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**PULP AND PERIODONTAL STEM CELLS**

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Stem cells are undifferentiated cells with high proliferative potential, capable of turning into mature cells that perform certain functions. These cells are of great importance in regenerative medicine and are used in such branches of medicine as cardiology, neurology, orthopedics, hematology, dermatology, gastroenterology, endocrinology, ophthalmology, surgery, dentistry. The isolation and application of cells is a key stage of cellular medicine. In the field of dentistry, low-differentiated pulp and periodontal stem cells are important.

The following types of mesenchymal stem cells are distinguished: those obtained from the tooth pulp, from fallen teeth, dental follicle, from the apical papilla, periodontal ligament, gums. Pluripotent cells obtained from the pulp can turn into odontoblasts, osteoblasts, chondrocytes, adipocytes, myocytes, melanocytes, neuro-glial cells, epithelial cells, hepatocytes, endotheliocytes and pancreatic cells. Stem cells from human deciduous teeth are multipotent and can differentiate into osteocytes, adipocytes, odontoblasts and chondrocytes. Cells derived from the apical papilla are multipotent, they differentiate into osteoblasts, odontoblasts, adipocytes and nerve cells. The stem cells of the dental follicle are pluripotent and turn mainly into osteoblasts, odontoblasts. Mesenchymal stem cells isolated from the periodontal ligament are multipotent and differentiate into adipocytes, chondroblasts, and osteoblasts. Gum stem cells can differentiate into adipocytes, chondrocytes, osteoblasts, endotheliocytes, and neuro-glial cells. Cells are usually isolated in the laboratory using collagenase of various types, a suspension medium is added to some cells and centrifuged for 5 minutes.

The methods of cell isolation are similar, but there are fundamental differences in the use of enzymes and media. Also, the cells have different receptors and morphological differences, which makes it possible to distinguish them from each other and use each for medical purposes in accordance with its characteristics. Knowledge about the structure, development and application of pulp and periodontal stem cells is fundamental in promising cell therapy and develops histological mind.