



# *Regenerative medicine*

*for treating  
**osteoarthritis***

TREATMENT WITH PLASMA RICH  
IN GROWTH FACTORS



# *What is osteoarthritis?*

**It is a chronic disease** characterised by the gradual deterioration of the cartilage in the joints.

This deterioration leads to the **onset of pain with physical activity, stiffness and disability, as well as the progressive deformity of the affected knee, hip and/or hand.**

## ***What is the health impact?***

Osteoarthritis affects millions of people, and is in fact the most common joint disease, **and the most important cause of disability among the elderly population in developed countries.** Virtually all people over the age of 60 have at least one affected joint. Women suffer more frequently, while the disease usually occurs at a younger age in men.

It is the most  
common  
**RHEUMATIC  
DISEASE**

The most  
affected joint  
is usually  
**THE KNEE**

Its prevalence  
increases with  
**AGE**



## Diagnosis

The suspicion of possible osteoarthritis arises when pain appears in the joints that are typically affected by the disease. This suspicion must be confirmed by a **physical examination, taking x-rays** and the exclusion of other types of joint pathology. It should be borne in mind that, since it is a very common disease, **it can occur at the same time as other conditions** and therefore **always requires diagnosis by a specialist**.

## Treatment

The medical treatment of osteoarthritis aims to **control the symptoms and slow down the progression of the disease**.

The conventional existing treatments for osteoarthritis include: analgesics and nonsteroidal anti-inflammatory drugs, cartilage protectors (SYSADOAs), and hyaluronic acid injections. **Plasma rich in growth factors has emerged as an effective alternative to conventional treatments**.

The technology of plasma rich in growth factors is part of the field of personalized regenerative medicine, since, **using blood from the actual patient, it allows the obtaining of a medicine based on the therapeutic properties of the growth factors present in this blood**. Its application in the case of osteoarthritis **can slow the progression of the disease and reduce pain and inflammation**, improving patient mobility, and without any reported side effects<sup>(1,2)</sup>.

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(1) Vaquerizo V, Plasencia MÁ, Arribas I, Seijas R, Padilla S, Orive G, Anitua E. Comparison of Intra-Articular Injections of Plasma Rich in Growth Factors (PRGF-Endoret) Versus Durolane Hyaluronic Acid in the Treatment of Patients With Symptomatic Osteoarthritis: A Randomized Controlled Trial. *Arthroscopy*. 2013 Oct;29(10):1635-43.

(2) Sánchez M, Fiz N, Azofra J, Usabiaga J, Aduriz Recalde E, García Gutiérrez A, Albillos J, Gárate R, Aguirre JJ, Padilla S, Orive G, and Anitua E. A Randomized Clinical Trial Evaluating Plasma Rich in Growth Factors (PRGF-Endoret) Versus Hyaluronic Acid in the Short-Term Treatment of Symptomatic Knee Osteoarthritis. *Arthroscopy*, 2012. Vol 28, No 8 (August): pp 1070-1078.

# What are growth factors?

Growth factors are **proteins that are naturally found in the blood plasma and inside platelets**. They have an important function in the communication between cells and have a large number of biological effects, **playing an important role in healing processes and tissue regeneration**.

**Through the use of the plasma rich in growth factors technology developed by BTI, using a very small amount of blood (32 ml) from the patient it is possible to isolate and concentrate this group of proteins for their therapeutic application.**



# Benefits

## *of the technology of plasma rich in growth factors*

**DELAYS** the progress of the disease

**IMPROVES** the rigidity of the joint

**REDUCES** inflammation and pain

**IMPROVES** function and mobility

### ***How is this applied in the treatment of osteoarthritis?***

By intra-articular injections in the knee, hip or thumb. **These injections can be performed on an outpatient basis at the health centre.**

The treatment consists of three injections, one per week. After these first 3 sessions **the specialist will determine the pattern of treatment (annual, half-yearly, etc.).**



# Commitment to quality

*The professionals of this centre have received specific training in BTI's technology related to plasma rich in growth factors.*

BTI's technology related to plasma rich in growth factors meets all the regulatory and quality requirements established by the competent sanitary authorities.

This technology was designed for application using precise and very rigorous protocols that guarantee the quality of the final product obtained.

