



PHYSIOTHERAPY IN
ROTATOR CUFF
REPAIR
EVIDENCE-BASED

BEATRIZ MARTINEZ TOLEDO
PT at the Faculty of Physical Therapy
University of A Coruña

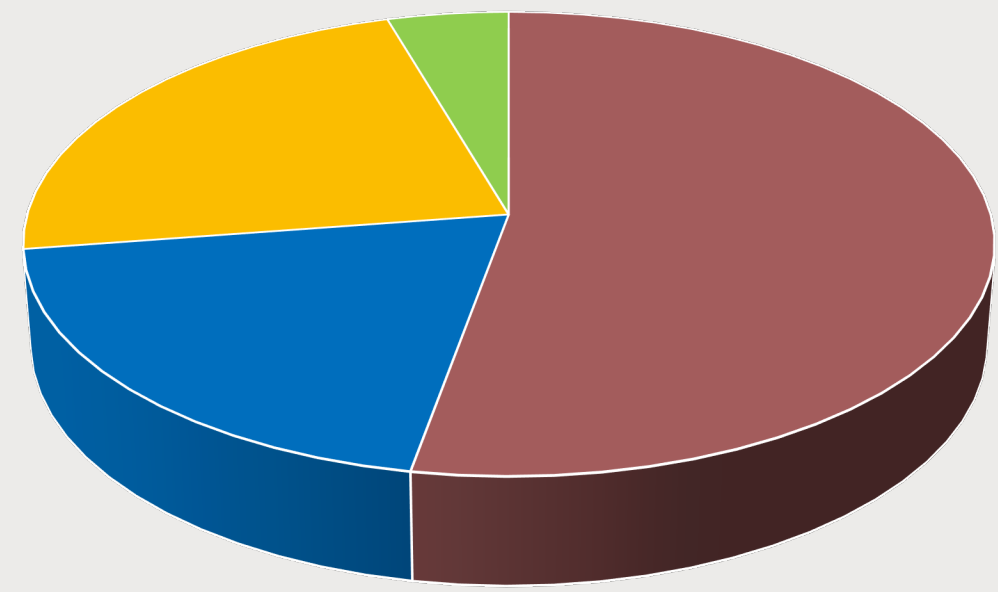


FACULTY OF PHYSICAL THERAPY. UNIVERSITY OF A CORUÑA



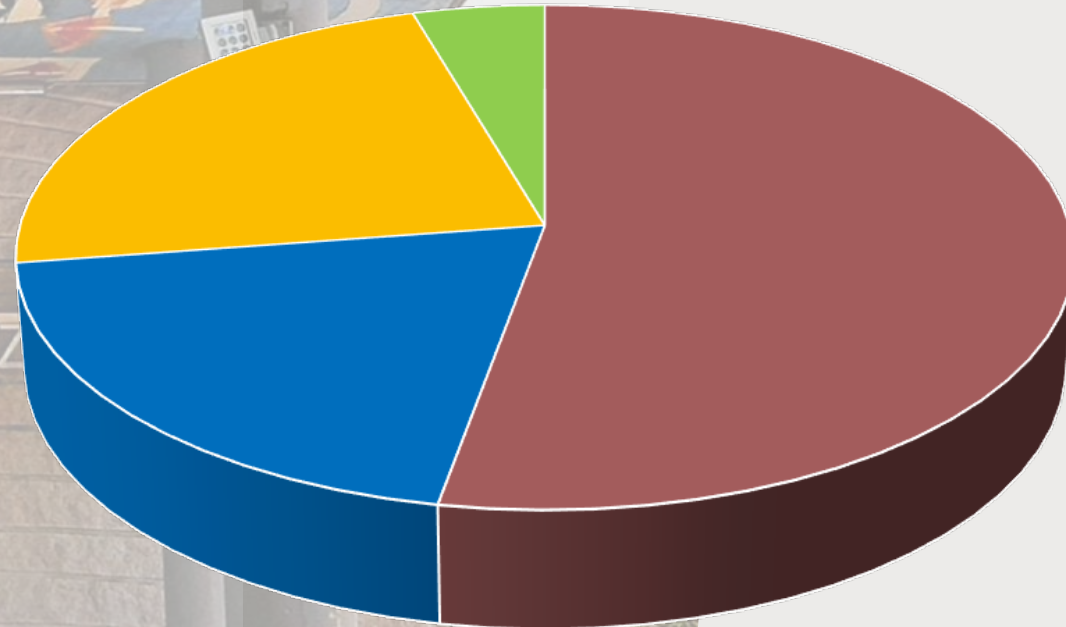


PROFILE OF PATIENTS AT M. HOSPITAL OF OZA



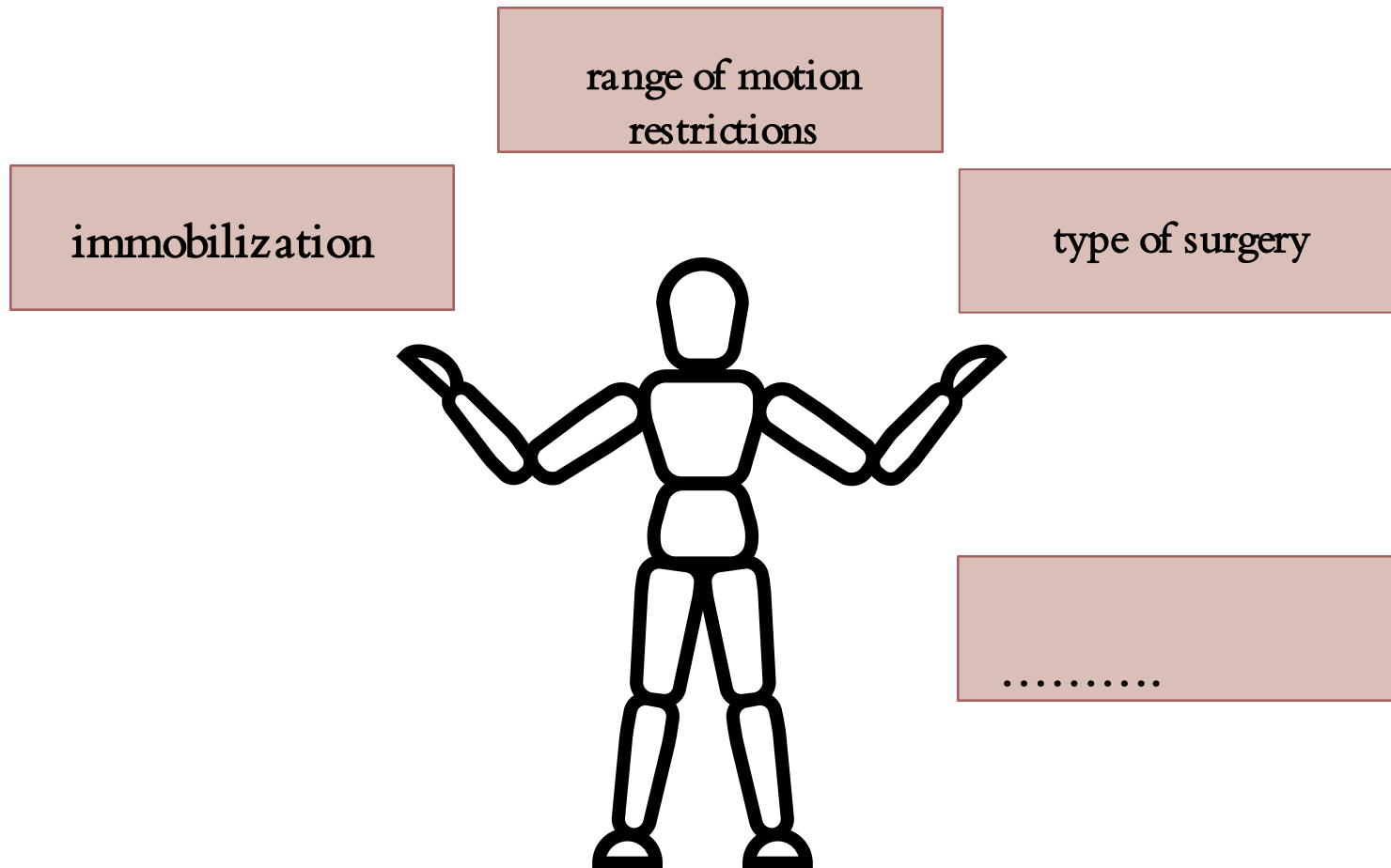
■ R. CUFF REPAIR ■ PROSTHESIS ■ FRACTURES ■ LUXATION

PROFILE OF PATIENTS AT M. HOSPITAL OF OZA



■ R CUFF REPAIR ■ PROSTHESIS ■ FRACTURES ■ LUXATION

PHYSIOTHERAPY IN ROTATOR CUFF REPAIR: VARIABILITY OF FACTORS



PHYSIOTHERAPY IN ROTATOR CUFF REPAIR

There is not strong
evidence on...

PHYSIOTHERAPY IN ROTATOR CUFF REPAIR

*There is not strong
evidence on...*

More studies are
needed to increase
the evidence on...

PHYSIOTHERAPY IN ROTATOR CUFF REPAIR

There is not strong
evidence on...

More studies are
needed to increase
the evidence on...

Guidelines
Meta-analysis
Systematic reviews

PHYSIOTHERAPY IN ROTATOR CUFF REPAIR

International
consensus that
suggests specific
therapeutic
interventions

More studies are
needed to increase
the evidence on...

Guidelines
Meta-análisis
Systematic reviews

PHYSIOTHERAPY IN ROTATOR CUFF REPAIR

International
consensus that
suggests specific
therapeutic
interventions

Published on the
basis of the best
available evidence...

Reduce the
variability

Look for patterns of
practice

Search Results

Click on a title to view details of that record. If your search has returned many records you may need to move to the next page (at the top or bottom of the list of records). To display a list of records from one or a series of searches, click on *Select* and then *Display Selected Records*

Found 42 records

Title	Method	Score (/10)	Select Record
Rehabilitation following rotator cuff repair: a work of the commission rehabilitation of the German Society of Shoulder and Elbow Surgery eV (DVSE) in collaboration with the German Association for Physiotherapy (ZVK) eV, the Association Physical Therapy, Association for Physical Professions (VPT) eV and the Section Rehabilitation-Physical Therapy of the German Society for Orthopaedics and Trauma eV (DGOU)	practice guideline	N/A	Select
The effect of rehabilitation time on functional recovery after arthroscopic rotator cuff repair: a systematic review and meta-analysis	systematic review	N/A	Select
Conservative management versus surgical repair in degenerative rotator cuff tears: a systematic review and meta-analysis	systematic review	N/A	Select

Rehabilitation following rotator cuff repair

A work of the Commission Rehabilitation of the German Society of Shoulder and Elbow Surgery e. V. (DVSE) in collaboration with the German Association for Physiotherapy (ZVK) e. V., the Association Physical Therapy, Association for Physical Professions (VPT) e. V. and the Section Rehabilitation—Physical Therapy of the German Society for Orthopaedics and Trauma e. V. (DGOU)

This is an English translation of the publication *Rehabilitation nach Rotatorenmanschettenrekonstruktion. Eine Arbeit der Kommission Rehabilitation der Deutschen Vereinigung für Schulter und Ellenbogenchirurgie e. V. (DVSE) in Zusammenarbeit mit dem Deutschen Verband für Physiotherapie (ZVK) e. V., dem Verband Physikalische Therapie, Vereinigung für die physiotherapeutischen Berufe (VPT) e. V. und der Sektion Rehabilitation—Physikalische Therapie der Deutschen Gesellschaft für Orthopädie und Unfallchirurgie e. V. (DGOU) Obere Extremität 2016, 11:16–31 DOI <https://doi.org/10.1007/s11678-015-0346-9>.*

Introduction

Tears of the rotator cuff tendons (RC) are a frequent cause of shoulder complaints [44]. Improvement in terms of strength, movement and pain reduction can be expected after rotator cuff repair surgery [27]. Unfortunately, there is no consensus on the rehabilitation protocols and contents following the surgical procedure [24]. Conventional rehabilitation protocols after reconstruction of the rotator cuff (RCR) often vary considerably,

even in terms of basic content such as the length of immobilization, movement limitations and whether or not an orthosis should be used. There still is a lack of evidence for many common forms of rehabilitation contents, although in many health care systems evidence-based medicine has gained ground. In Germany, among others, the guideline program of the German Pension Insurance Association focused on this conflict [23, 25].



ELSEVIER

CONSENSUS STATEMENT

The American Society of Shoulder and Elbow Therapists' consensus statement on rehabilitation following arthroscopic rotator cuff repair



Charles A. Thigpen, PT, PhD, ATC^{a,b,*}, Michael A. Shaffer, MSPT, OCS, ATC^c,
Bryce W. Gaunt, PT, SCS^d, Brian G. Leggin, PT, MS, OCS^e, Gerald R. Williams, MD^f,
Reg B. Wilcox III, PT, DPT, MS, OCS^g

^aATI Physical Therapy, Greenville, SC, USA

^bCenter for Effectiveness in Orthopedic Research, University of South Carolina, Greenville, SC, USA

^cDepartment of Rehabilitation Therapies, University of Iowa Hospitals and Clinics, Iowa City, IA, USA

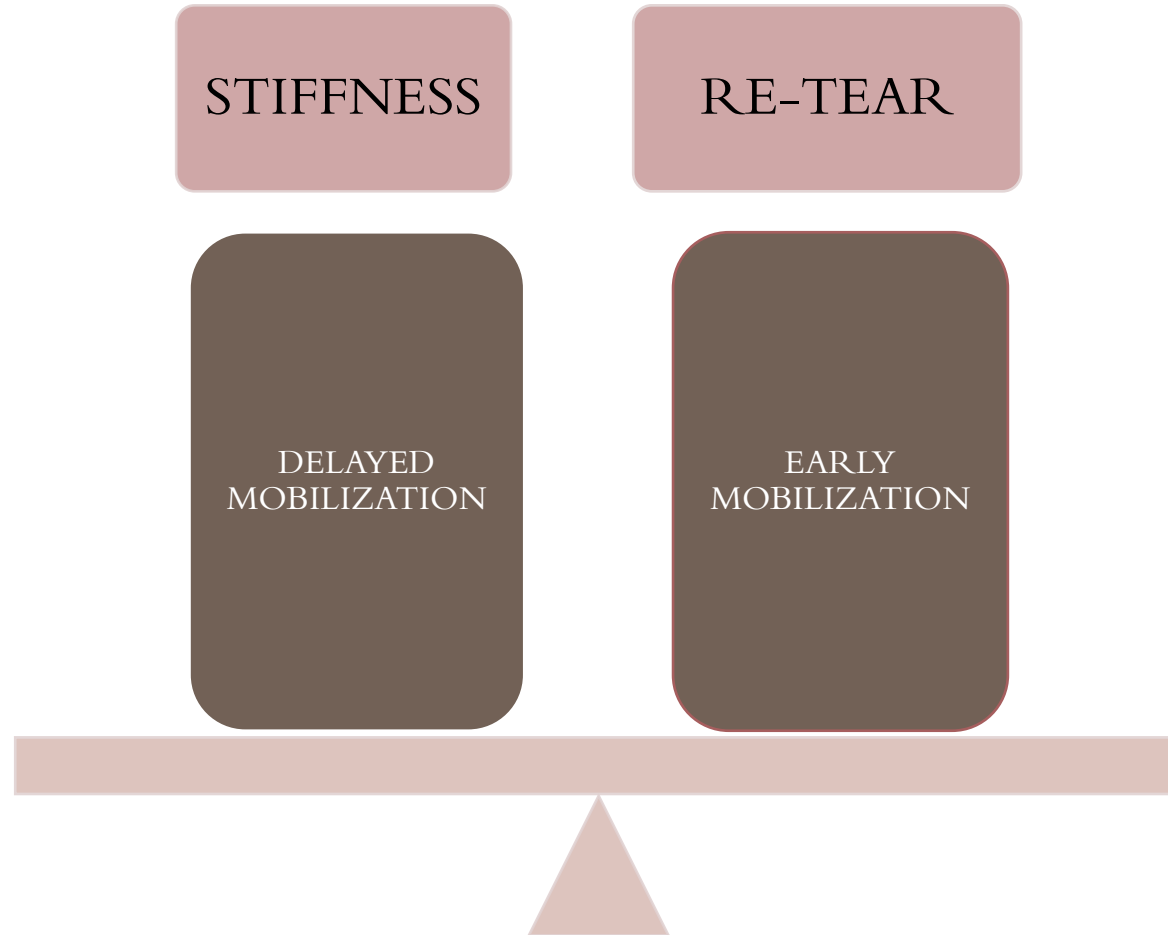
^dHuman Performance Rehabilitation Centers at St Francis Rehabilitation Center, Columbus, GA, USA

^eGood Shepherd Penn Partners, Penn Therapy and Fitness, Philadelphia, PA, USA

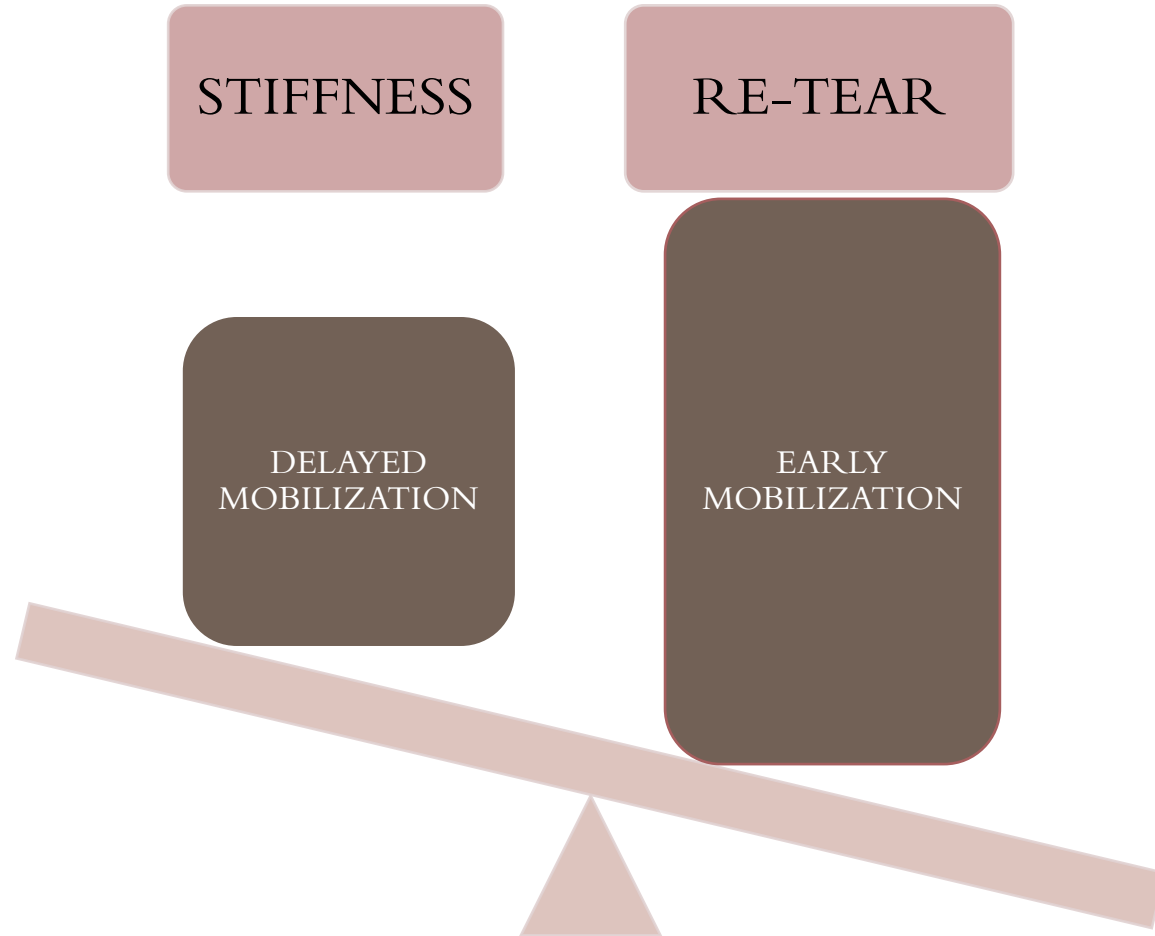
^fRothman Institute, Jefferson Medical College, Philadelphia, PA, USA

^gDepartment of Rehabilitation Services, Brigham & Women's Hospital, Boston, MA, USA

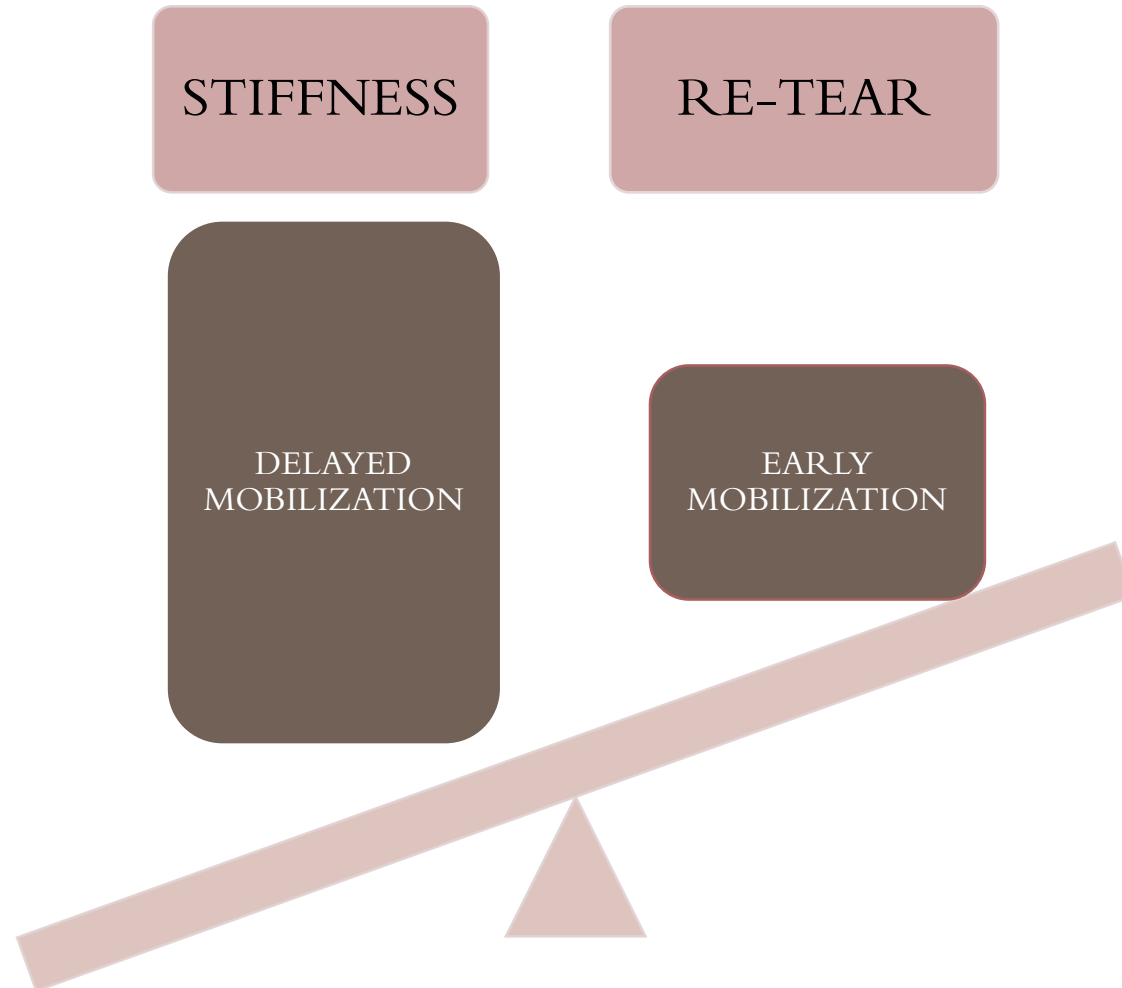
PHYSICAL THERAPY IN ROTATOR CUFF REPAIR.
EVIDENCE-BASED
THE DILEMMA



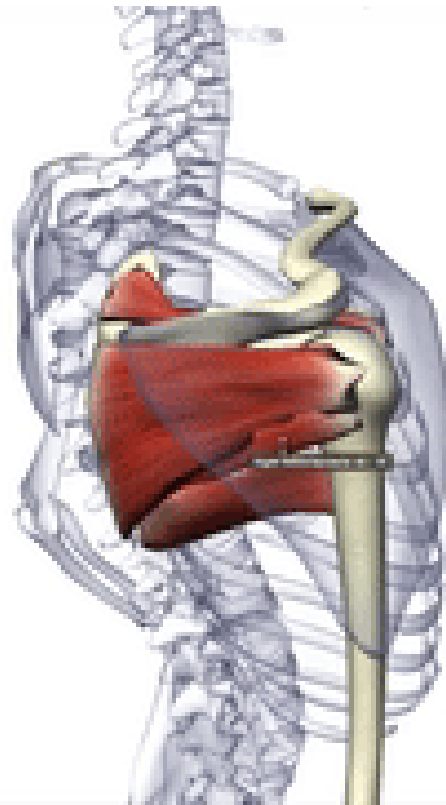
*PHYSICAL THERAPY IN ROTATOR CUFF REPAIR.
EVIDENCE-BASED
THE DILEMMA*



*PHYSIOTHERAPY IN ROTATOR CUFF REPAIR.
EVIDENCE-BASED
THE DILEMMA*

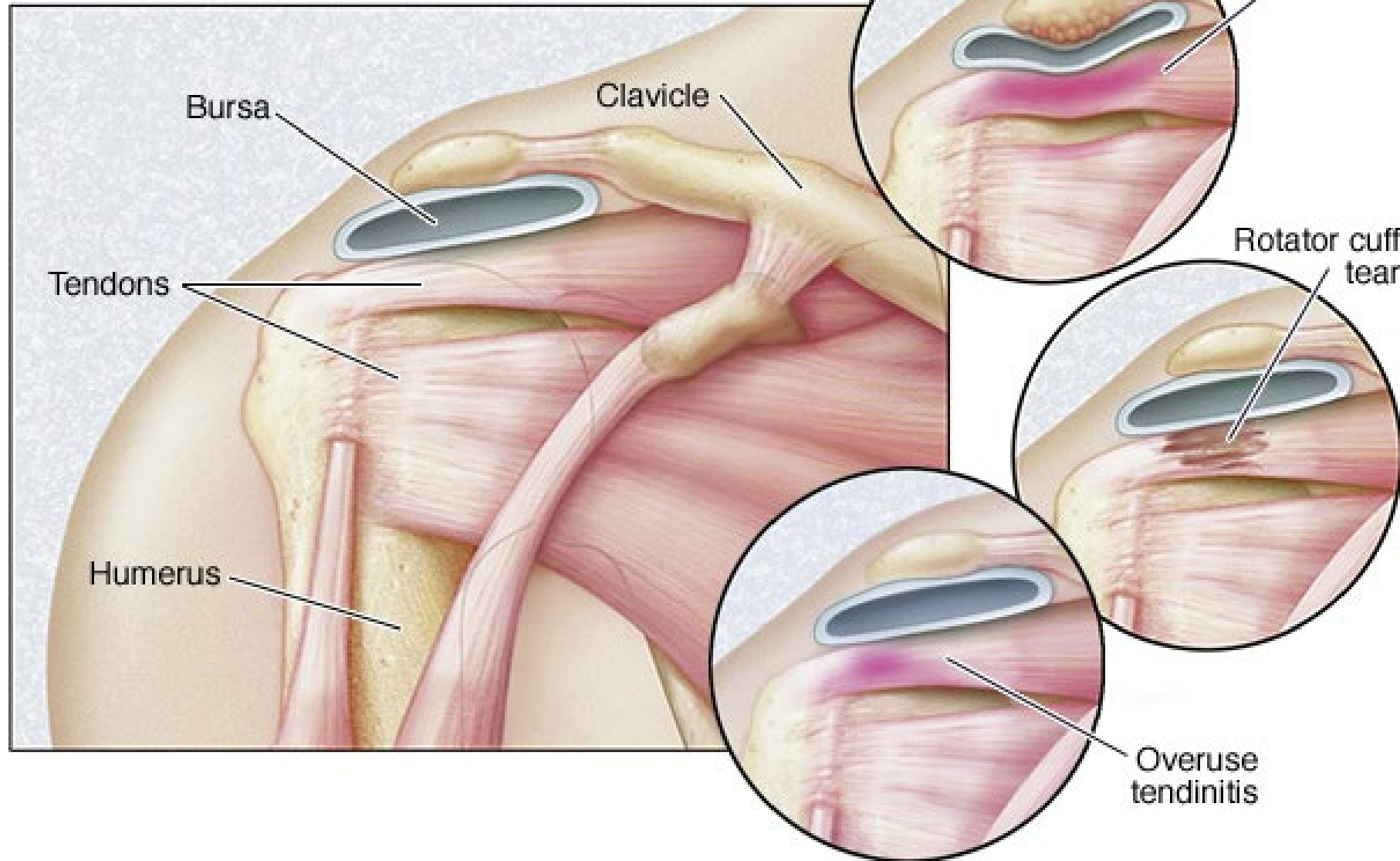


ROTATOR CUFF ANATOMY



MakeAGIF.com

Rotator cuff





PHYSIOTHERAPY IN
ROTATOR CUFF
REPAIR.
EVIDENCE-BASED

- Rotator cuff tears affect approximately 30% of the population aged older than 60 years, and the rate doubles to nearly 60% of the population by age 80 years.
- Spain is the sixth country in the EU with the oldest population. As you can imagine, it will be an increasingly frequent pathology in the future.

CONSENSUS AMERICAN SOCIETY OF SHOULDER AND ELBOW

2 weeks

- Strict immobilization of shoulder

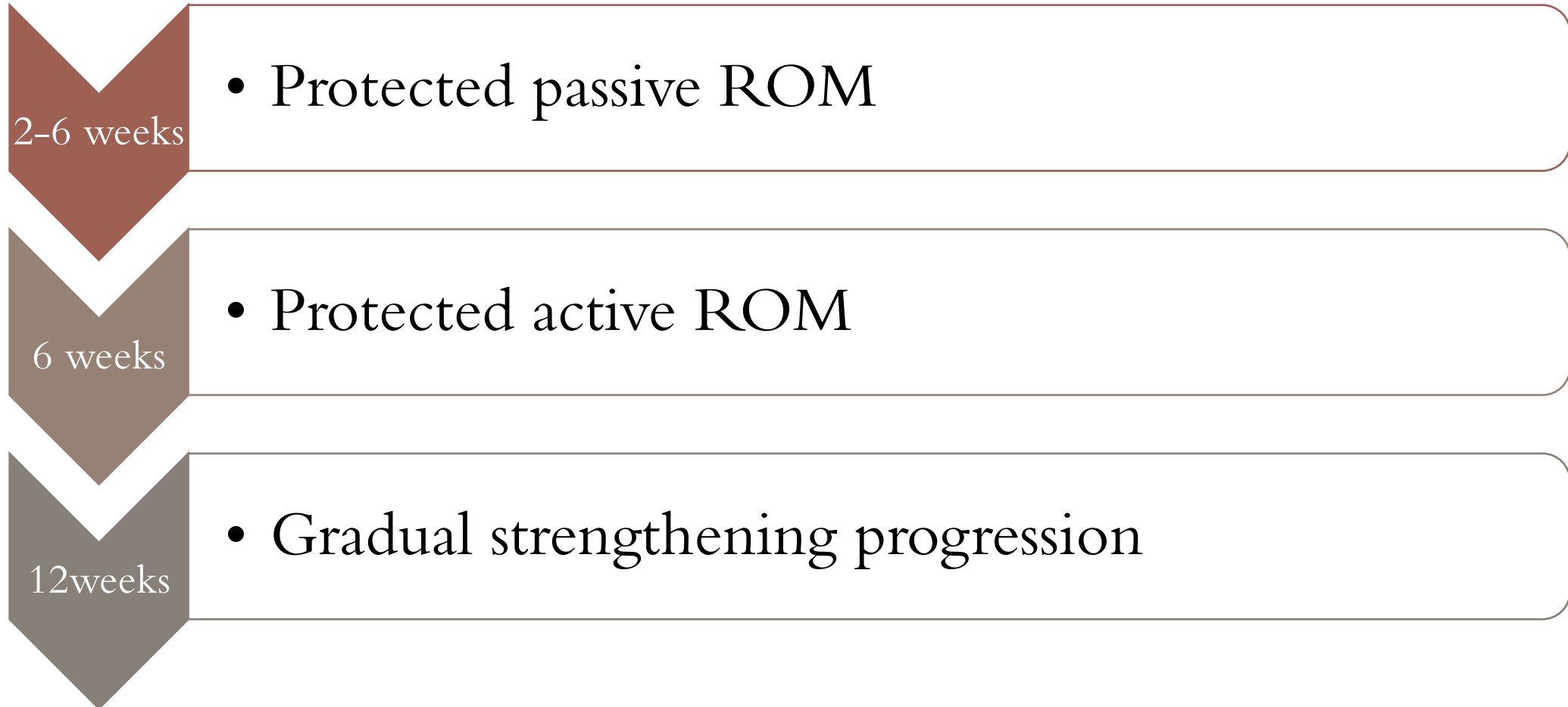
2-6 weeks

- Protected passive ROM

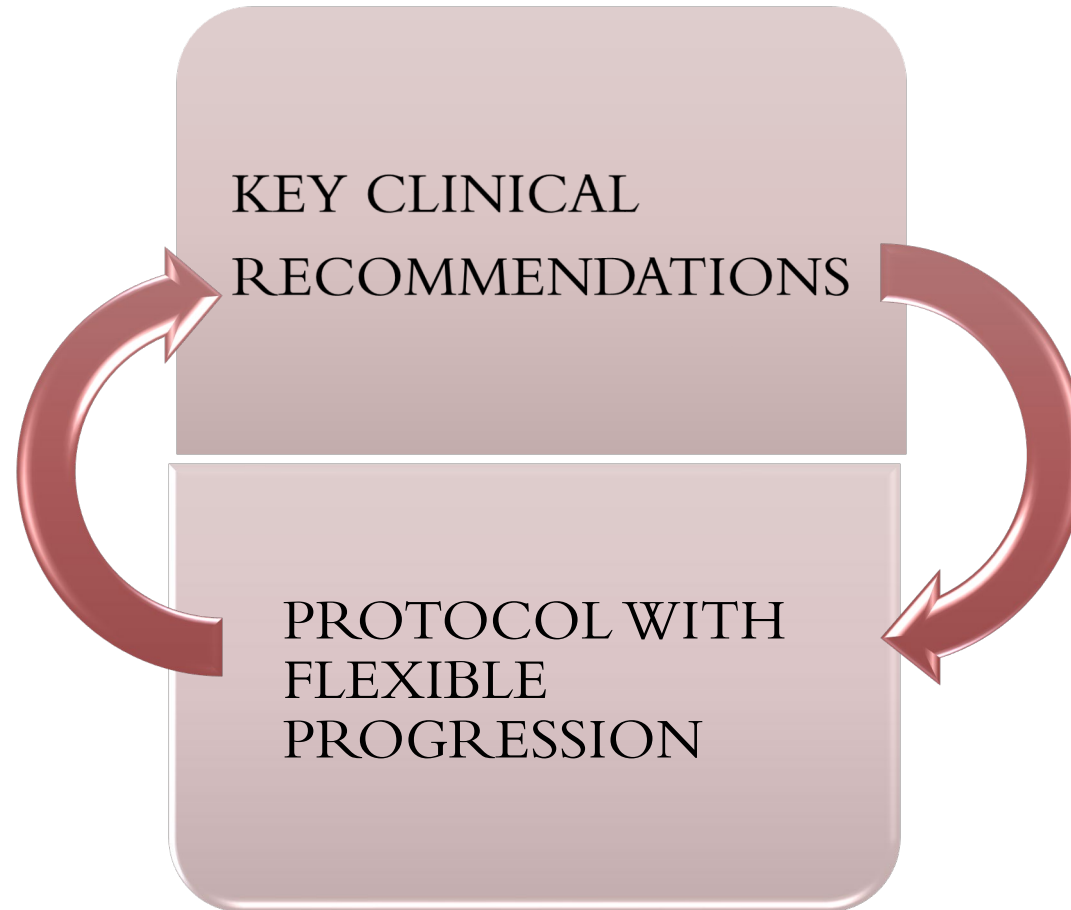
6 weeks

- Protected active ROM

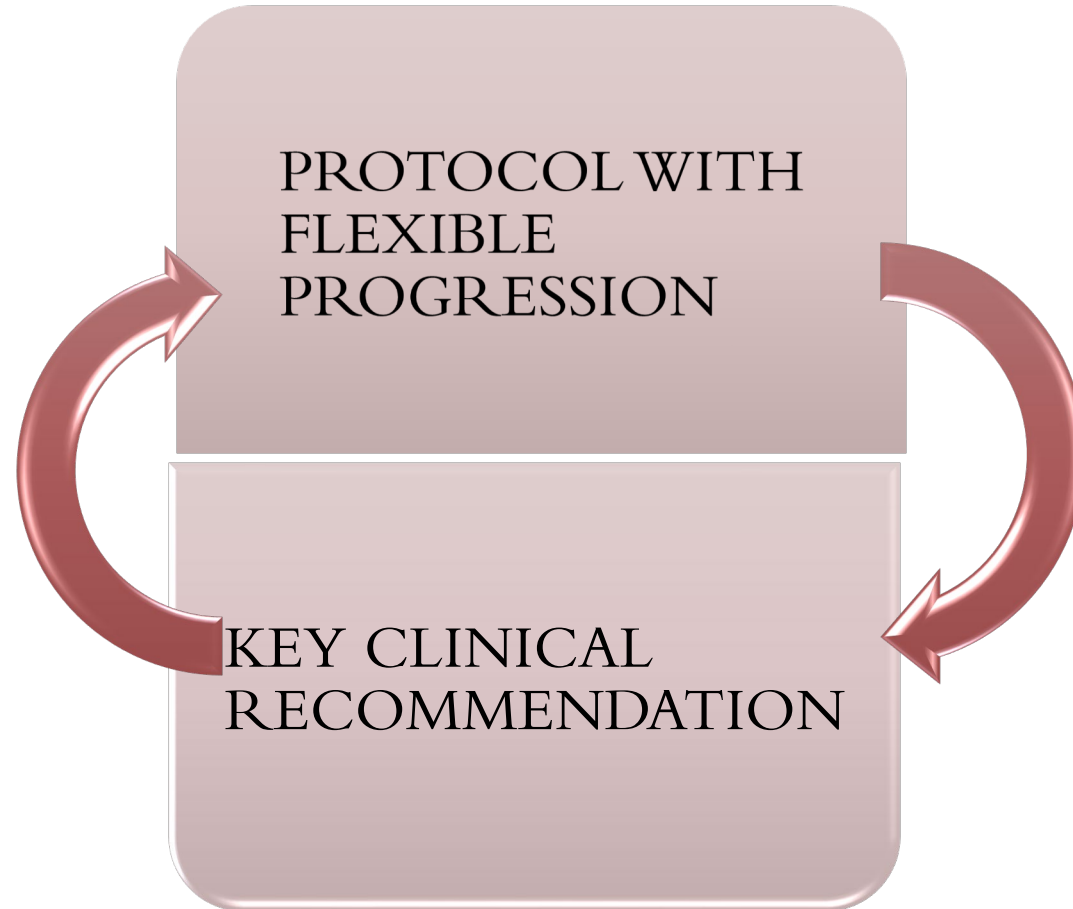
CONSENSUS AMERICAN SOCIETY OF SHOULDER
AND ELBOW



CONSENSUS AMERICAN SOCIETY OF SHOULDER
AND ELBOW



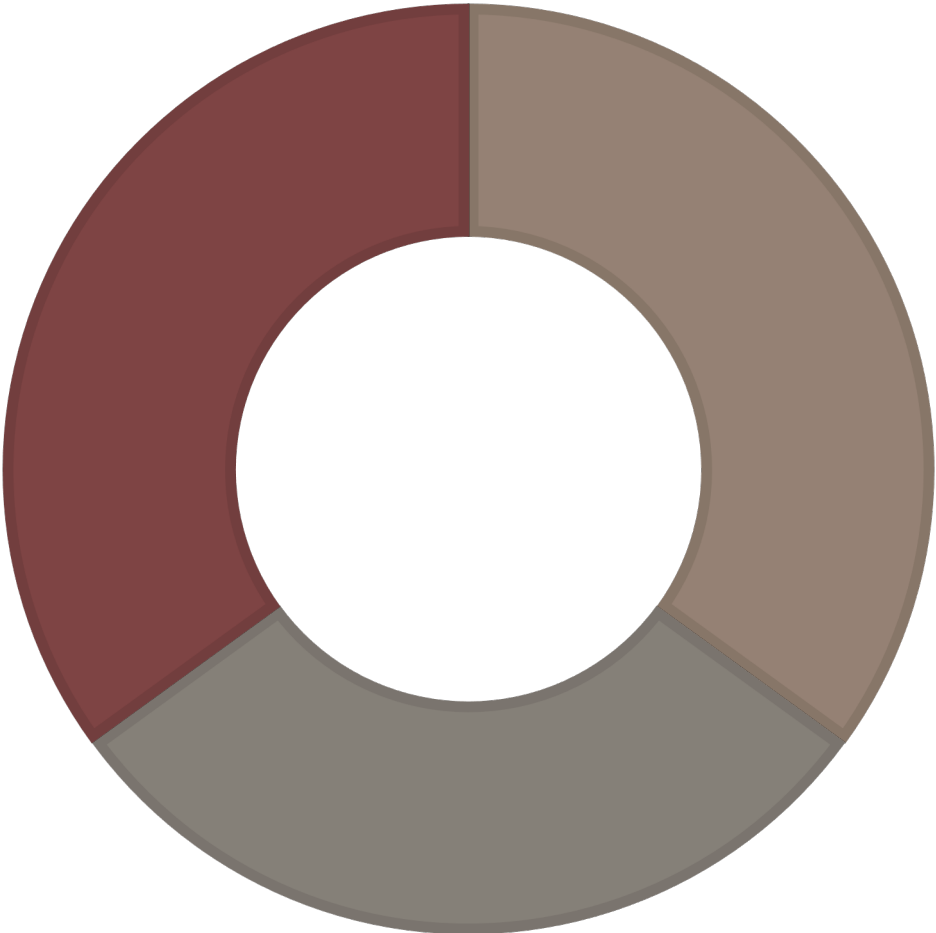
CONSENSUS AMERICAN SOCIETY OF SHOULDER
AND ELBOW



VARIABLES THAT AFFECT THE HEALING



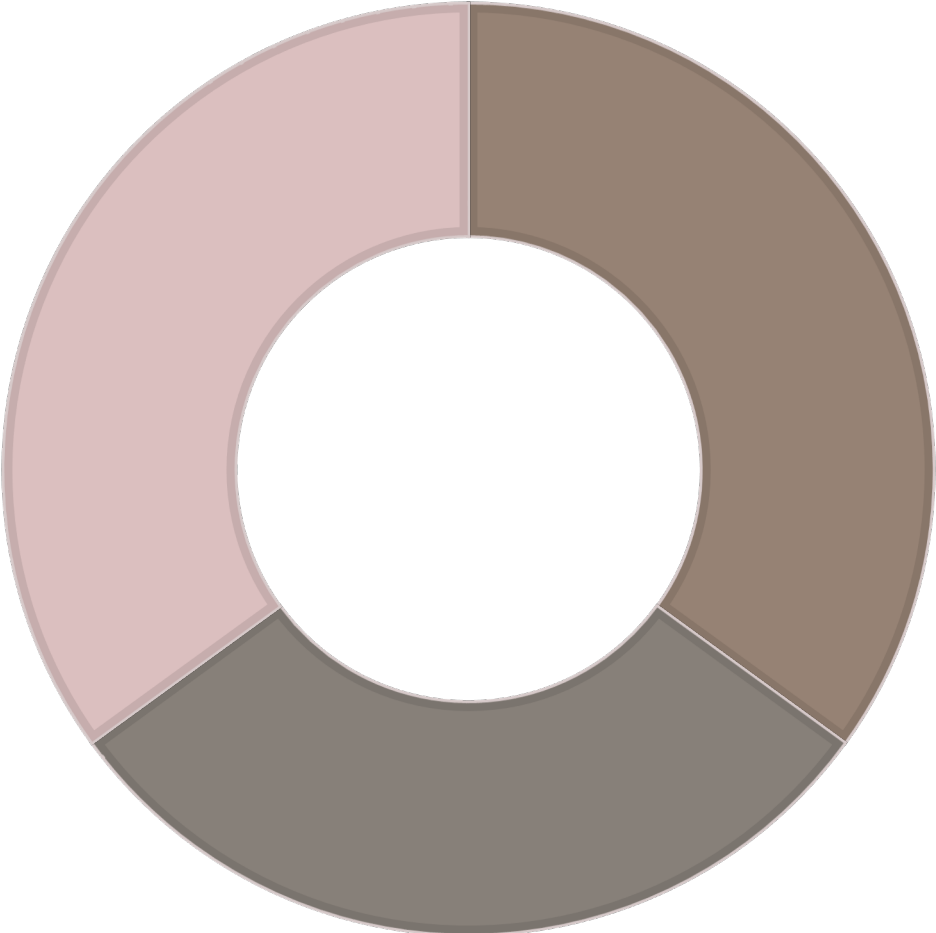
AGE



VARIABLES THAT AFFECT THE HEALING



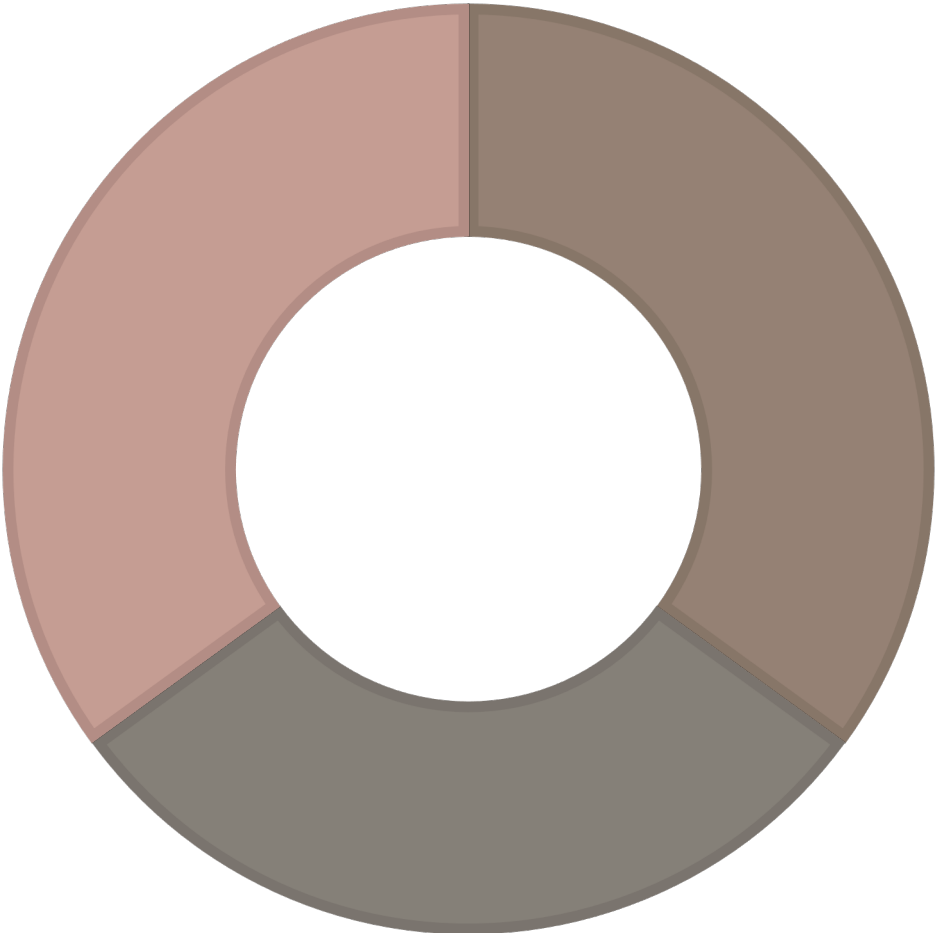
ACTIVITY
LEVEL



VARIABLES THAT AFFECT THE HEALING



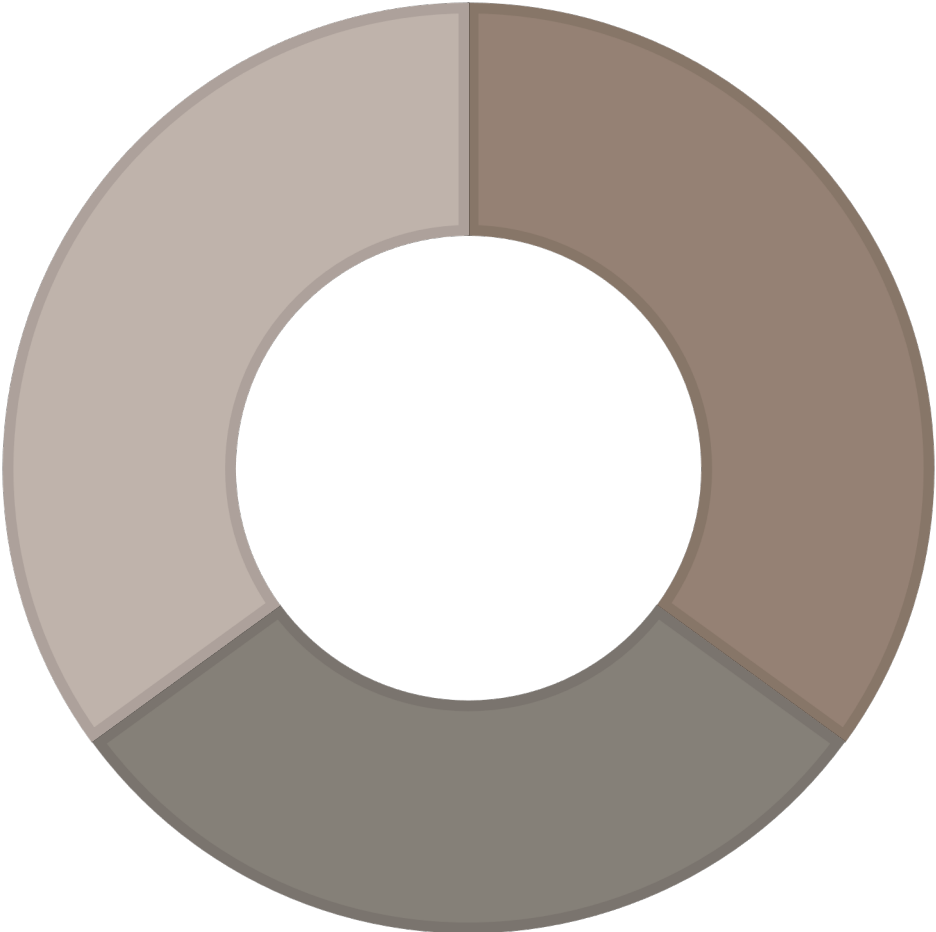
DURATION
OF
SYMPTOMS



VARIABLES THAT AFFECT THE HEALING



EXTENT OF
THE TEAR



PHASES OF POSTOPERATIVE EXERCISES



PHASE 1



PHASE 2



PHASE 3



PHASE 4

PHASES OF POSTOPERATIVE
EXERCISES



PHASE 1



PHASE 2



PHASE 3



PHASE 4

PHASES OF POSTOPERATIVE
EXERCISES



PHASE 1



PHASE 2



PHASE 3



PHASE 4

PHASES OF POSTOPERATIVE EXERCISES



PHASE 1



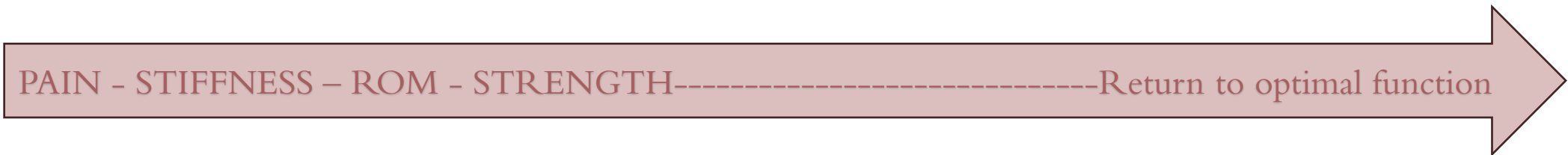
PHASE 2



PHASE 3



PHASE 4



SCALES TO PROGRESS INTO THE PHASES



- Scale ASES
- Numeric Pain Rating Scale
- Penn Shoulder Score
- Dash Questionnaire

**The American Shoulder and Elbow Surgeons
Standardized Shoulder Assessment and
Shoulder Score Index**

Name _____
 Date _____
 Age _____ Hand Dominance R___ L___ Ambi___ Sex M___ F___
 Diagnosis _____ Initial Assess? Y___ N___
 Procedure/Date _____ Follow-up M___ Y___

PATIENT SELF-EVALUATION

Are you having pain in your shoulder (circle correct answer) Yes___ No___
 Mark where your pain is

Do you have pain in your shoulder at night? Yes___ No___
 Do you take pain medication (aspirin, Advil, Tylenol etc.)? Yes___ No___
 Do you take narcotic pain medication (codeine or stronger)? Yes___ No___
 How many pills do you take each day (average)? _____ pills
 How bad is your pain today (mark line)?

 No pain at all Pain as bad as it can be

Does your shoulder feel unstable (as if it is going to dislocate)? Yes___ No___
 How unstable is your shoulder (mark line)?

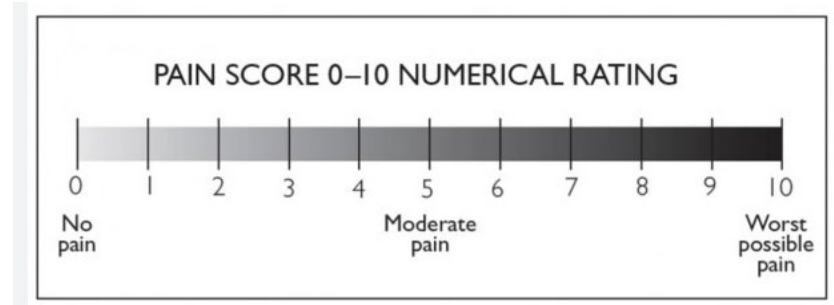
 Very stable Very Unstable

Circle the number that indicates your ability to do the following activities:
 0 = unable to do; 1 = very difficult to do; 2 = somewhat difficult; 3 = not difficult

Activity	Right Arm	Left Arm
1. Put on a coat	0 1 2 3	0 1 2 3
2. Sleep on your painful or affected side	0 1 2 3	0 1 2 3
3. Wash back/do up bra in back	0 1 2 3	0 1 2 3
4. Manage toileting	0 1 2 3	0 1 2 3
5. Comb hair	0 1 2 3	0 1 2 3
6. Reach a high shelf	0 1 2 3	0 1 2 3
7. Lift 10 lb above shoulder	0 1 2 3	0 1 2 3
8. Throw a ball overhand	0 1 2 3	0 1 2 3
9. Do usual work - List: _____	0 1 2 3	0 1 2 3
10. Do usual sport - List: _____	0 1 2 3	0 1 2 3

SCALES TO PROGRESS INTO THE PHASES

- Scale ASES
- Numeric Pain Rating Scale
- Penn Shoulder Score
- Dash Questionnaire



SCALES TO PROGRESS INTO THE PHASES

- Scale ASES
- Numeric Pain Rating Scale
- Penn Shoulder Score
- Dash Questionnaire

Please circle the number that best describes the level of difficulty you might have performing each activity	No difficulty	Some difficulty	Much difficulty	Can't do at all	Did not do before injury
1. Reach the small of your back to tuck in your shirt with your hand	3	2	1	0	X
2. Wash the middle of your back/hock bra	3	2	1	0	X
3. Perform necessary toileting activities	3	2	1	0	X
4. Wash the back of opposite shoulder	3	2	1	0	X
5. Comb hair	3	2	1	0	X
6. Place hand behind head with elbow held straight out to the side	3	2	1	0	X
7. Dress self (including put on coat and pull shirt off overhead)	3	2	1	0	X
8. Sleep on affected side	3	2	1	0	X
9. Open a door with affected arm	3	2	1	0	X
10. Carry a bag of groceries with affected arm	3	2	1	0	X
11. Carry a briefcase/small suitcase with affected arm	3	2	1	0	X
12. Place a soup can (1-2 lb) on a shelf at shoulder level without bending elbow	3	2	1	0	X
13. Place a one gallon container (8-10 lb) on a shelf at shoulder level without bending elbow	3	2	1	0	X
14. Reach a shelf above your head without bending your elbow	3	2	1	0	X
15. Place a soup can (1-2 lb) on a shelf overhead without bending your elbow	3	2	1	0	X
16. Place a one gallon container (8-10 lb) on a shelf overhead without bending your elbow	3	2	1	0	X
17. Perform usual sport/hobby	3	2	1	0	X
18. Perform household chores (cleaning, laundry, cooking)	3	2	1	0	X
19. Throw overhand/swim/overhead racquet sports (circle all that apply to you)	3	2	1	0	X
20. Work full-time at your regular job	3	2	1	0	X

SCORING
 Total of columns = ____ (a)
 Number of Xs x 3 = ____ (b), 60 - ____ (b) = ____ (c) (if no Xs are circled, function score = total of columns)
 Function Score = ____ (a) + ____ (c) = ____ x 60 ____/60

SCALES TO PROGRESS INTO THE PHASES

- Scale ASES
- Numeric Pain Rating Scale
- Penn Shoulder Score
- Dash Questionnaire

THE **DASH**

INSTRUCTIONS

This questionnaire asks about your symptoms as well as your ability to perform certain activities.

Please answer every question, based on your condition in the last week, by circling the appropriate number.

If you did not have the opportunity to perform an activity in the past week, please make your best estimate on which response would be the most accurate.

It doesn't matter which hand or arm you use to perform the activity; please answer based on your ability regardless of how you perform the task.



PHASE OF POSTOPERATIVE EXERCISES

PHASE 1 0-6 WEEKS

- **PATIENT EDUCATION**
 - Explain nature of the surgery
 - Clarify interventions to avoid
 - Limit use of upper extremity for activities of daily life
 - Movements allowed

PHASE OF POSTOPERATIVE EXERCISES

PHASE 1
0-6 WEEKS

PASSIVE ROM
<15%
Scapular plane and
20° adb in ER

Pendulum

Foward bow

Assisted flexión

CPM in flexión

Self-assisted supine
FE

ER/IR self-
assisted with a stick

PHASE OF POSTOPERATIVE EXERCISES



PHASE 1
0-6 WEEKS

PASSIVE ROM
<15%
Scapular plane and
20° adb in ER

Foward bow

Assisted flexión

CPM in flexión

Self-assisted supine
FE

ER/IR self-
assisted with a stick

PHASE OF POSTOPERATIVE EXERCISES



PHASE 1
0-6 WEEKS

PASSIVE ROM
<15%
Scapular plane and
20° adb in ER

ed flexión

CPM in flexión

Self-assisted supine
FE

ER/IR self-
assisted with a stick

PHASE OF POSTOPERATIVE EXERCISES

PHASE 1 0-6 WEEKS



Self-assisted supine
FE

ER/IR self-
assisted with a stick

PHASE OF POSTOPERATIVE EXERCISES

PHASE 1 0-6 WEEKS



self-
with a stick

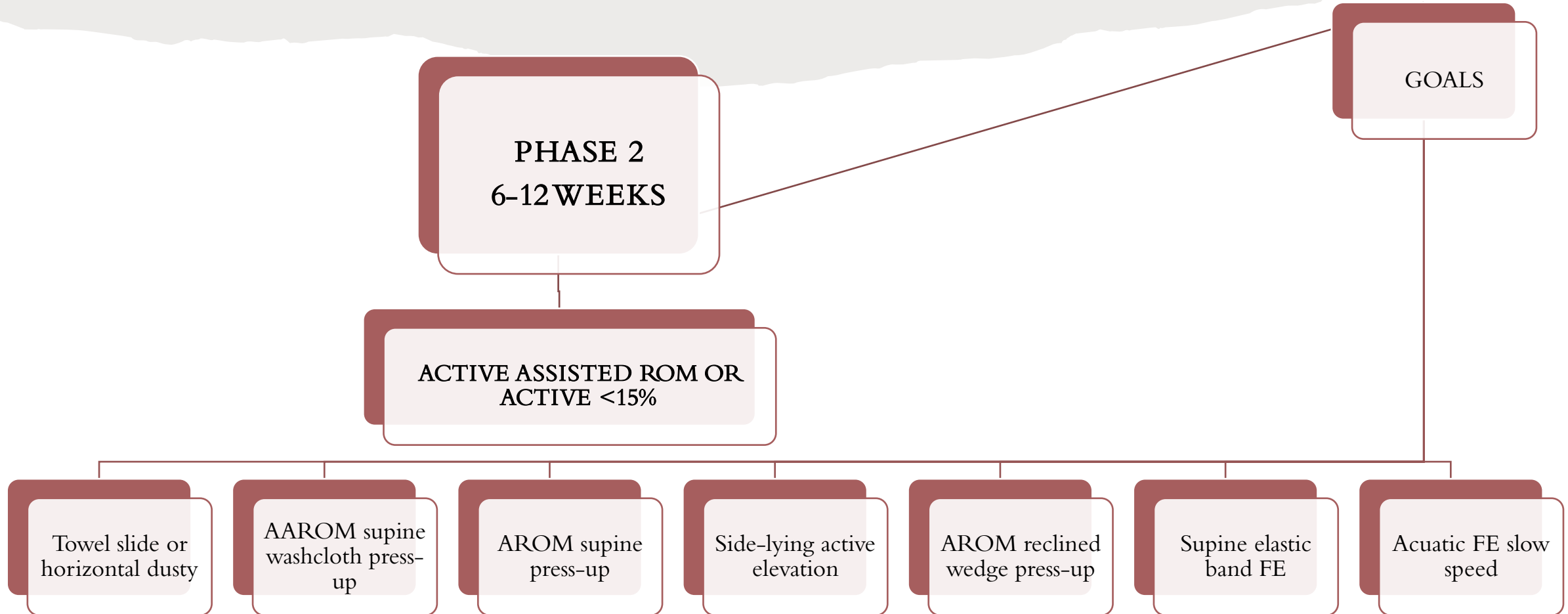
PHASE OF POSTOPERATIVE EXERCISES

PHASE 1 0-6 WEEKS



R/IR self-
d with a stick

PHASE OF POSTOPERATIVE EXERCISES



PHASE OF POSTOPERATIVE EXERCISES

PHASE 2
6-12 WEEKS

ACTIVE ASSISTED ROM
ACTIVE <15%

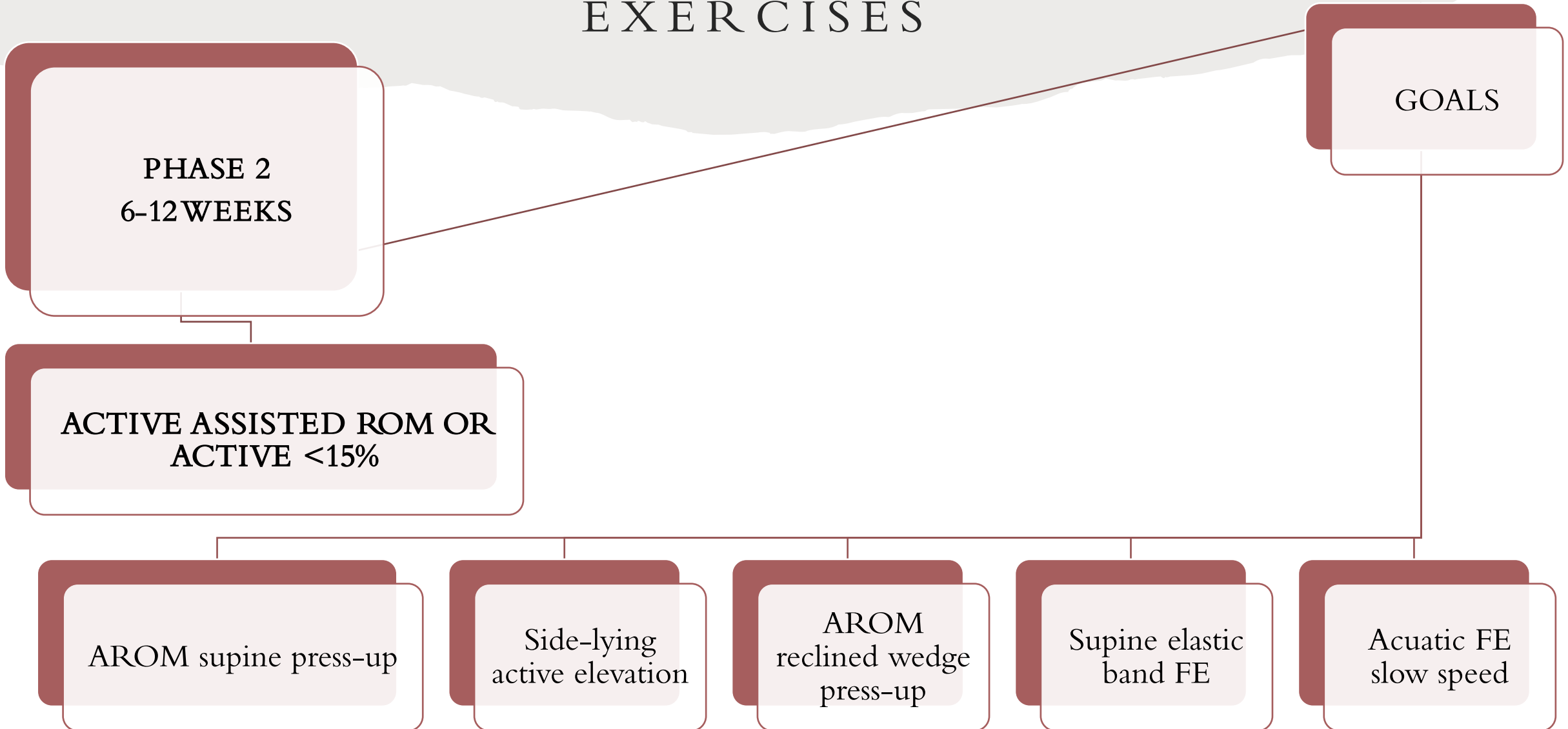
Towel slide or
horizontal dusty

AAR
wash

PHASE OF POSTOPERATIVE EXERCISES



PHASE OF POSTOPERATIVE EXERCISES



PHASE OF POSTOPERATIVE EXERCISES

PHASE 2
6-12 WEEKS

ACTIVE ASSISTED ROM C
ACTIVE <15%

Side-lying active elevation



reclined wedge
press-up

supine elastic
band FE

prone FE
slow speed

PHASE OF POS
EXERCISES

PHASE 2
6-12 WEEKS

ACTIVE ASSISTED ROM
OR ACTIVE <15%

AROM reclined
wedge press-up

GOALS

Acuatic FE
slow speed



PHASE OF P
EXERCISES

PHASE 2
6-12 WEEKS

ACTIVE ASSISTED
ROM OR ACTIVE <15%

Supine elastic
band FE

GOALS

Acuatic FE
slow speed



PHASE OF POSTOPERATIVE EXERCISES

**PHASE 2
6-12 WEEKS**

**ACTIVE ASSISTED ROM
OR ACTIVE <15%**

GOALS COMPLETED:

1. Full PROM without pain;
2. Active elevation of the arm to at least 120° without compensation;
3. Ability to perform light, non repetitive activities of daily life or work tasks without difficulty or pain
4. Muscle performance exercises should not begin until the patient's pain level is well controlled

PHASE OF POSTOPERATIVE EXERCISES

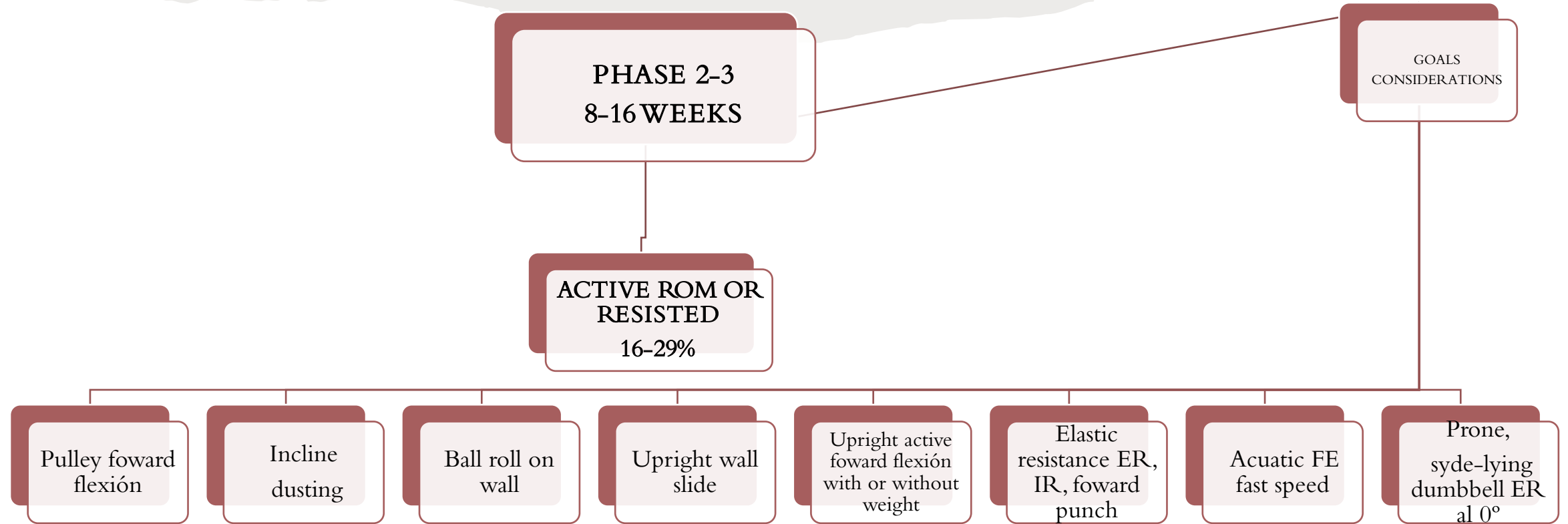
PHASE 2
6-12 WEEKS

ACTIVE ASSISTED
ROM OR ACTIVE
<15%

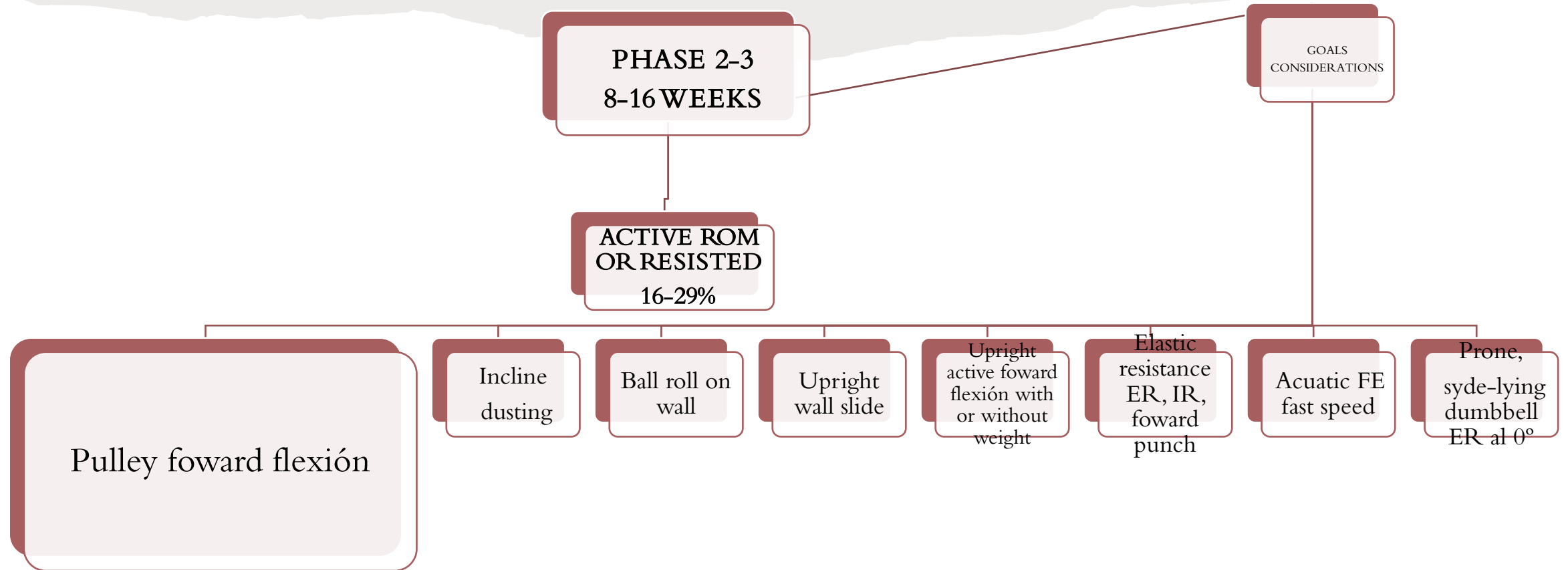
CONSIDERATIONS:

1. Maximal isometric exercises result in higher forces on the repair than AROM or concentric contractions.
Better submaximal activation.
2. Isometric exercises for the periscapular muscles, deltoid, and trapezius.
3. Scapular dyskinesia, poor core stability, or spinal hypomobility

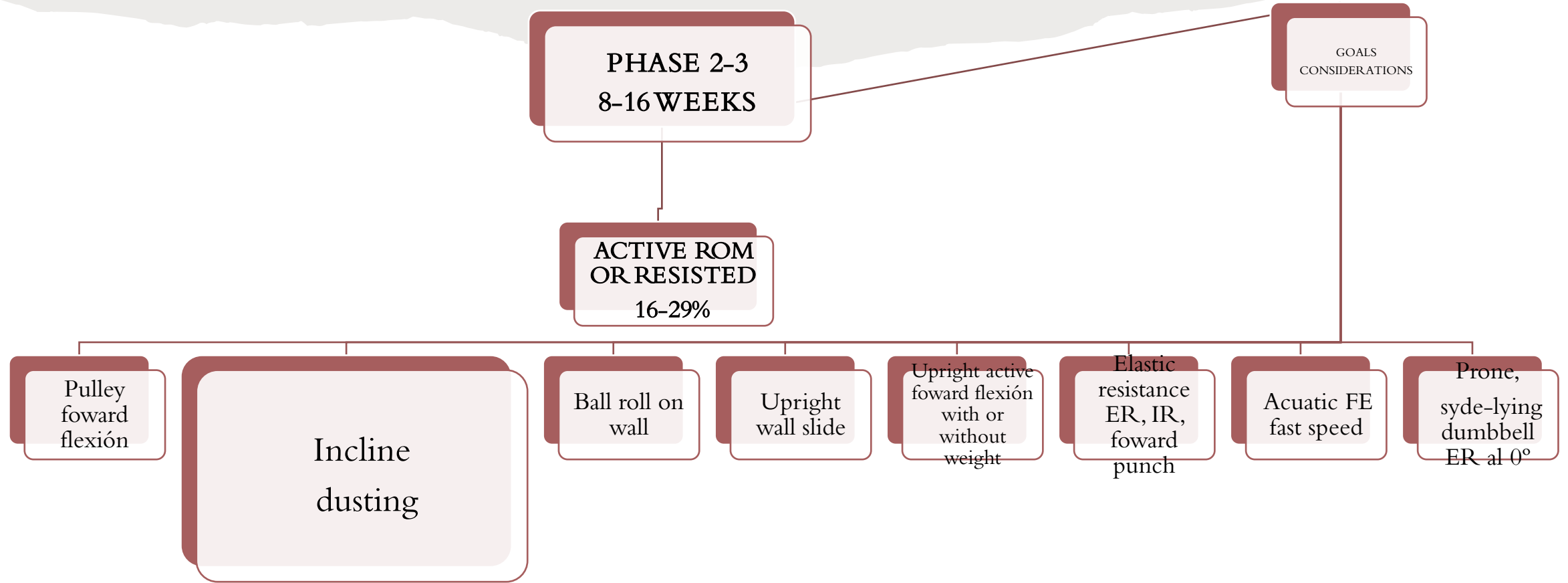
PHASE OF POSTOPERATIVE EXERCISES



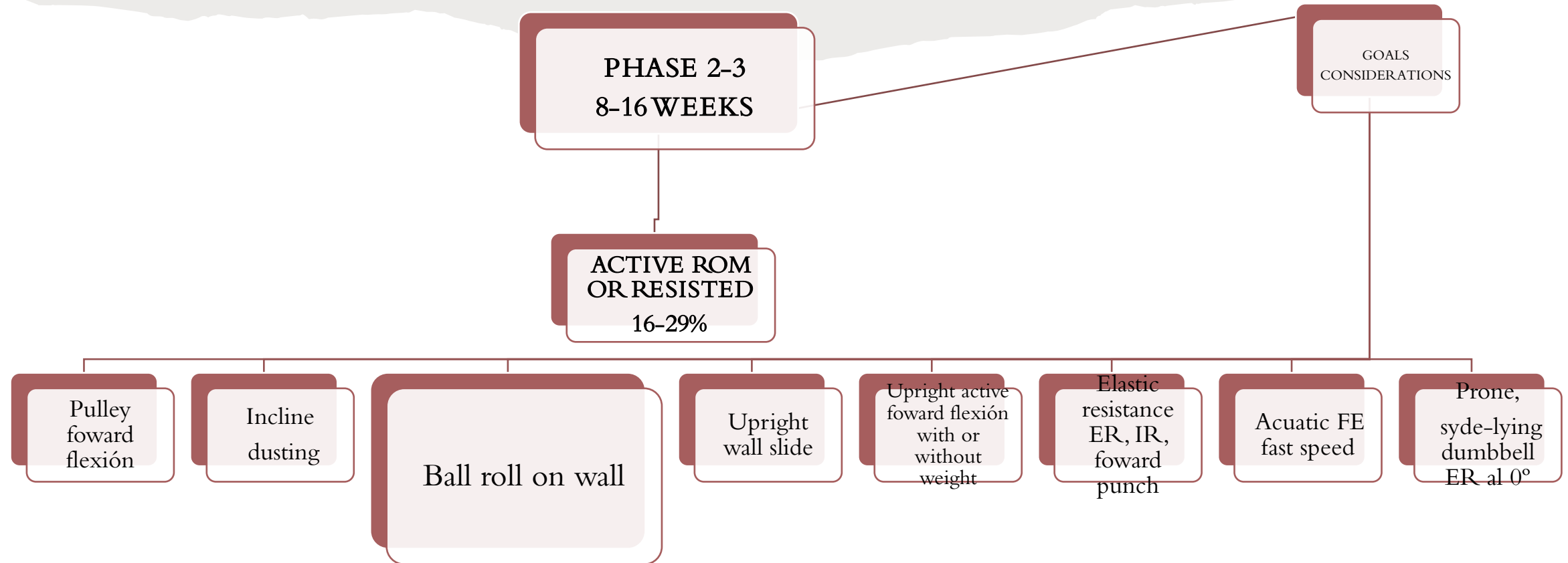
PHASE OF POSTOPERATIVE EXERCISES



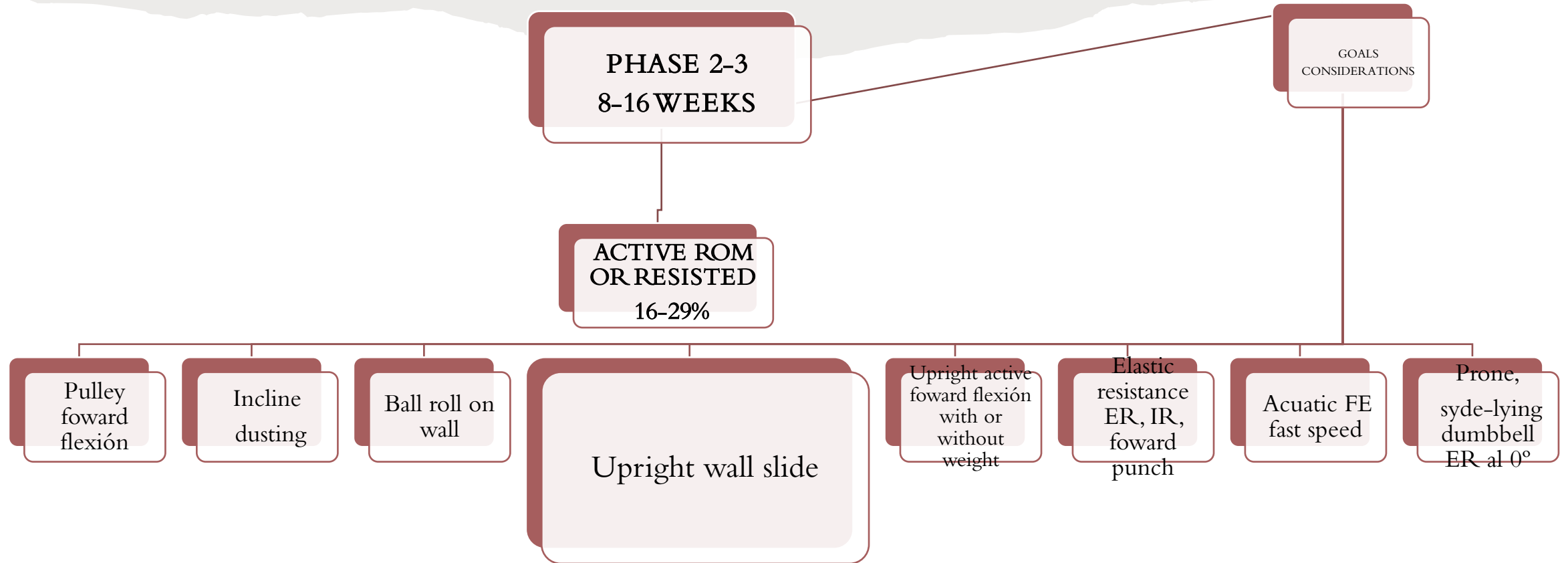
PHASE OF POSTOPERATIVE EXERCISES



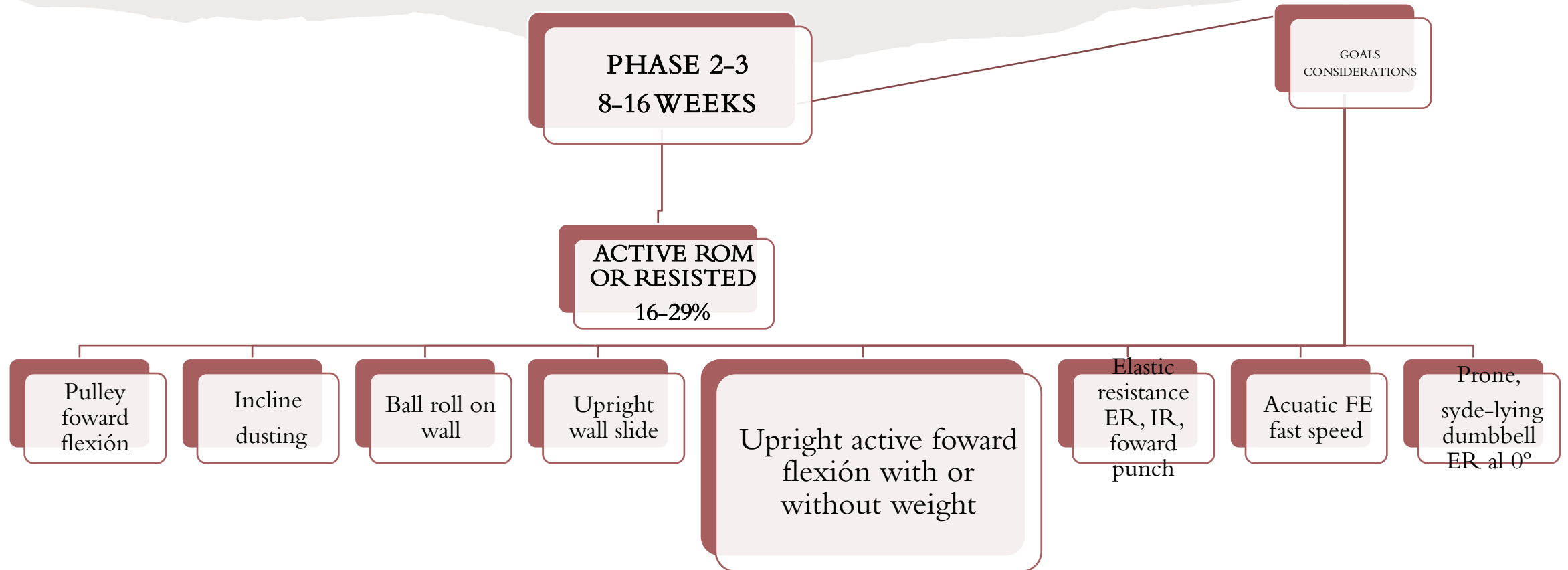
PHASE OF POSTOPERATIVE EXERCISES



PHASE OF POSTOPERATIVE EXERCISES



PHASE OF POSTOPERATIVE EXERCISES



PHASE 2-3
8-16 WEEKS

GOALS
CONSIDERATIONS

ACTIVE ROM
OR RESISTED
16-29%

Pulley
forward
flexion

Incline
dusting

Ball roll on
wall

Upright
wall slide

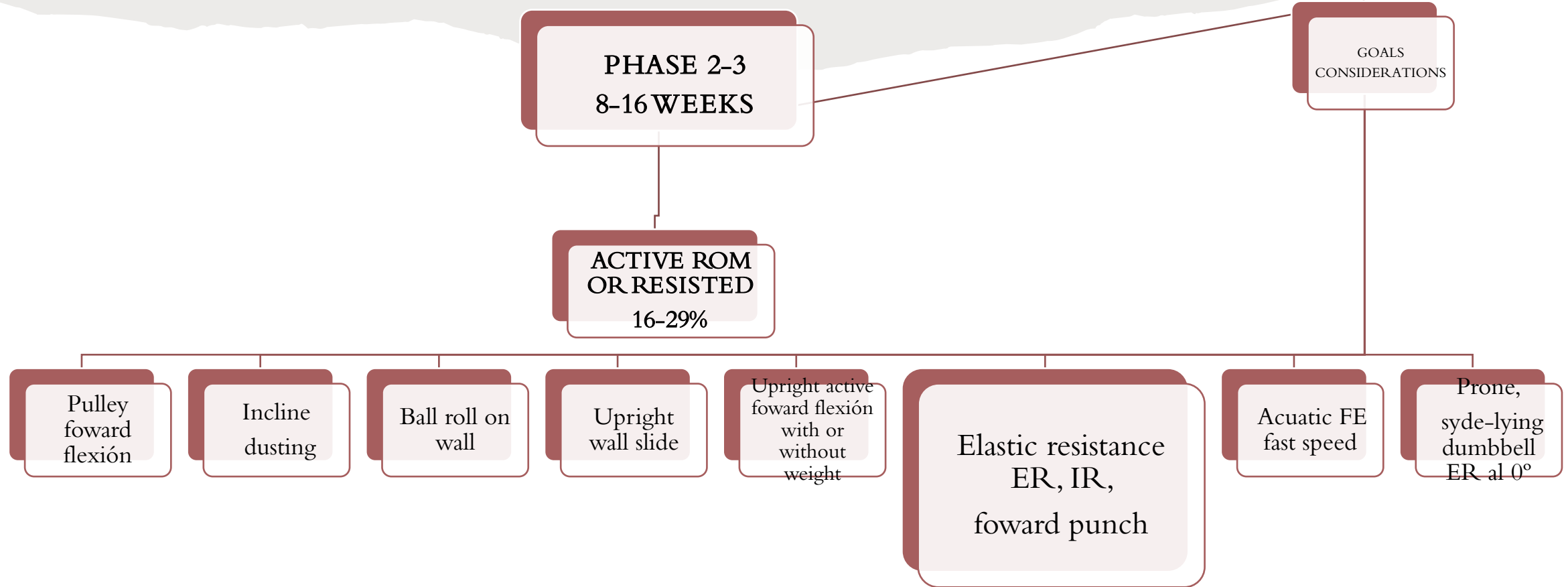
Upright active forward
flexion with or
without weight

Elastic
resistance
ER, IR,
forward
punch

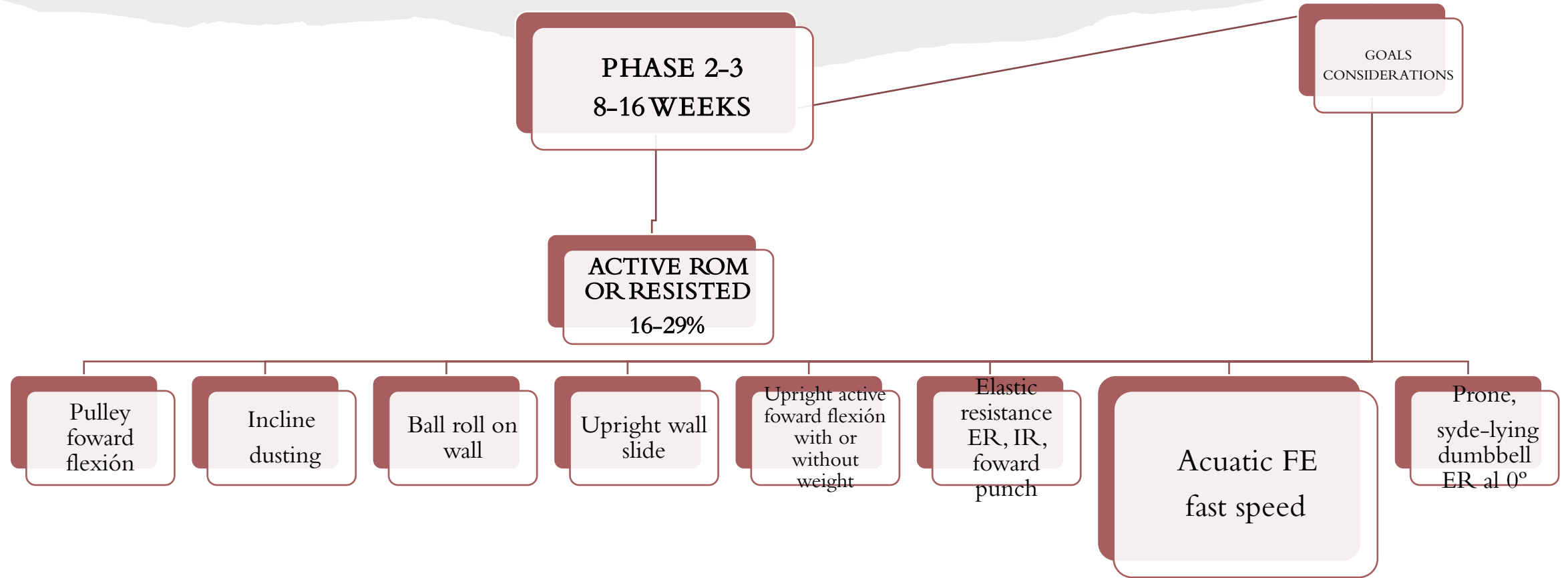
Aquatic FE
fast speed

Prone,
side-lying
dumbbell
ER at 0°

PHASE OF POSTOPERATIVE EXERCISES



PHASE OF POSTOPERATIVE EXERCISES



PHASE OF POSTOPERATIVE EXERCISES

PHASE 2-3
8-16 WEEKS

GOALS
CONSIDERATIONS

ACTIVE ROM
OR RESISTED
16-29%

Pulley
forward
flexion

Incline
dusting

Ball roll on
wall

Upright
wall slide

Upright active
forward flexion
with or
without
weight

Elastic
resistance
ER, IR,
forward
punch

Acuatic FE
fast speed

Prone,
side-lying
dumbbell ER at 0°

PHASE OF POSTOPERATIVE EXERCISES

PHASE 2-3
8-16 WEEKS

ACTIVE ROM
OR RESISTED
16-29%

GOALS

1. Pain free isotonic, elastic resistance, closed-chain...
2. Precaution, muscle activation can be more than 50%
3. Thumb-up position better subacromial clearance
4. Week 12: allow strengthening if full ROM, not more than 2 lb elbow-extended
5. For most patients, phase 3 concludes their rehabilitation

Pulley forward flexión

Incline dusting

Ball roll on wall

Upright wall slide

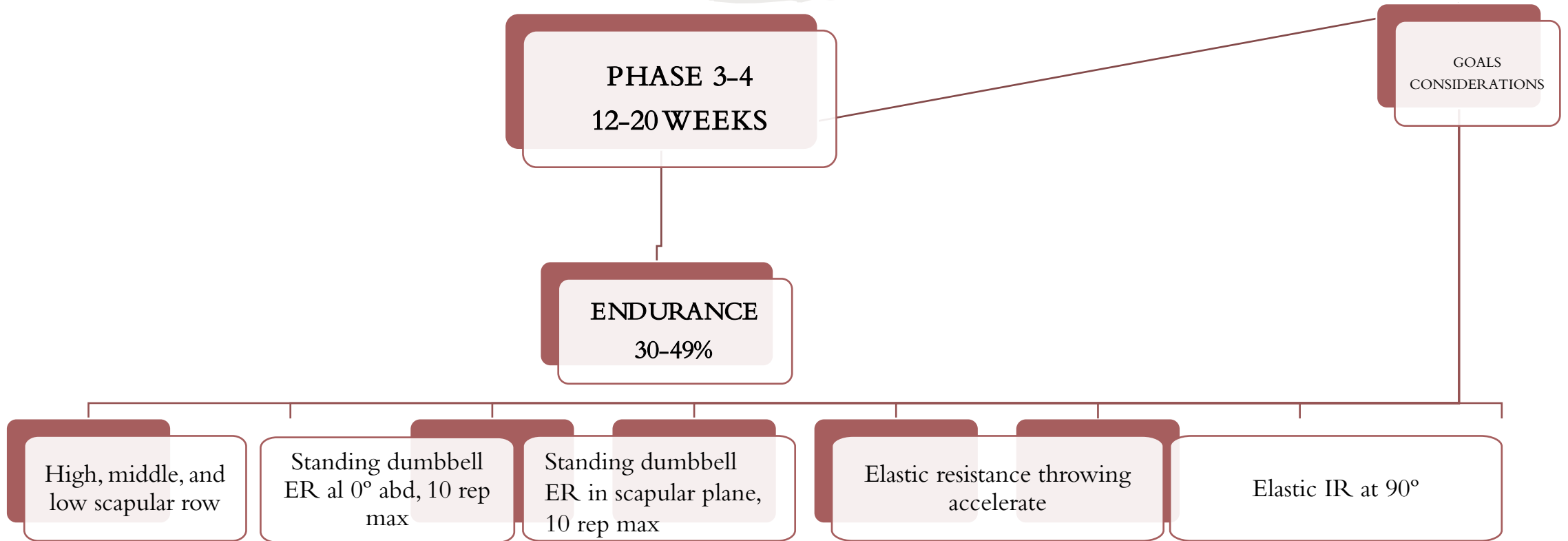
Upright active forward flexión with or without weight

Elastic resistance ER, IR, forward punch

Aquatic FE fast speed

Prone, side-lying dumbbell ER at 0°

PHASE OF POSTOPERATIVE EXERCISES



FREQUENCY OF REHABILITATION

The ideal form are a matter of debate.

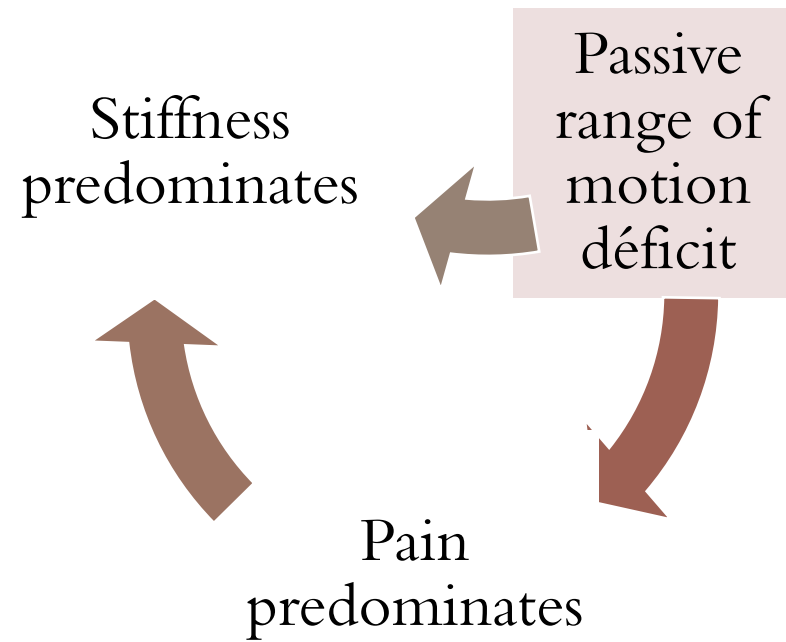
Our proposal:

1 time/week phase 1 (0-6 weeks)

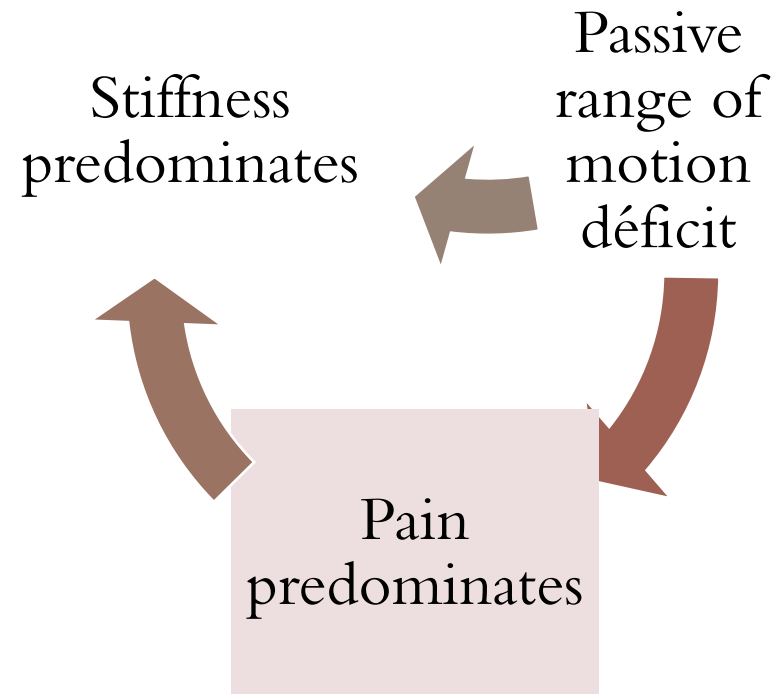
2 sessions/week for phases 2-4

Total of sessions less than 25

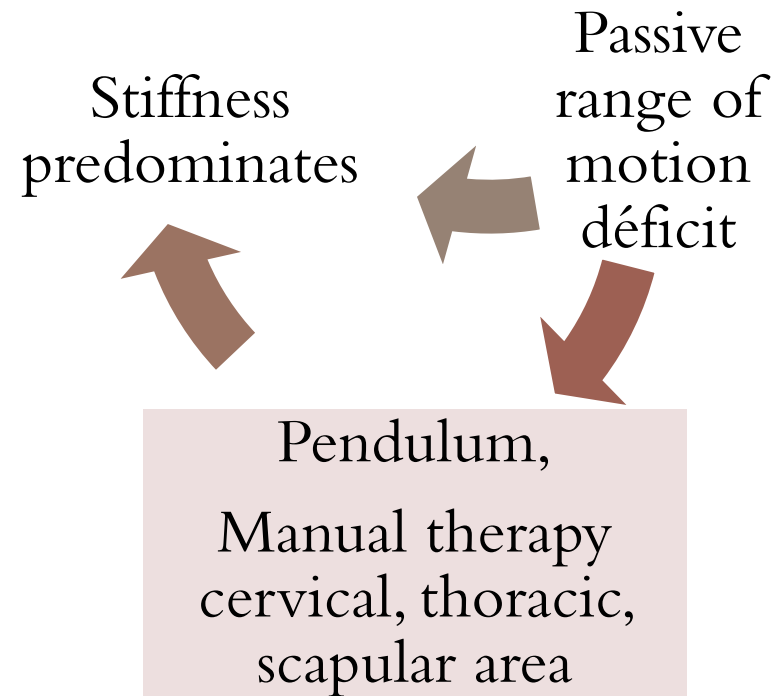
COMPLICATIONS



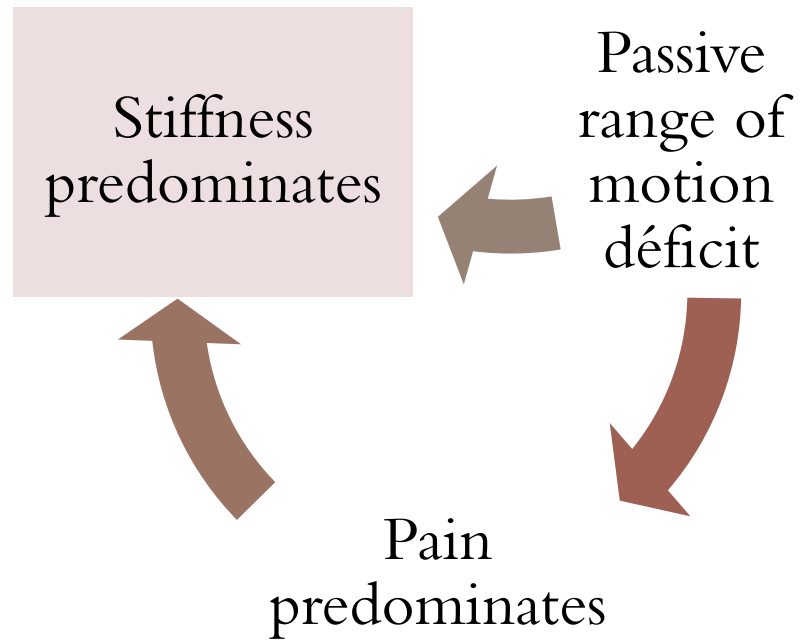
COMPLICATIONS



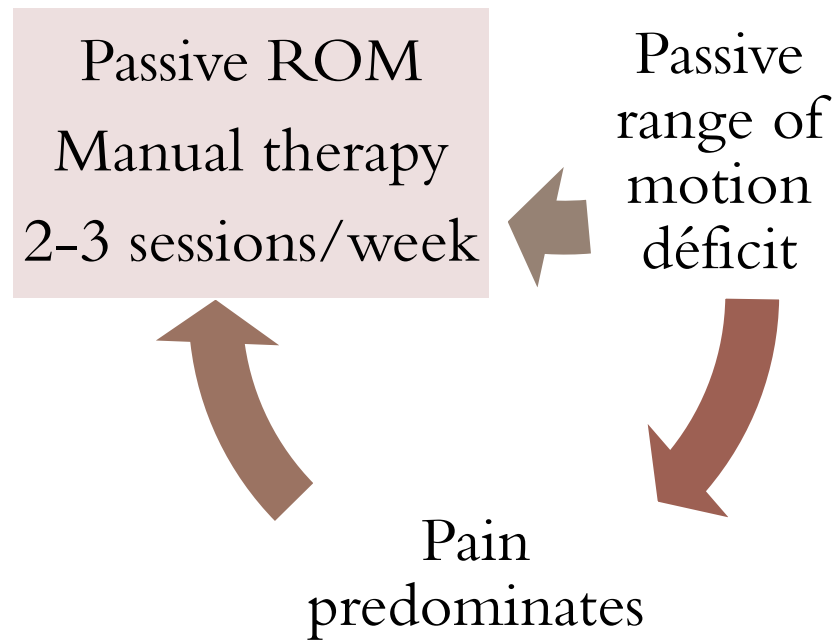
COMPLICATIONS



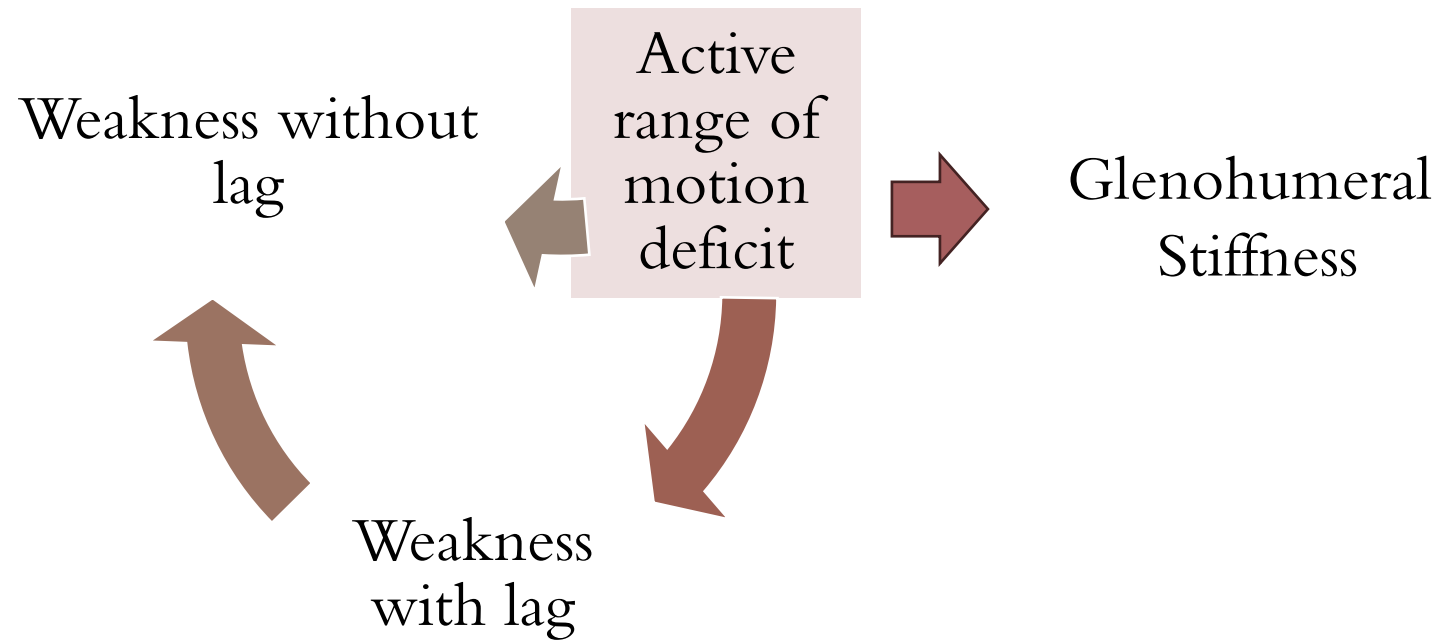
COMPLICATIONS



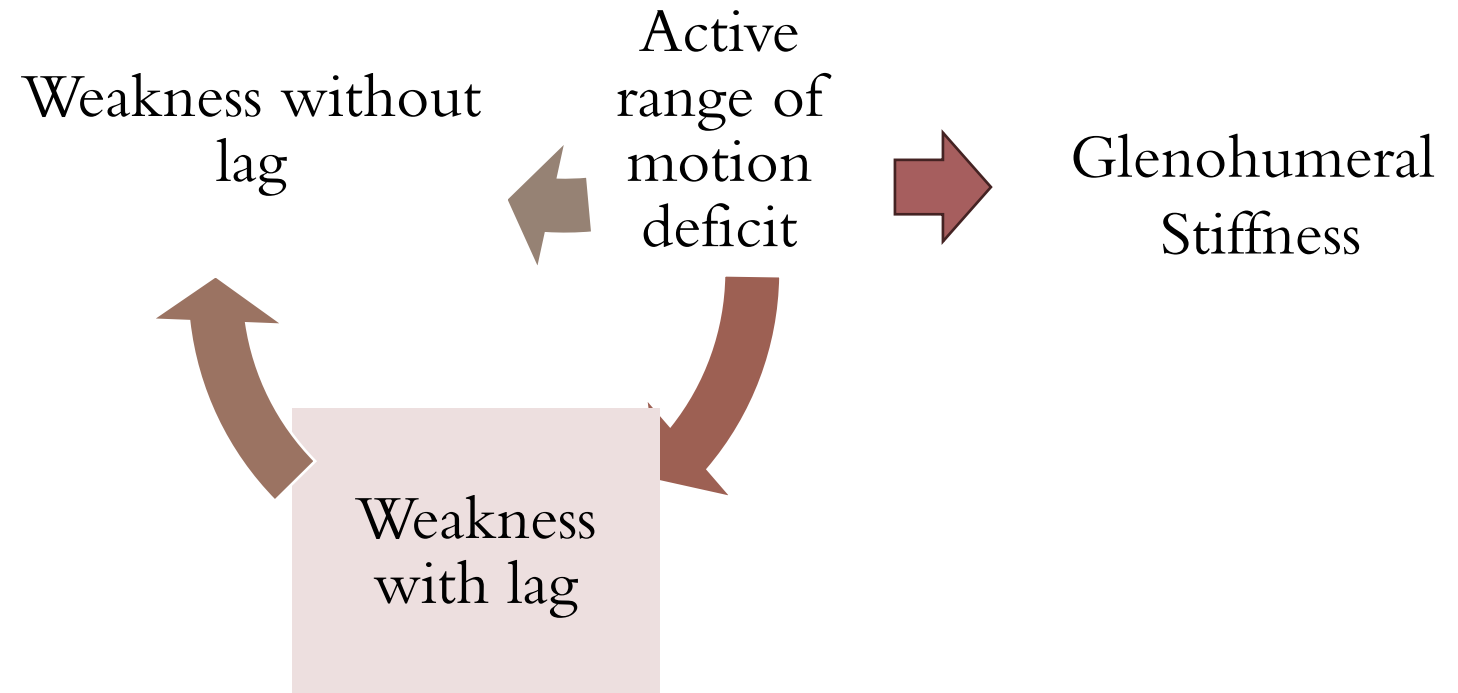
COMPLICATIONS



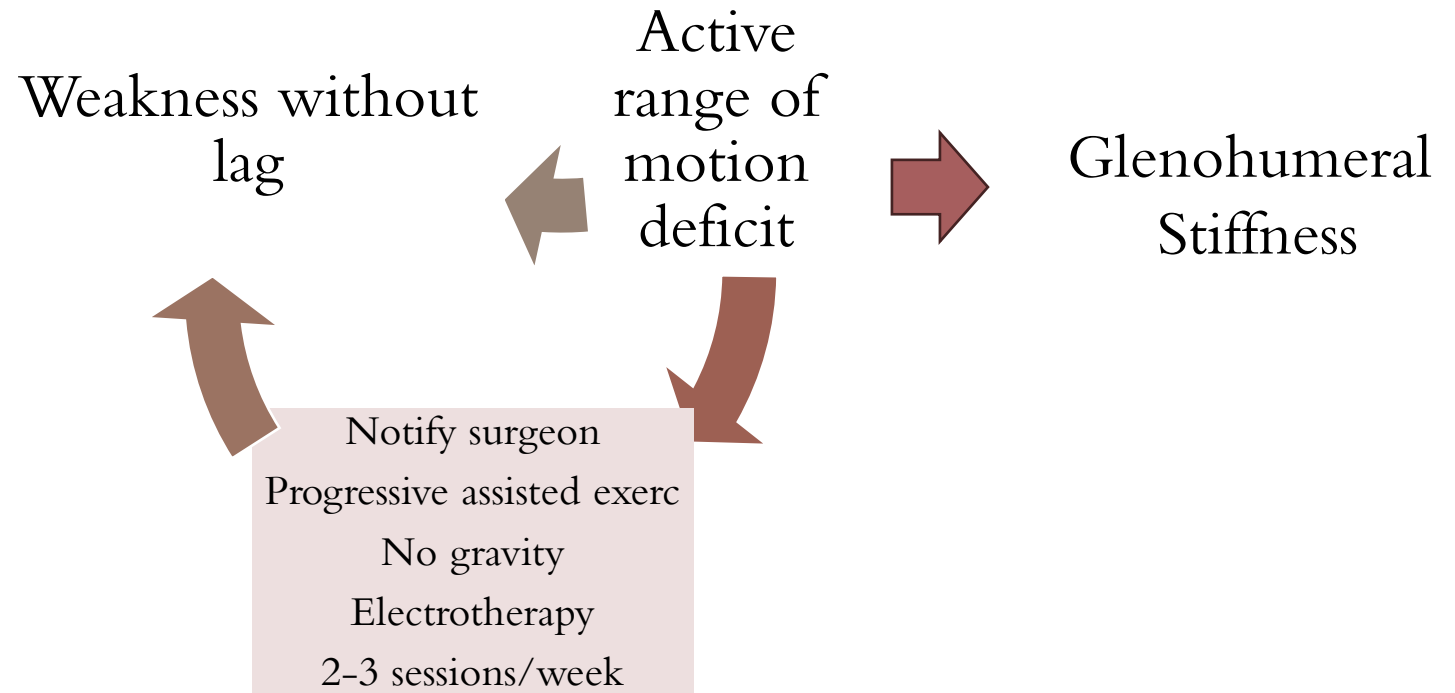
COMPLICATIONS



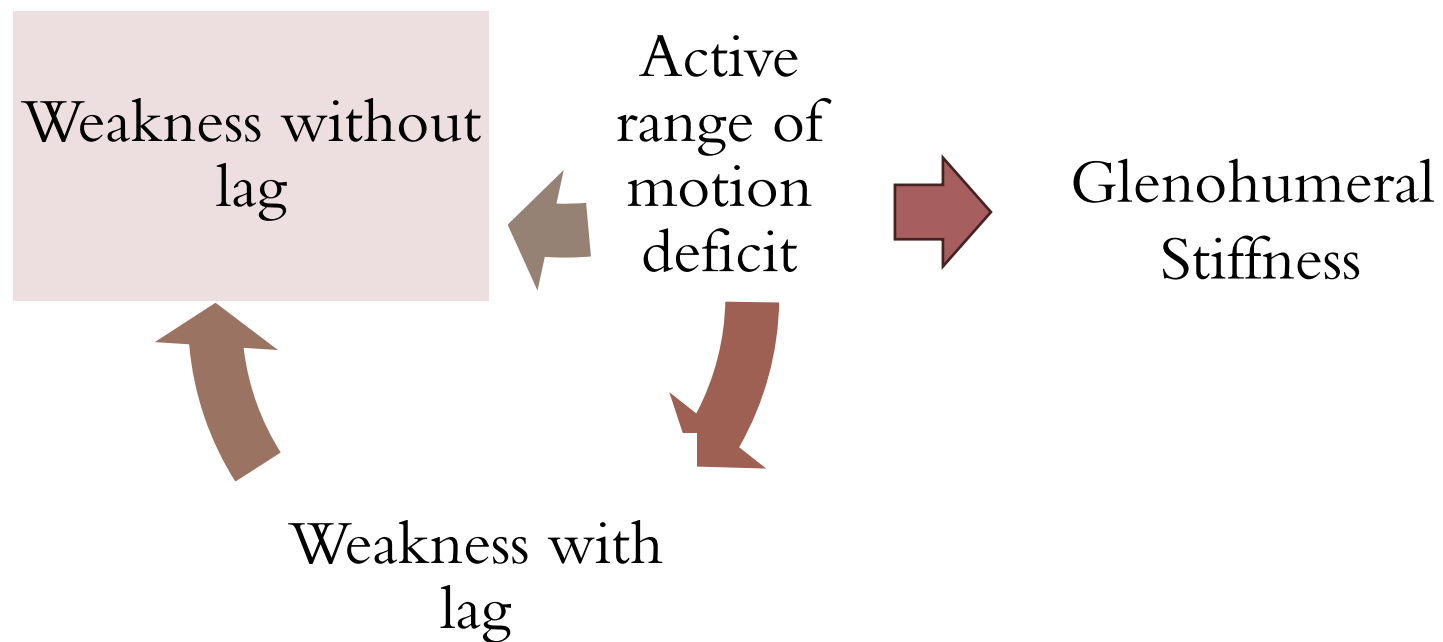
COMPLICATIONS



COMPLICATIONS

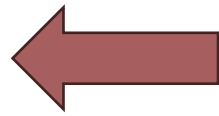


COMPLICATIONS



COMPLICATIONS

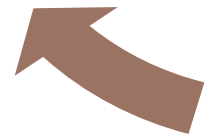
Motor control strategies
FNP
NMES
No gravity
Differentiate RC v scapular muscles deficits



Active range of motion deficit

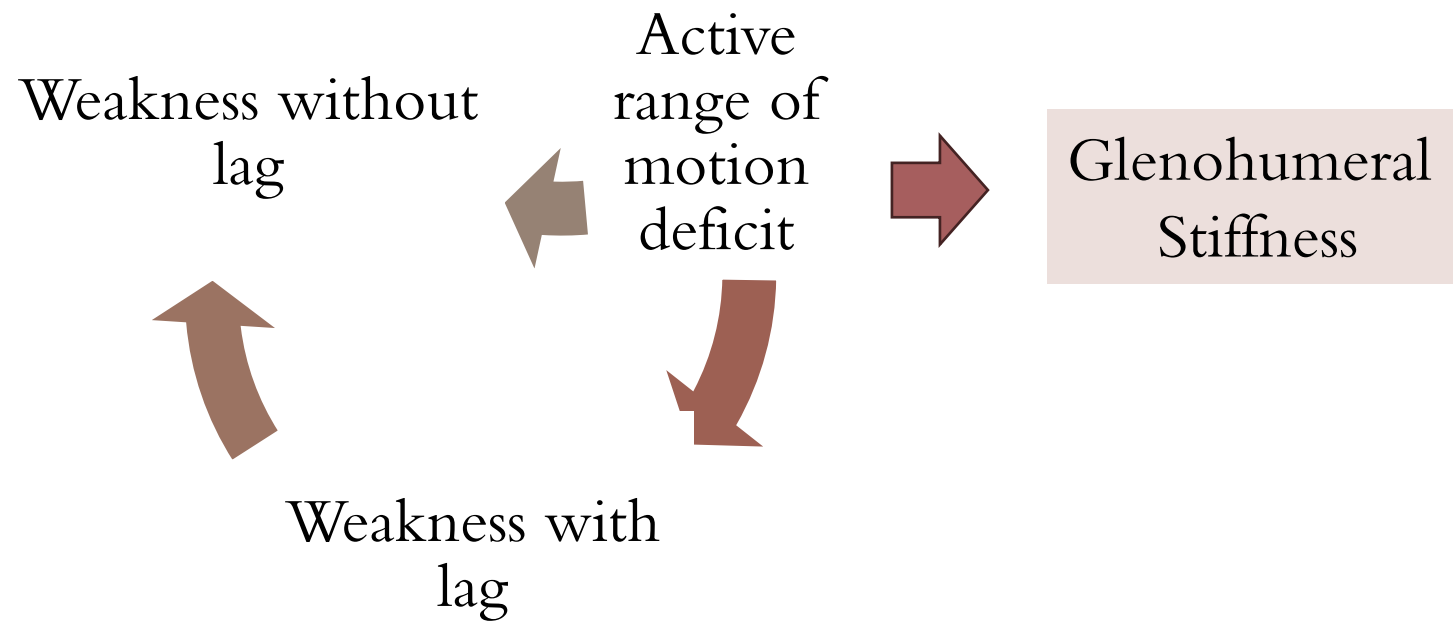


Glenohumeral Stiffness

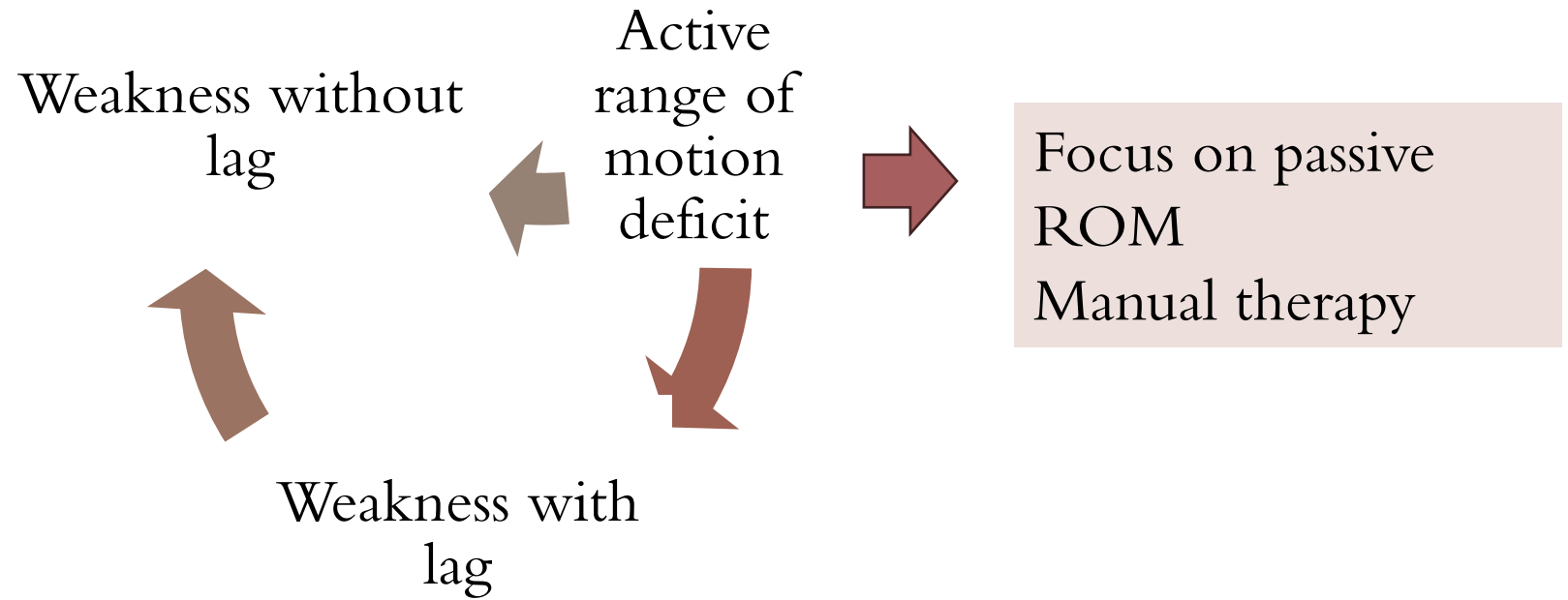


Weakness with lag

COMPLICATIONS



COMPLICATIONS





Find the way to the success of our treatment....