Diagram of the study:

Flow chart					
☒ = Present	baseline	J45	J+3 mois	J+6 mois	J+12 mois
Inclusion and exclusion criteria	☐				
Informed consent	☐				
Demographic data	☐				
Blood sample (vit D + cholesterol)	☐	☐	☐	☐	☐
Physical examination/function tests	☐	☐	☐	☐	☐
Constant-Murley	☐	☐	☐	☐	☐
ASES	☐	☐	☐	☐	☐
VAS pain	☐	☐	☐	☐	☐
SSV	☐	☐	☐	☐	☐
MRI rotator cuff imaging					☐

	Selection	**Study period**				
	D-60 to J0 [a]	**J0[a]**	**M1,5**	**M3**	**M6**	**M12**
Visits	**V1**	**V2**	**V3**	**V4**	**V5**	**V6 End of study**
Free and informed consent	X					
Verification of eligibility criteria	X					
Previous treatments	X					
Concomitant treatments[b]	X	X				

	Selection	**Study period**				
	D-60 to J0 [a]	**J0[a]**	**M1,5**	**M3**	**M6**	**M12**
Visits	**V1**	**V2**	**V3**	**V4**	**V5**	**V6 End of study**
Comorbidités	X	X	X	X	X	X
Clinical examination (height, weight, BMI, mobility)	X		X	X	X	X
Pre-anesthetic blood tests	X					
Blood tests[c]	X[d]					
Randomisation	X					
Demographics (age, inclusion number and date of consent)	X					
Surgery		X				
Evaluation offunction, pain, mobility: Score Constant-Murley *(Completed by you and your doctor)* Score ASES *(Completed by yourself)*	X X		X X	X X	X X	X X
Function Evaluation: *Score SSV* *(Completed by yourself)*	X		X	X	X	X
Pain assessment: Score EVA *(Completed by yourself)*	X		X	X	X	X
Imaging (MRI)						X
Follow-up of surgical complications / readmissions / rehospitalizations			X	X	X	X
Unwanted events	X	X	X	X	X	X
Patient diary (completed daily)[e]		X →	X			

[a] The date of signature of the consent will act as J0 for the 2 groups.

[b] Particularly treatments for blood pressure, diabetes, dyslipidemia and sleep apnea.

[c] Research-specific reviews:

	Selection	**Study period**				
	D-60 to J0 [a]	**J0**[a]	**M1,5**	**M3**	**M6**	**M12**
Visits	**V1**	**V2**	**V3**	**V4**	**V5**	**V6 End of study**
- Vitamin D balance (25-hydroxyvitamin D and 1.25 dihydroxyvitamin D) - Lipid balance (total cholesterol, LDL cholesterol, HDL cholesterol and triglycerides) - If diabete:Lycated Emoglobin H (HbA1c) [d] Results should be dated no more than 60 days before J0. [e] Only for patients in the biomodulation group the day after the procedure (J0)						