

## عنوان مقاله:

Tissue engineering and regenerative medicine in lung from basic to clinical

## محل انتشار:

اولین کنگره بین المللی مهندسی بافت و پزشکی بازساختی ایران (سال: ۱۳۹۷)

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## خلاصه مقاله:

**Introduction** Respiratory system is one of the most important and complex systems because not only it has a very special function, but also it is frequently exposed to some risk factors such as dust particles, granules of carbon, toxic gases that adversely affect its normal function. Therefore, it is important to find an appropriate strategy for lung regeneration and treatment of lung injuries. **Objectives** Here, we aim to review new advances, especially stem cell based therapy, in lung regeneration and function. **Methods** Different types of stem cells such as human embryonic stem cells, Mesenchymal stem cells, endothelial progenitor cells, and induced-pluripotent stem cells have been used for lung regeneration. **Results** The ability of stem cells to be migrated in lungs and converted to epithelial cells is a controversial issue which has been studied in recent years. It is assumed that stem cells injection can be replaced instead of damaged progenitor cells, which in turn associated with production of functional epithelial cells. Functional epithelial cells are able to prevent airway remodeling and provide a static condition to reproduce functional epithelial cells. **Conclusion** Unlike chemical drugs, the differentiation and high-level safety properties of stem cells can be considered as a new strategy for treatment of pulmonary complications

## کلمات کلیدی:

Lung regeneration, Stem cells, Lung diseases, Airway remodeling, Inflammation

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