# THE USE OF L-PRF IN ENDODONTIC MICROSURGERY

Santos-Ribeiro.L* [1], Melo-Ferraz.A [2,3,6], Gonçalves.A[1], Calheiros-Lobo.M[2,5,6], Miller.P [2,4,6]

1 - Student of the 5th year of the Integrated Master's Degree in Dentistry at IUCS-CESPU;
2 - Dentist;
3 - Guest Assistant at the Conservative Dental Medicine Service at IUCS-CESPU;
4 - Assistant Professor at the Service of Conservative Dental Medicine at IUCS-CESPU;
5 - Clinical Monitor of the Conservative Dental Medicine Service at IUCS-CESPU;
6 - Graduate Professor in Endodontics at IUCS-CESPU.

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## INTRODUCTION

The approach of large **periapical lesions** is a challenging surgical procedure due to the significant amount of resorbed bone. **L-PRF**, a concept of **naturally** guided tissue regeneration, contains a **dense network of fibrin** (1) which releases several **bioactive molecules** (2,3,4). L-PRF improves the initial **healing** stages (5), reducing the **inflammatory** process (6) and the **risk of infection** (4,6,7). Although L-PRF has been widely used among various dental fields (8), the **regenerative potential of L-PRF** in the **apical region** still seems to be unclear.

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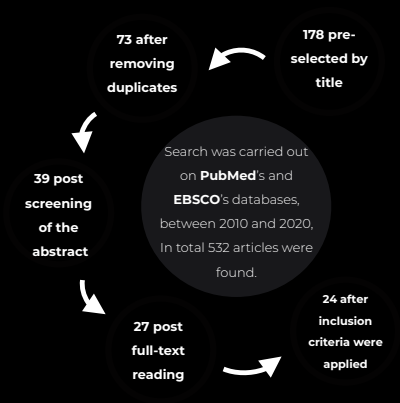
Endodontic Microsurgery encompasses the **removal** of **pathological** and **necrotic** tissues, followed by the **resection** of a small part of the **apex** and lastly, the preparation of the apical cavity in order to ultimately be filled with a **retrograde material**.

## AIM

Interpret the available literature in order to conclude the **effectiveness of L-PRF** in **Endodontic Microsurgery.**

## METHOD




The inclusion criteria considered only articles published in **English.** Human studies were not limited to RCTs.
In total, **24 articles** were included in this review.

*"**24.5%** of the referred cases for endodontic nonsurgical retreatment were judged by an endodontist as either **impossible** or **improbable** because it might jeopardize the **root integrity**"*

- Abramovitz I. Et al.

## DISCUSSION AND RESULTS

Biologically, L-PRF induced the proliferation of **fibroblasts** (9) and **stem cells** (2), acceleration of **hemostasis** (5), suppression of **osteoclastogenesis** (10), increased **osteoblastic** expression (11) and slowly released **growth factors** (2), **cytokines** (3) and **proteins** (3,4). In the **apical region**, was demonstrated complete regeneration in all of the studies (12-21), reduction in **post-surgical pain** (22), **inflammation** (23) and **analgesics' administration** (22). The **protocol of centrifugation** and the **materials** used demonstrated an influence over the effectiveness of the L-PRF produced (1,24).

## PROTOCOL

Given the currently available literature, it is clear that the **characteristics of centrifugation, protocol** and **materials** used influence the viability of the produced clot (1,24), being ideal: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**Growth factors, platelets and proteins** (1,2,3,4), are the **key components** behind the impacting **biological capacity of L-PRF**.

## ADVANTAGES

AUTOLOGOUS NATURE

LONG TERM

QUICK AND EASY TECHNIQUE

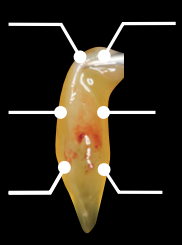

Image: Courtesy of Prof. Juliani Radunz ©

INEXPENSIVE

IMUNO-REGULATIVE

ACCELERATES HEMOSTASIA

## CONCLUSIONS

The use of **L-PRF** as an aid in **endodontic microsurgery** proved to be **successful**, achieving **complete healing** of **soft** and **hard** tissues in the apical region in all of the studies. In addition, demonstrated to reduce **post-surgical pain**, **inflammation** and **analgesics' administration**.

Image: Courtesy of Dr.Craig Barrington ©

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