



# Athens

5-7 October 2023

# EURO VISCO

## Recommendations for Viscosupplementation in Osteoarthritis. An Update

Thierry Conrozier (F), Yves Henrotin (B), Xavier Chevalier (F), Pascal Richette (F), Jörg Jerosch (D), Hervé Bard (F), Jordi Monfort (E), Raghu Raman (UK), Dominique Baron (F), Demirhan Diraçoglu (T), Belarmino Goncalves (P), Mats Brittberg (SW), Alberto Migliore (I)



A T H E N S

# EUROVISCO

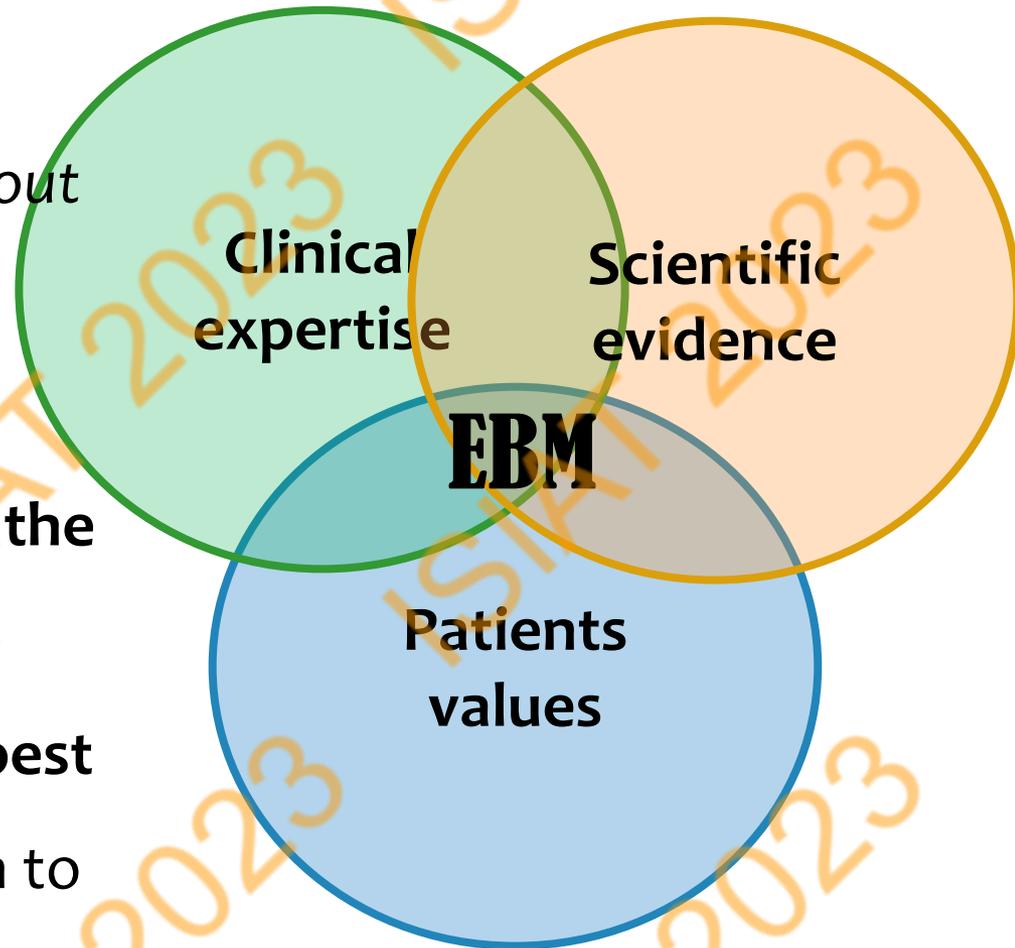
Viscosupplementation (VS), by intra-articular injection of hyaluronic acid (HA), is a worldwide used symptomatic treatment for knee and other joints osteoarthritis, for over a quarter-century.

**However, despite positive assessment by clinicians and patients, and a high level of evidence, some guidelines remain failing to recommend this. These guidelines justify their recommendations by referring to EBM.**

# EVIDENCE BASED MEDICINE

*“The conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients”.*

**The aim of EBM is to integrate the experience of the clinician, the values of the patient, and the best available scientific information to guide decision**



# EVIDENCE BASED MEDICINE

European Review for Medical and Pharmacological Sciences

2015; 19: 1124-1129

**The discrepancy between recommendations and clinical practice for viscosupplementation in osteoarthritis: mind the gap!**

A. MIGLIORE<sup>1,6</sup>, E. BIZZI<sup>1</sup>, J. HERRERO-BEAUMONT<sup>2,6</sup>, R.J. PETRELLA<sup>3,6</sup>,  
R. RAMAN<sup>4,6</sup>, X. CHEVALIER<sup>3,6</sup>

**Most guidelines are based on meta-analyses alone**

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Task force aimed to provide clarification to prescribers and users of VS, by proposing a consensual approach, based not only on the literature data but also on the clinical experience of the experts.



# EUROVISCO

**13** experts in the field of OA (# 700 publications in PubMed on OA),

**9** countries: UK, Belgium, Germany, Italy, France, Spain, Türkiye, Sweden and Portugal



- ❑ 6 rheumatologists, 3 orthopedic surgeons, 3 specialists in rehabilitation, 1 interventional radiologist
- ❑ University / public hospital / private practice

# EUROVISCO

## Methods

- Once a year the EUROVISCO members meet for 2 days in Lyon (France).
- 2 to 3 members of the group are tasked to collate an exhaustive literature analysis on the topic.
- The chairman is in charge of preparing a set of questions.



# EUROVISCO

## Methods

- For each issue the members assign a mark, from 1 to 9, in accordance with a DELPHI method.

| I do not agree |   |   | I agree under certain conditions |   |   | I agree |   |   |
|----------------|---|---|----------------------------------|---|---|---------|---|---|
| 1              | 2 | 3 | 4                                | 5 | 6 | 7       | 8 | 9 |



- The vote is conducted using interactive software (Quizzbox©,) giving the results immediately.
- Each proposition of recommendation is discussed by the group and a joint position is sought if possible.
- After hearing everyone's arguments, a new vote could be requested by the members wishing to modify their initial response.

# EUROVISCO

## Methods

For each issue, the average score, standard deviation, median and range are given.

### Level of consensus

#### Number of votes

- Unanimous = 13
- Strong = 12/11
- Moderate = 10/9
- Weak = 8
- No consensus  $\leq 7$

### Strength

#### Median

- 9-8 → Strong
- 7 → Moderate
- 6 → Weak
- $\leq 5$  → Not recommended





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Contents lists available at ScienceDirect

## Seminars in Arthritis and Rheumatism

journal homepage: [www.elsevier.com/locate/semarthrit](http://www.elsevier.com/locate/semarthrit)



### Consensus statement on viscosupplementation with hyaluronic acid for the management of osteoarthritis

Yves Henrotin, MD<sup>a,b</sup>, Raghu Raman, MD<sup>c</sup>, Pascal Richette, MD<sup>d,e</sup>, Hervé Bard, MD<sup>f</sup>, Jörg Jerosch, MD<sup>g</sup>, Thierry Conrozier, MD<sup>h,\*</sup>, Xavier Chevalier, MD<sup>i</sup>, Alberto Migliore, MD<sup>j</sup>

2015

# EUROVISCO

## Decision Algorithms for the Retreatment with Viscosupplementation in Patients Suffering from Knee Osteoarthritis: Recommendations from the EUROpean VIScosupplementation CONsensus Group (EUROVISCO)

Raghu Raman<sup>1</sup>, Yves Henrotin<sup>2</sup>, Xavier Chevalier<sup>3</sup>, Alberto Migliore<sup>4</sup>, Jörg Jerosch<sup>5</sup>, Jordi Montfort<sup>6</sup>, Hervé Bard<sup>7</sup>, Dominique Baron<sup>8</sup>, Pascal Richette<sup>9</sup>, and Thierry Conrozier<sup>10</sup>

Cartilage

1–13

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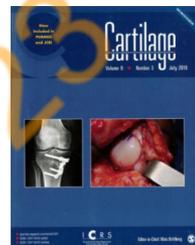
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2017



# EUROVISCO Recommendations for Optimizing the Clinical Results of Viscosupplementation in Osteoarthritis

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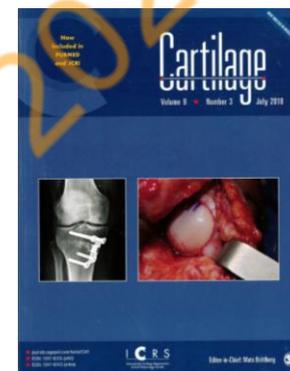

Thierry Conrozier<sup>1</sup> , Jordi Monfort<sup>2</sup>, Xavier Chevalier<sup>3</sup>, Raghu Raman<sup>4</sup>, Pascal Richette<sup>5</sup>, Demirhan Diraçoglu<sup>6</sup>, Hervé Bard<sup>7</sup>, Dominique Baron<sup>8</sup>, Jörg Jerosch<sup>9</sup>, Alberto Migliore<sup>10</sup>, and Yves Henrotin<sup>11</sup>

2018

## EUROVISCO

## EUROVISCO Guidelines for the Design and Conduct of Clinical Trials Assessing the Disease-Modifying Effect of Knee Viscosupplementation

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2018

Yves Henrotin<sup>1</sup>, Xavier Chevalier<sup>2</sup>, Raghu Raman<sup>3</sup>, Pascal Richette<sup>4</sup>, Jordi Montfort<sup>5</sup>, Jörg Jerosch<sup>6</sup>, Dominique Baron<sup>7</sup>, Hervé Bard<sup>8</sup> , Yannick Carrillon<sup>9</sup>, Alberto Migliore<sup>10</sup>, and Thierry Conrozier<sup>11</sup> 

# Re-treatment with hyaluronic acid viscosupplementation in Knee Osteoarthritis: agreement between EUROVISCO guidelines and current medical practice.

2021

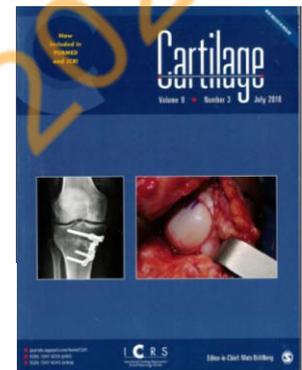
Yves Henrotin<sup>1</sup>, Cedric Tits<sup>2</sup>, Jérôme Paul<sup>2</sup>, Pierre Gramme<sup>2</sup>, Thibault Helleputte<sup>2</sup>, Alberto Migliore<sup>3</sup>, Pascal Richette<sup>4</sup>, Xavier Chevalier<sup>5</sup>, Jordi Monfort<sup>6</sup>, Demirhan Diracoglu<sup>7</sup>, Hervé Bard<sup>8</sup>, Jörg Jerosch<sup>9</sup>, Dominique Baron<sup>10</sup>, Raman Raghu<sup>11</sup>, Thierry Conrozier<sup>12</sup>.



## EUROVISCO Good Practice Recommendations for a First Viscosupplementation in Patients with Knee Osteoarthritis

Thierry Conrozier<sup>1</sup> , Demirhan Diraçoglu<sup>2</sup>, Jordi Monfort<sup>3</sup>, Xavier Chevalier<sup>4</sup>, Hervé Bard<sup>5</sup>, Dominique Baron<sup>6</sup>, Jörg Jerosch<sup>7</sup>, Alberto Migliore<sup>8</sup>, Pascal Richette<sup>9</sup>, and Yves Henrotin<sup>10</sup> 

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2022

Consensus statement on viscosupplementation with hyaluronic acid for the management of osteoarthritis

Yves Henrotin, MD<sup>a,b</sup>, Raghu Raman, MD<sup>c</sup>, Pascal Richette, MD<sup>d,e</sup>, Hervé Bard, MD<sup>f</sup>, Jörg Jerosch, MD<sup>g</sup>, Thierry Conrozier, MD<sup>h,\*</sup>, Xavier Chevalier, MD<sup>i</sup>, Alberto Migliore, MD<sup>j</sup>

# EUROVISCO

## STATEMENTS HAVING RECEIVED UNANIMITY OF VOTES

1. VS is an **effective treatment for mild to moderate knee OA**;
2. VS is **not an alternative to surgery in advanced hip OA**;
3. VS is a **well-tolerated treatment of knee and other joints OA**;
4. VS **should not be used only in patients who have failed to respond** adequately to analgesics and NSAIDs
5. VS is a « **positive** » **indication** but not a « lack of anything better » indication



Consensus statement on viscosupplementation with hyaluronic acid for the management of osteoarthritis

Yves Henrotin, MD<sup>a,b</sup>, Raghu Raman, MD<sup>c</sup>, Pascal Richette, MD<sup>d,e</sup>, Hervé Bard, MD<sup>f</sup>, Jörg Jerosch, MD<sup>g</sup>, Thierry Conrozier, MD<sup>h,\*</sup>, Xavier Chevalier, MD<sup>i</sup>, Alberto Migliore, MD<sup>j</sup>

# EURO VISCO

6. The dosing regimen must be **supported by evidence-based medicine**
7. **Cross-linking is a proven means for prolonging IA residence time of HA**
8. The **best approach to inject accurately knee joint is the lateral mid-patellar one;**
9. When VS is performed under fluoroscopy, **the amount of radio-opaque contrast agent must be as low as possible** to avoid viscosupplement dilution.

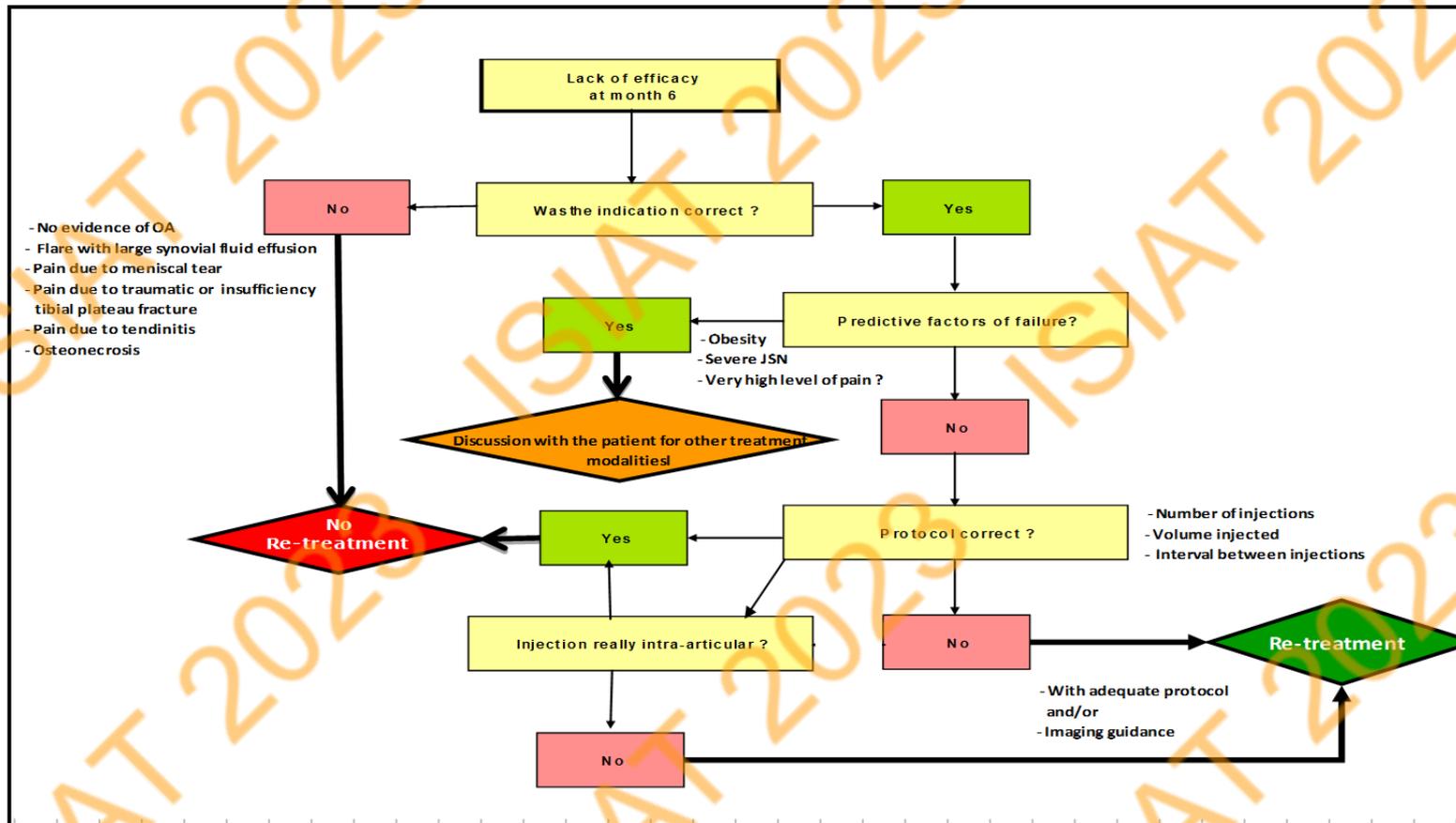
**Decision Algorithms for the Retreatment with Viscosupplementation in Patients Suffering from Knee Osteoarthritis: Recommendations from the EUROpean VIScosupplementation COnsensus Group (EUROVISC0)**

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Raghu Raman<sup>1</sup>, Yves Henrotin<sup>2</sup>, Xavier Chevalier<sup>3</sup>,  
Alberto Migliore<sup>4</sup>, Jörg Jerosch<sup>5</sup>, Jordi Montfort<sup>6</sup>, Hervé Bard<sup>7</sup>,  
Dominique Baron<sup>8</sup>, Pascal Richette<sup>9</sup>, and Thierry Conrozier<sup>10</sup>

**Decision tree for re-treatment with IA-HA after failure of a previous VS**



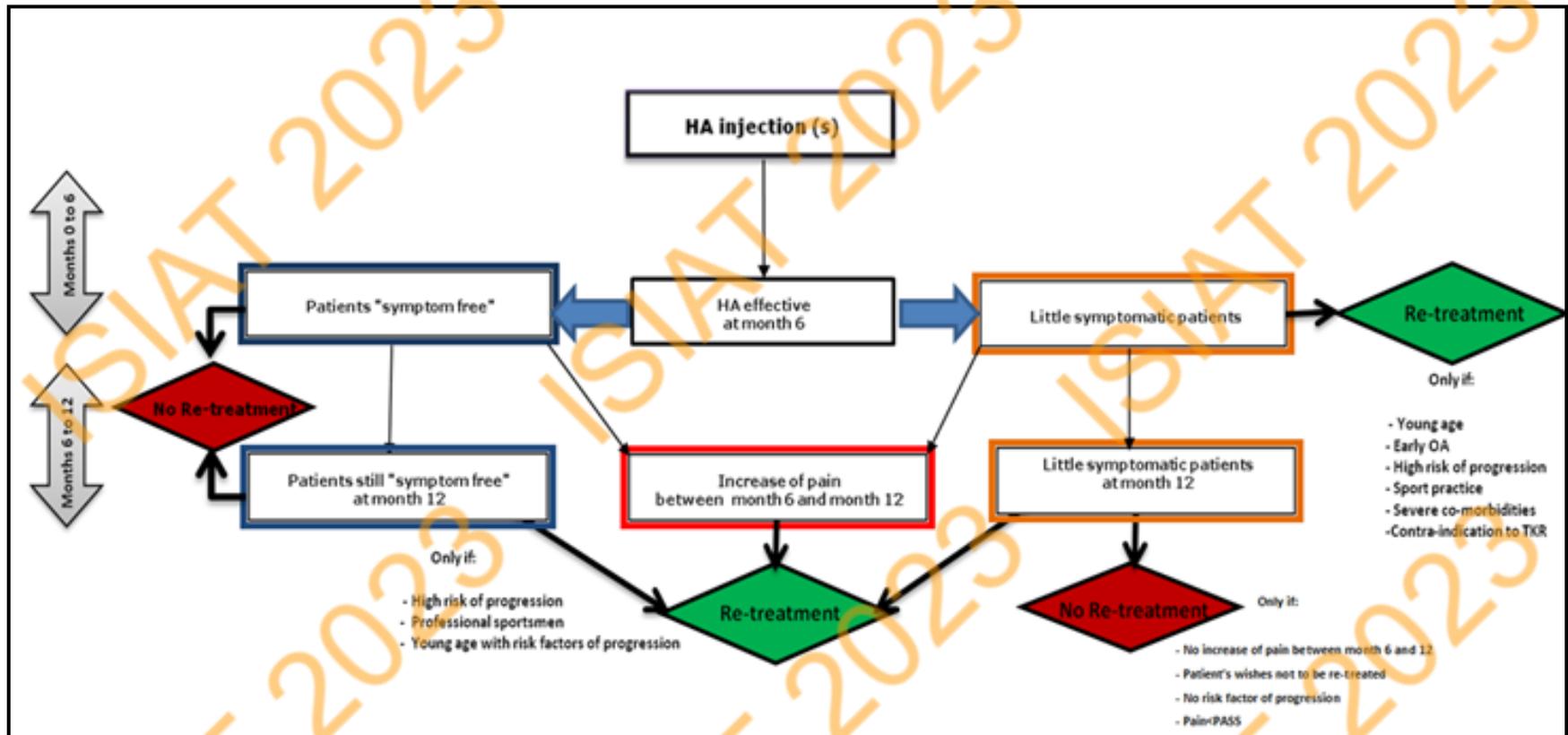
Decision Algorithms for the Retreatment with Viscosupplementation in Patients Suffering from Knee Osteoarthritis: Recommendations from the EUROpean VIScosupplementation COnsensus Group (EUROVISC0)

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Decision tree for re-treatment with IA-HA after success of a previous VS



## ❑ In case of failure of VS:

- ❑ A rigorous clinical and radiological analysis is mandatory,
- ❑ Check VS has been used in concordance with data from the EBM, and injected adequately.

- ❑ In patients who previously improved with VS,
  - ❑ Re-treatment can be considered as soon as pain recurs or increases again.
  - ❑ In subjects with a high risk of progression, VS re-treatment can be considered systematically even in asymptomatic patients as there is compelling new evidence on HA to retard OA progression

## EUROVISCO Recommendations for Optimizing the Clinical Results of Viscosupplementation in Osteoarthritis

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Thierry Conrozier<sup>1</sup>, Jordi Monfort<sup>2</sup>, Xavier Chevalier<sup>3</sup>, Raghu Raman<sup>4</sup>, Pascal Richette<sup>5</sup>, Demirhan Diraçoğlu<sup>6</sup>, Hervé Bard<sup>7</sup>, Dominique Baron<sup>8</sup>, Jörg Jerosch<sup>9</sup>, Alberto Migliore<sup>10</sup>, and Yves Henrotin<sup>11</sup>



## STATEMENTS

- ❑ **A good indication**, based on both an accurate analysis of signs, symptoms and clinical history as well as **a precise analysis of the radiological features** may improve the chances of success of VS.
- ❑ **Radiological severity** (KL score IV vs. I-III) may influence the response of VS in the knee and the hip.
- ❑ **A good technique of injection** and/or the use of **an imaging guidance** may enhance the chances of success of VS.

## EUROVISCO Recommendations for Optimizing the Clinical Results of Viscosupplementation in Osteoarthritis

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### 3 KEY RECOMMENDATIONS ON INJECTION TECHNIQUES

1. We recommend administering VS in the knee through a **lateral patellofemoral route**.
2. We recommend performing VS under **fluoroscopy or ultrasound guidance in the hip and the ankle**.

**EUROVISCO Recommendations for  
Optimizing the Clinical Results of  
Viscosupplementation in Osteoarthritis**

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Jörg Jerosch<sup>9</sup>, Alberto Migliore<sup>10</sup>, and Yves Henrotin<sup>11</sup>



## FURTHER RECOMMENDATIONS

1. We recommend **withdrawing any synovial fluid** by careful aspiration before injecting HA in any joint.
2. We recommend **respecting the dosing regimen**—number of HA injections and interval between **injections**—that have been **proved by controlled randomized trials** regardless the joint to be treated.

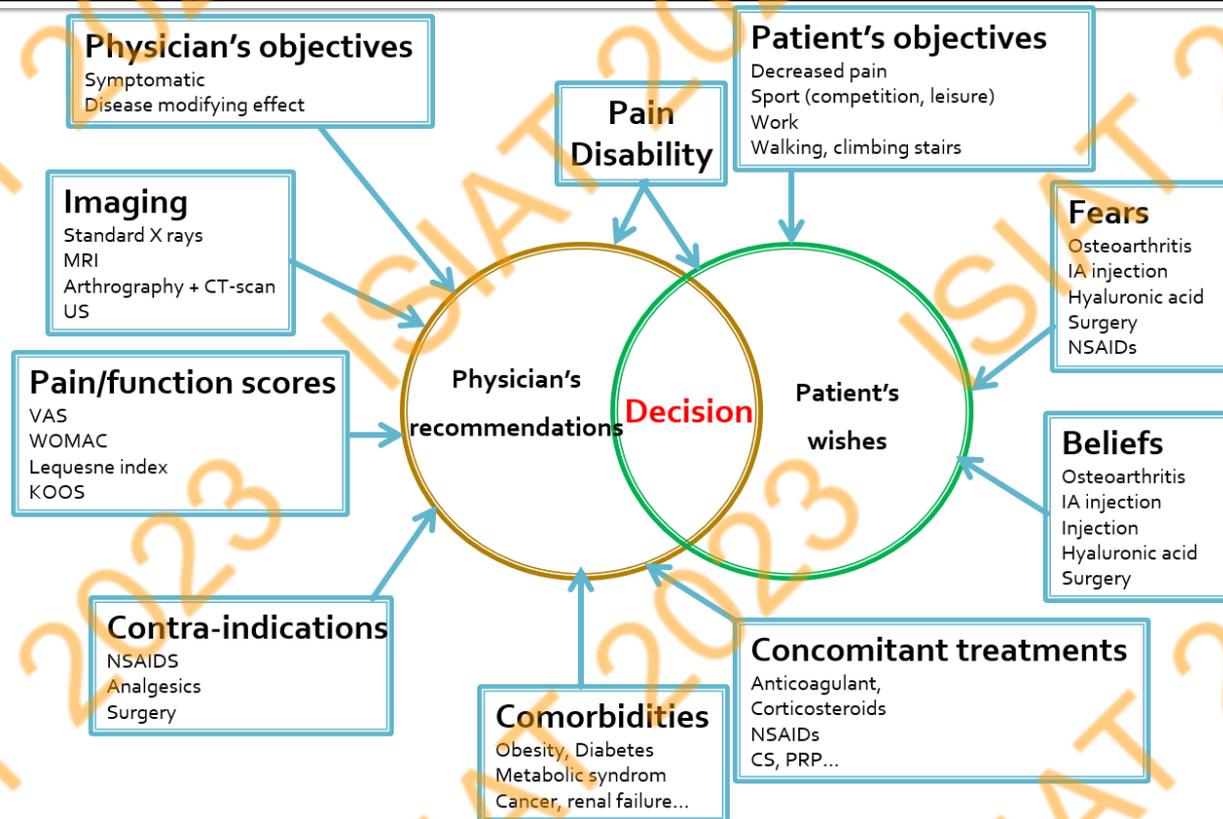
# EUROVISCO Good Practice Recommendations for a First Viscosupplementation in Patients with Knee Osteoarthritis

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Xavier Chevalier<sup>4</sup>, Hervé Bard<sup>5</sup>, Dominique Baron<sup>6</sup>,  
Jörg Jerosch<sup>7</sup>, Alberto Migliore<sup>8</sup>, Pascal Richette<sup>9</sup>,  
and Yves Henrotin<sup>10</sup>

## Factors influencing the decision for viscosupplementation in patients with knee osteoarthritis



## EUROVISCO Recommendations for Optimizing the Clinical Results of Viscosupplementation in Osteoarthritis

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- ❑ VS must be considered in **symptomatic patients** only.
- ❑ VS may be considered for a condition whose symptoms have been **present for more than 3 months**.
- ❑ It is recommended **to assess pain** on a visual analogue or digital scale before considering VS.

## EUROVISCO Good Practice Recommendations for a First Viscosupplementation in Patients with Knee Osteoarthritis



Thierry Conrozier<sup>1</sup>, Demirhan Diraçoglu<sup>2</sup>, Jordi Monfort<sup>3</sup>,  
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Jörg Jerosch<sup>7</sup>, Alberto Migliore<sup>8</sup>, Pascal Richette<sup>9</sup>,  
and Yves Henrotin<sup>10</sup>

- The **Kellgren-Lawrence** classification is a key factor in the decision for VS.
- **A standard x-ray** of the knee must be obtained before the decision to use VS.
- If the x-ray is normal, the diagnosis must be confirmed by an **MRI or a CT arthrogram** before considering VS.

## EUROVISCO Good Practice Recommendations for a First Viscosupplementation in Patients with Knee Osteoarthritis



Thierry Conrozier<sup>1</sup>, Demirhan Diraçoglu<sup>2</sup>, Jordi Monfort<sup>3</sup>,  
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Jörg Jerosch<sup>7</sup>, Alberto Migliore<sup>8</sup>, Pascal Richette<sup>9</sup>,  
and Yves Henrotin<sup>10</sup>

- ❑ VS may be considered with the **aim of relieving pain, improving function, and reducing NSAID consumption.**
- ❑ The use of VS must **not be considered** with the aim of **treating OA flare with effusion.**
- ❑ There is **no justification** for the administration of an intra-articular injection of a **corticosteroid** at the same time as VS.

## EUROVISCO Good Practice Recommendations for a First Viscosupplementation in Patients with Knee Osteoarthritis



Thierry Conrozier<sup>1</sup> , Demirhan Diraçoğlu<sup>2</sup>, Jordi Monfort<sup>3</sup>,  
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Jörg Jerosch<sup>7</sup>, Alberto Migliore<sup>8</sup>, Pascal Richette<sup>9</sup>,  
and Yves Henrotin<sup>10</sup> 

- ❑ VS can be envisaged as a **first-line pharmacological treatment** in patients having a contra-indication to the use of NSAIDs or step 1 and 2 analgesics.
- ❑ VS can be envisaged in patients with a **contra-indication to knee replacement surgery.**
- ❑ In the case of comorbidities (diabetes, hypertension, GI disorders, renal failure, etc.), **VS can avoid the use of potentially more dangerous treatments** (NSAIDs, corticosteroids).

## EUROVISCO Good Practice Recommendations for a First Viscosupplementation in Patients with Knee Osteoarthritis



Thierry Conrozier<sup>1</sup>, Demirhan Diraçoglu<sup>2</sup>, Jordi Monfort<sup>3</sup>,  
Xavier Chevalier<sup>4</sup>, Hervé Bard<sup>5</sup>, Dominique Baron<sup>6</sup>,  
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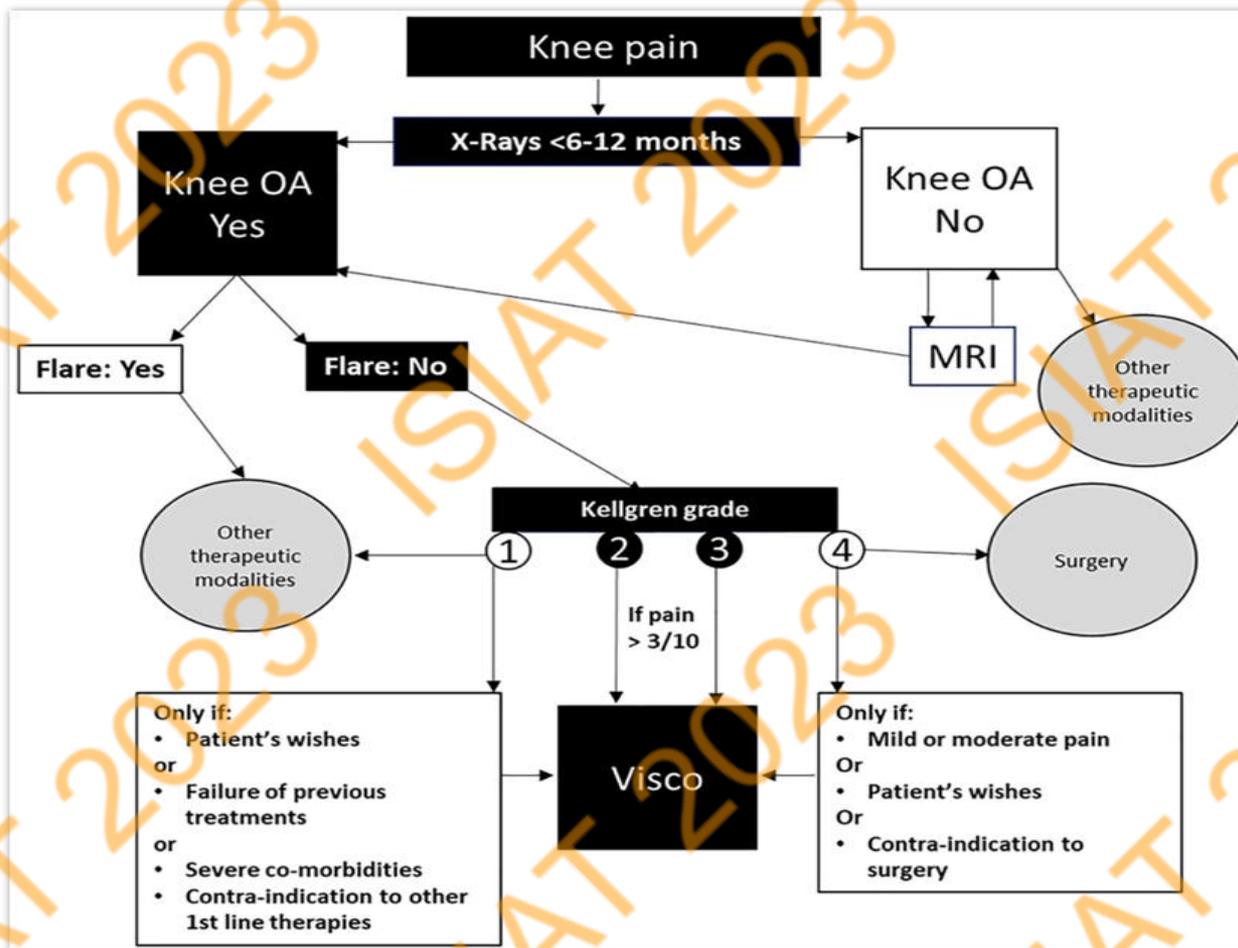
- ❑ Knee VS can be envisaged in patients receiving **antiplatelet agents, vitamin K antagonists, and direct factor Xa or thrombin inhibitors.**
- ❑ After a first knee VS, **patients must be systematically followed up for an efficacy evaluation approximately 6 months after the injection.**

# EUROVISCO Good Practice Recommendations for a First Viscosupplementation in Patients with Knee Osteoarthritis



Thierry Conrozier<sup>1</sup>, Demirhan Diraçoglu<sup>2</sup>, Jordi Monfort<sup>3</sup>, Xavier Chevalier<sup>4</sup>, Hervé Bard<sup>5</sup>, Dominique Baron<sup>6</sup>, Jörg Jerosch<sup>7</sup>, Alberto Migliore<sup>8</sup>, Pascal Richette<sup>9</sup>, and Yves Henrotin<sup>10</sup>

## Decision tree for a 1<sup>st</sup> treatment with VS in patient with knee pain



**EUROVISCO**

**2023**

*Viscosupplementation*

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**EUROVISCO good practice recommendations for viscosupplementation in clinical scenarios out of therapeutic guidelines**

**Jordi Monfort<sup>1</sup>, Yves Henrotin<sup>2,3</sup>, Xavier Chevalier<sup>4</sup>, Alberto Migliore<sup>5</sup>, Dominique Baron<sup>6</sup>, Jörg Jerosch<sup>7</sup>, Pascal Richette<sup>8</sup>, Hervé Bard<sup>9</sup>, Mats Brittberg<sup>10</sup>, Demirhan Diraçoğlu<sup>11</sup>, Raghu Raman<sup>12</sup>, Thierry Conrozier<sup>13</sup>**

# EURO VISCO



*Viscosupplementation*

## **Recommendations for the use of viscosupplementation in knee osteoarthritis based on patient characteristics**

**Thierry Conrozier<sup>1</sup>, Raghu Raman<sup>2</sup>, Demirhan Diraçoglu<sup>3</sup>, Jordi Montfort<sup>4</sup>, Hervé Bard<sup>5</sup>, Dominique Baron<sup>6</sup>, Belarmino Goncalves<sup>7</sup>, Pascal Richette<sup>8</sup>, Mats Brittberg<sup>10</sup>, Alberto Migliore<sup>11</sup>, Yves Henrotin<sup>12</sup>, Xavier Chevalier<sup>13</sup>**

# EUROVISCO

- ❑ Appropriate patient **Selection** – Select the “BEST RESPONDER”
- ❑ Identify a Positive **Indications** to use Viscosupplementation
- ❑ Use best **Products** for best results
- ❑ Use the best **Injection Techniques**,
- ❑ **Re-treat** the correct patient at the right time

**EACH PATIENT PRESENTS WITH INDIVIDUAL NEEDS**

**AN INDIVIDUALIZED MULTIMODAL APPROACH IS RECOMMENDED**

# EURO VISCOC

Thank  
You!

International  
Symposium  
Intra  
Articular  
Treatment



Thanks to: Yves Henrotin, Xavier Chevalier, Pascal Richette, Jörg Jerosch, Hervé Bard, Jordi Monfort, Raghu Raman, Dominique Baron, Demirhan Diraçoglu, Belarmino Goncalves, Mats Brittberg, Alberto Migliore

