

# Evaluation of the safety and efficacy of high intensity focused ultrasound (HIFU) for skin rejuvenation of face and neck: A systematic review

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**Background:** High Intensity Focused Ultra-sound (HIFU) is a non-invasive treatment with thermal energy induced by focused ultrasound from transducer to deep dermis, as well as the superficial musculoaponeurotic system (SMAS). The US Food and Drug Administration approved HIFU treatment initially for eyebrow lifting in 2009, followed several years later with an approval for skin lifting of the neck and submentum.

**Objective:** The objective of this study is to systematically review safety and efficacy of high intensity focused ultrasound (HIFU) for skin rejuvenation of face and neck.

**Methods:** We searched data banks including Ovid Medline, Web of Science, and Scopus till end of December 2017 using keywords related to HIFU and rejuvenation without any limitations in language for prospective interventional studies evaluating HIFU (alone and not in combination with any other procedures) for rejuvenation of face and neck.

**Results:** Two independent reviewers screened the titles and abstracts of the studies, and selected 52 publications among 1084 titles for full text screening. Seventeen of these studies fulfilled all eligibly criteria and were selected for data extraction and analysis.

**Conclusion:** Although the results of these studies are promising, the majority of them have limitations in design or report such as small size, lack of suitable control group and randomization, did not provide long term follow up, etc. So larger randomized, controlled studies with long follow up are required to assess the safety and efficacy of HIFU in rejuvenation of face and neck.