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7<sup>th</sup>



International  
Symposium  
Intra  
Articular  
Treatment

**Athens**

5-7 October  
**2023**



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# COBRAVI - ATM

Brazilian Consensus on Viscosupplementation of  
Temporomandibular Joint

*Ricardo Tesch*  
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Temporomandibular disorders (TMD) are a heterogeneous group of disorders involving the temporomandibular joint (TMJ), the masticatory muscles, and associated structures <sup>1-3</sup>. TMD affect 5 to 12% of population <sup>4</sup>, and their management causes high costs to public health <sup>5</sup>. The most common signs and symptoms include pain, TMJ sounds, and limitation of mandibular movement, which can compromise daily activities and quality of life <sup>2, 6</sup>.



***+ 35 millions in need of treatment***

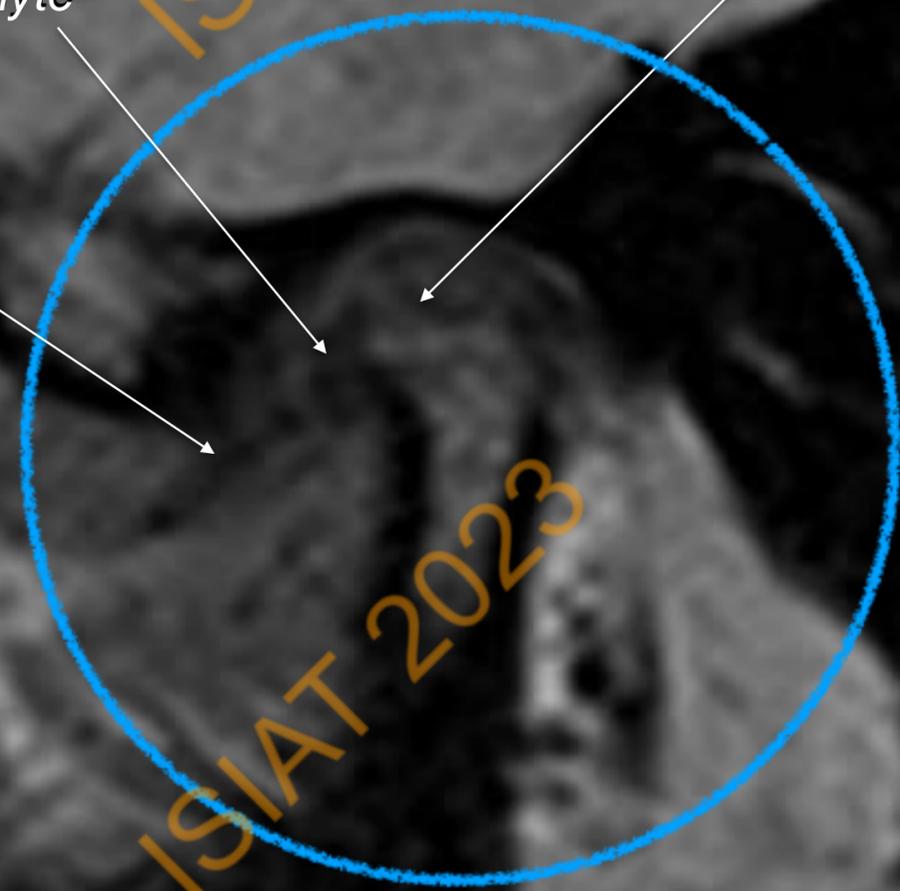
Viscosupplementation (VS) is a minimally invasive procedure used for more than 30 years in the treatment of intra-articular disorders.

Although most studies have been conducted to assess its efficacy and safety in cases of osteoarthritis (OA) of large joints, VS has gained importance in the management of temporomandibular joint (TMJ) disorders, such as articular disc displacements, with or without reduction, and degenerative joint diseases <sup>7</sup>.

*Osteophyte*

*Disc Displacement*

*Cortical Erosions*



*TMJ Left Side Closed*

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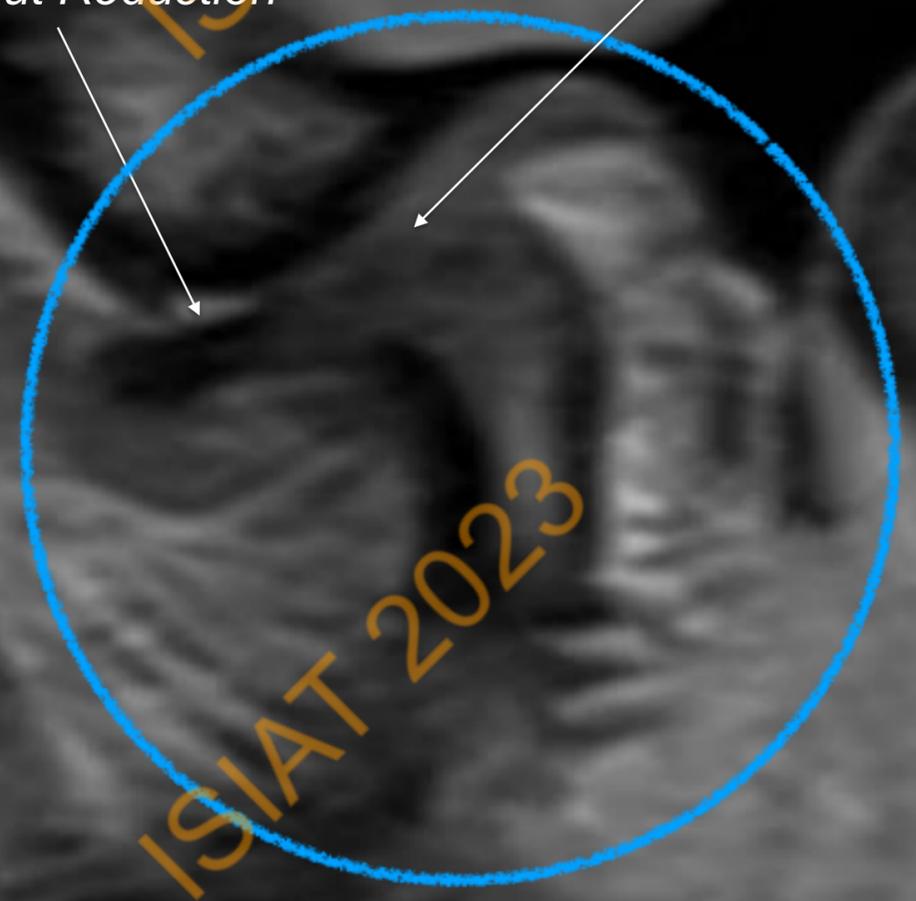
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*Disc Displacement  
without Reduction*

*Cortical Erosions*



*TMJ Left Side Open*

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Although most minimally invasive therapies used to control TMJ disorders have come from previous experience in other joints, especially the knee, the rational use of VS in the treatment of TMJ disorders is still not a consensus in Brazilian clinical practice.

The present consensus aimed to provide a useful reference for the rational use of VS for the control of TMJ disorders, including aspects related to the technique, indications, efficacy and safety, through its use alone or in association with other therapies.

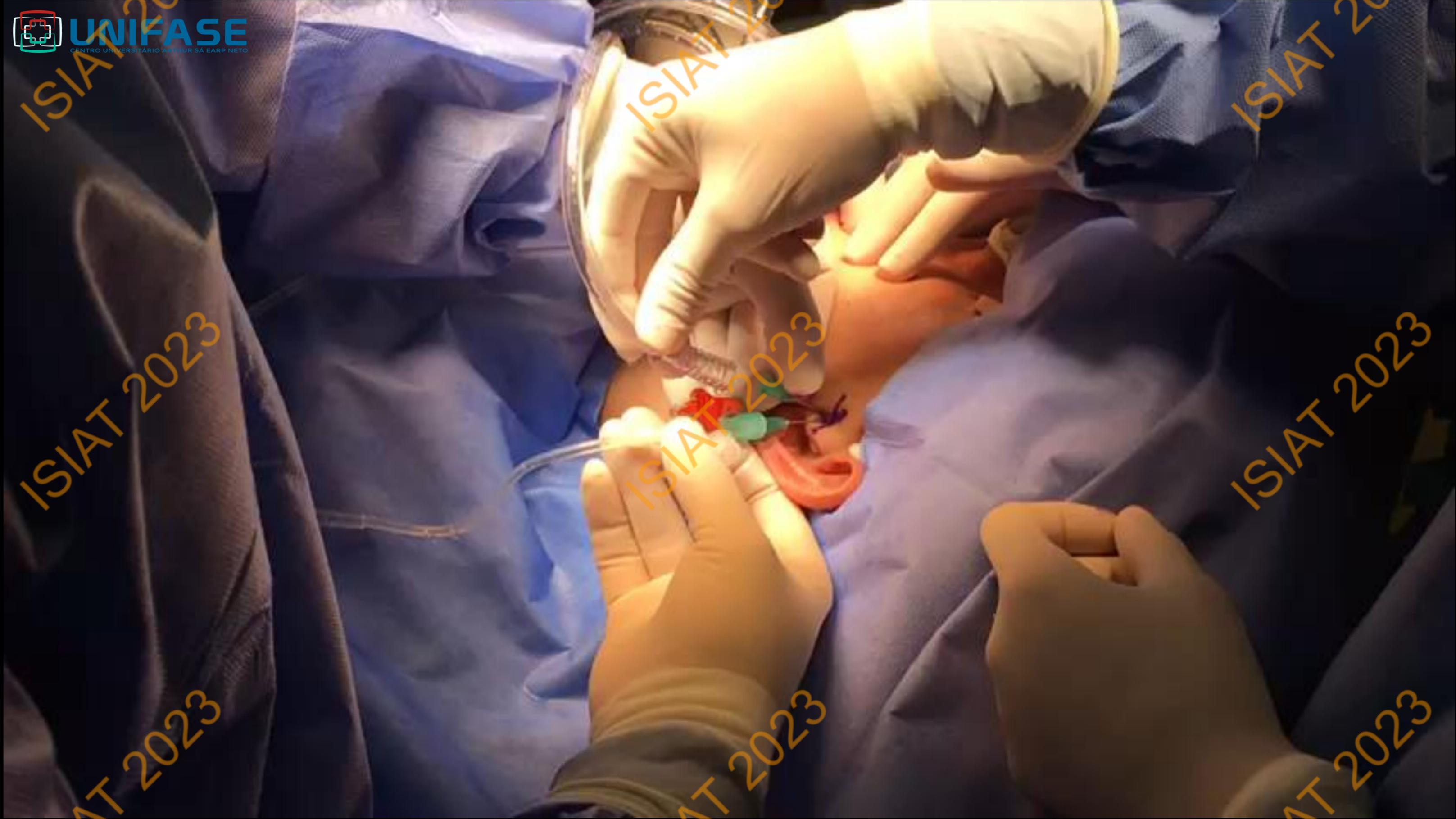


## Indications

STATEMENT	MEAN	MEDIAN	RANGE	CONSENSUS		
				ATTRIBUTE	% Agreement	DETAIL
01 - VS is a safe and well-tolerated treatment for articular TMD.	9,8	10	9-10	Agree	100,0	“unanimously in favour”
02 - VS can be the first-choice indication in the treatment of articular TMD.	4,1	0	0-10	No consensus	44,4	“without consensus”
03 - VS is an effective approach to the treatment of disc displacements.	8,3	8	5-10	Agree	77,8	“moderately in favour”
04 - VS is an effective approach to the treatment of TMJ OA.	8,4	8	6-10	Agree	88,9	“strongly in favour”

## Technique

STATEMENT	MEAN	MEDIAN	RANGE	CONSENSUS		
				ATTRIBUTE	% Agreement	DETAIL
05 - HA injection therapy should be performed in cycles.	5,6	8	0-10	No consensus	55,6	“without consensus”
06 - Arthrocentesis should always be performed before the first injection.	2,7	1	0-8	Disagree	11,1	“moderately against”
07 - The compartment to be injected (upper/lower) depends on the diagnosis of intra-articular TMD.	6,9	8	3-10	No consensus	55,6	“without consensus”
08 - Image guidance increases the safety and effectiveness of TMJ VS.	9,7	10	7-10	Agree	100,0	“unanimously in favour”



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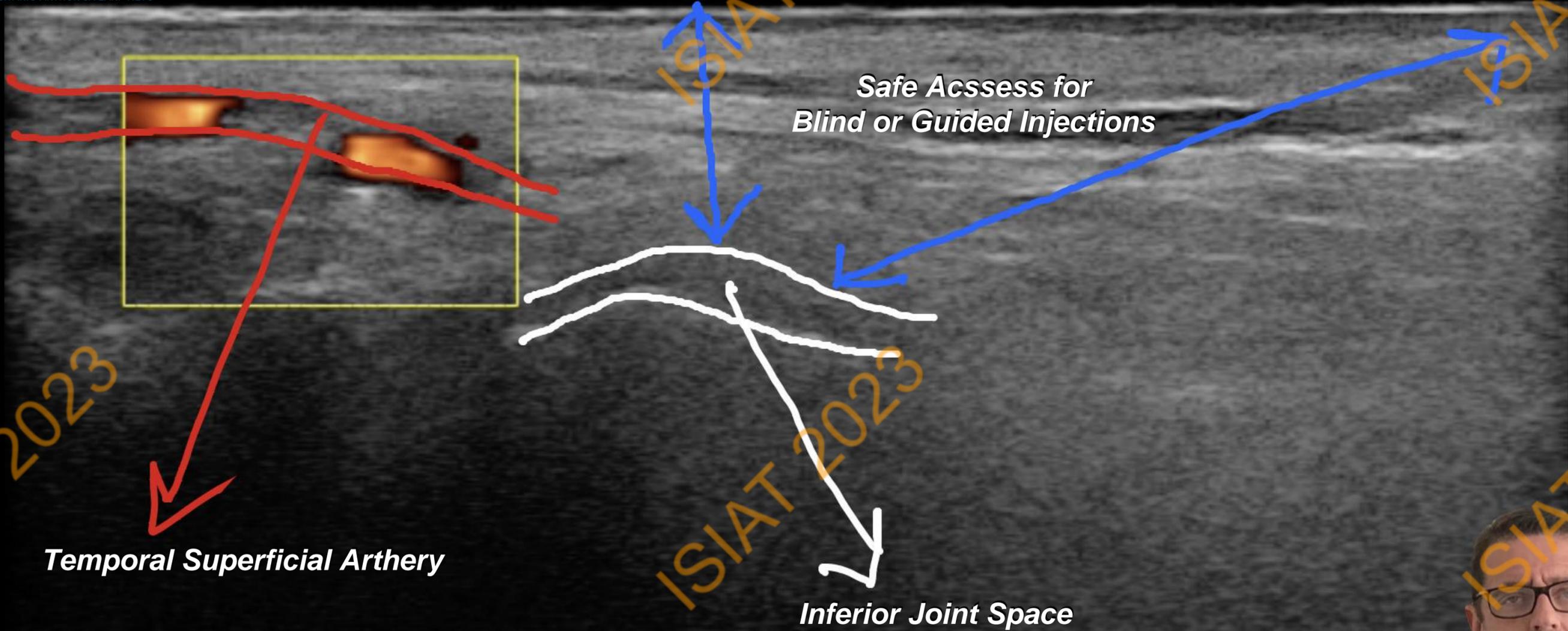
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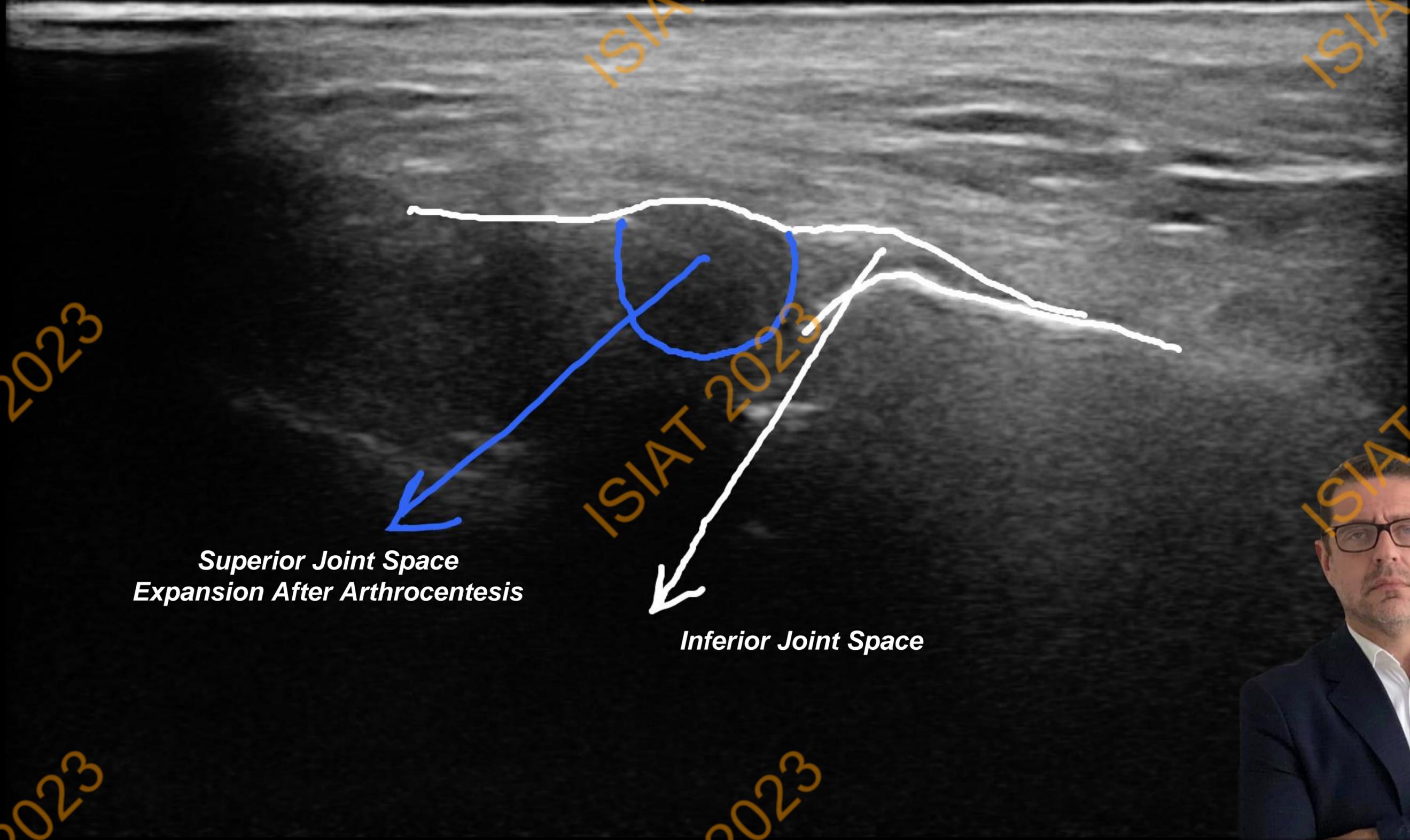
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*Doutor Ciências da Saúde UFRJ*



*Superior Joint Space  
Expansion After Arthrocentesis*

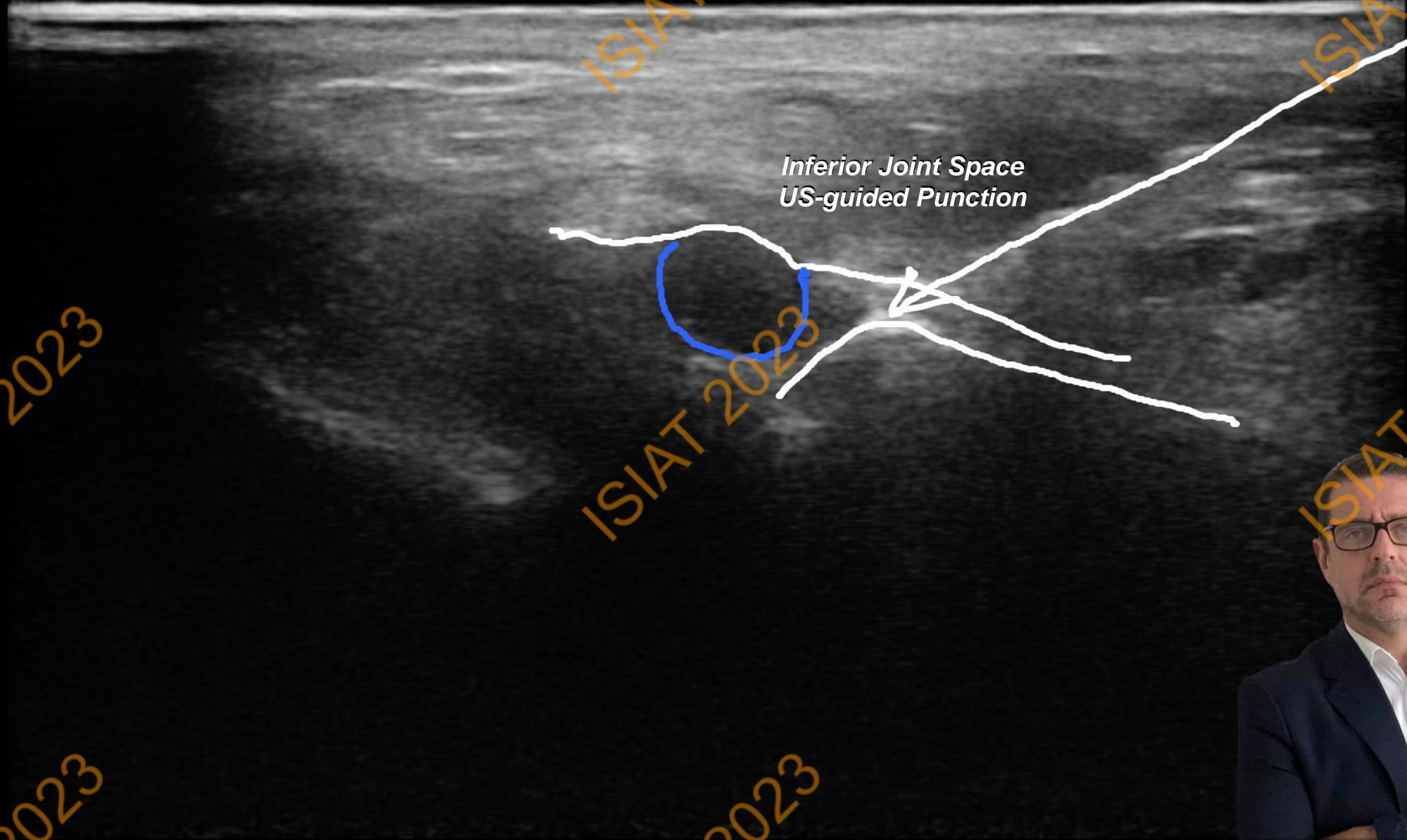
*Inferior Joint Space*



*Ricardo Tesch  
Doutor Ciências da Saúde UFRJ*



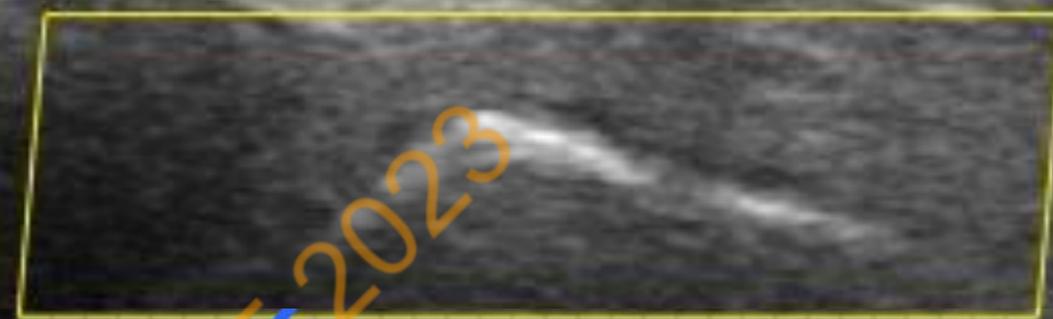
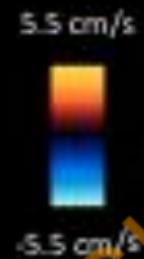
*Ricardo Tesch*  
*Doutor Ciências da Saúde UFRJ*



*Inferior Joint Space  
US-guided Punction*



*Ricardo Tesch  
Doutor Ciências da Saúde UFRJ*



**HA Injection  
Inferior Joint Space  
US Power Doppler**

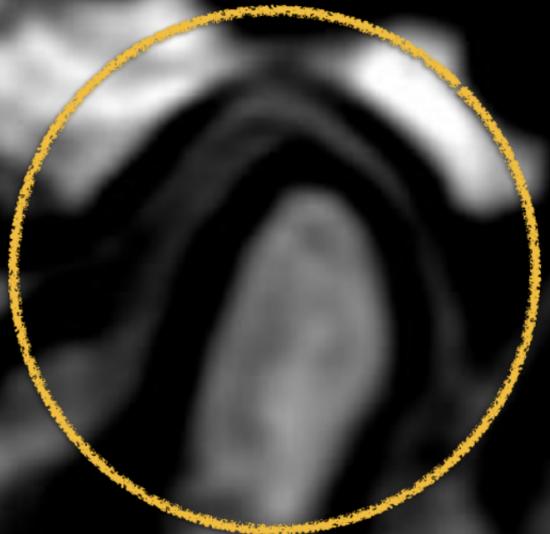


*Ricardo Tesch  
Doutor Ciências da Saúde UFRJ*

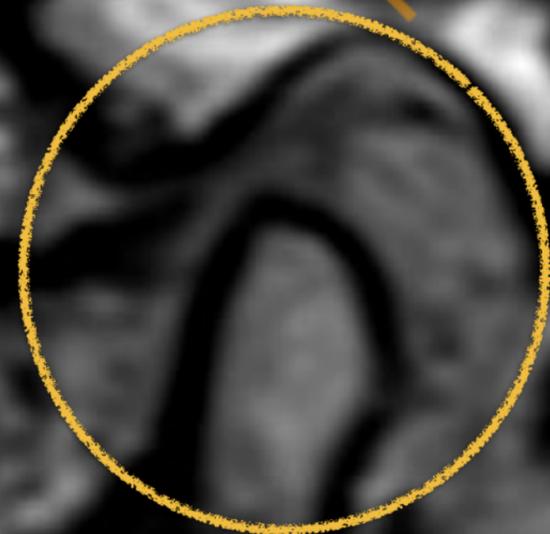
## Mechanisms of action and therapeutic properties

STATEMENT	MEAN	MEDIAN	RANGE	CONSENSUS		
				ATTRIBUTE	% Agreement	DETAIL
09 - VS has <b>only</b> biomechanical effects.	0,2	0	0-2	Disagree	0,0	“unanimously against”
10 - VS has analgesic and anti-inflammatory effects.	9,4	10	8-10	Agree	100,0	“unanimously in favour”
11 - In the case of TMJ osteoarthritis, VS has chondroprotective effects.	6,2	7	0-9	Agree	55,6	“moderately in favour”
12 - VS is useful in reestablishing mandibular function and improving quality of life of patients with articular TMD.	7,8	8	5-10	Agree	66,7	“moderately in favour”





*TMJ R. DP 2023*



*TMJ R. DP 2023*

## Association with other techniques

STATEMENT	MEAN	MEDIAN	RANGE	CONSENSUS		
				ATTRIBUTE	% Agreement	DETAIL
13 - Arthrocentesis followed by VS presents superior results in terms of improvement in pain, function and quality of life, when compared to the use of arthrocentesis alone.	8,1	9	5-10	Agree	66,7	“moderately in favour”
14 - Pharmacological approaches/interventions associated with VS improve pain, function and quality of life outcomes in adult patients with articular TMD, when compared to the use of VS alone.	8,6	9	5-10	Agree	88,9	“strongly in favour”
15 - Non-pharmacological approaches/interventions associated with VS improve pain, function and quality of life outcomes in adult patients with articular TMD, when compared to the use of VS alone.	8,7	9	5-10	Agree	88,9	“strongly in favour”

### General issues related to the VS technique

STATEMENT	MEAN	MEDIAN	RANGE	CONSENSUS		
				ATTRIBUTE	% Agreement	DETAIL
16 - A functional load reduction period of at least 24 hours should be recommended after TMJ VS.	8,9	9	7-10	Agree	100,0	“unanimously in favour”

## Pharmacoeconomics

STATEMENT	MEAN	MEDIAN	RANGE	CONSENSUS		
				ATTRIBUTE	% Agreement	DETAIL
17- Viscosupplementation can be a cost-saver for the health system.	6,2	5	2-10	No consensus	44,4	"without consensus"

### Medical education

STATEMENT	MEAN	MEDIAN	RANGE	CONSENSUS		
				ATTRIBUTE	% Agreement	DETAIL
18 - Specialized professional education is necessary to ensure the rational, safe and effective use of the VS technique in the treatment of articular TMD.	9,9	10	9-10	Agree	88,9	“unanimously in favour”

The consensus was **unanimously favorable** that VS is a safe and well-tolerated treatment of articular TMD. Its effects are not limited to biomechanical ones, but also analgesic and anti-inflammatory.

Image guidance, increases the safety of TMJ VS. A functional load reduction period of at least 24h should be recommended after TMJ viscosupplementation and specialized professional education is necessary to ensure the rational, safe and effective use of the VS technique in the treatment of articular TMD.

The consensus was **strongly favorable** that VS is an effective approach to the treatment of TMJ OA. Pharmacological and non-pharmacological approaches/interventions associated with VS improve pain, function and quality of life outcomes in adult patients with articular TMD, when compared to the use of VS alone.

The consensus was **moderately favorable** that VS is an effective approach to the treatment of disc displacements and it is useful in reestablishing mandibular function and improving quality of life of patients with articular TMD. In the case of TMJ OA, VS has chondroprotective effect and arthrocentesis should always be performed before the first injection.

**There was not a consensus about:**

**VS can be the first-choice in the treatment of articular TMD.**

(always begin with conservative treatment x particular conditions)

**HA injection therapy should be performed in cycles.**

(from one shot to cycles x no high quality RCT comparing both)

**The compartment to be infiltrated depends on the articular TMD diagnosis.**

(lack of studies targeting exactly this issue)

**VS can be a cost-saver for the health system.**

(low external validity of available of PE studies in TMJ)

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