## Documents

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**Laryngeal Reinnervation: The History and Where We Stand Now**
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**Abstract**
Injury to the recurrent laryngeal nerve (RLN) can result in impairment of all three laryngeal functions. The RLN is capable of regeneration, but laryngeal functions in cases of severe injury remain impaired. This permanent impairment is caused by either incomplete regeneration and/or occurrence of laryngeal synkinesis. Laryngeal reinnervation can be approached either nonselectively, focusing on nerve reconstruction, or selectively, focusing on separate target muscle reinnervation. Nonselective reinnervation comprises anastomosis to the mainstem of the RLN leading to reinnervation of both abductor and adductor muscle groups (nerve-based reconstruction). In selective reinnervation, abductor and/or adductor muscles are separately reinnervated (function-based reconstruction). A review of laryngeal reinnervation techniques, results in animal models, and the results achieved in patients are given. The clinical implications of reinnervation in unilateral as opposed to bilateral vocal fold paralysis are considered. For unilateral vocal fold paralysis and nonselective reinnervation, good voice results can be achieved. It has the advantage that no foreign materials need to be implanted and may also be used in a growing larynx in the case of children or adolescents. For bilateral vocal fold paralysis, good functional results, recovery of airway as well as voice, can be achieved with selective (or function-based) reinnervation. © 2020

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