer: A prospective longitudinal study. *Int J Radiat Oncol Biol Phys*, 57(1):61-70.
6. Email correspondence from Dr. Ernest A. Weymuller (author of the instrument) to Gwen Wyatt (RTOG Headquarters) on July 10, 2006.