Multidirectional instability of the shoulder: CONSERVATIVE TREATMENT

Classification of instability (1)

TRAUMATIC UNIDIRECTIONAL TUBANKART SURGERY

ACQUIRED INSTABILITY IOSYNDROME

ATRAUMATIC MULTIDIRECTIONAL AMBILATERAL REHABILITATION INFERNIOR

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TRAUMATIC INSTABILITY

TRAUMATIC

UNIDIRECTIONAL
(ANTERIOR)

BANKART

SURGERY

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SPORTSRELATED INSTABILITY

ACQUIRED

INSTABILITY

OVERSTRESS

SYNDROME

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ATRAUMATIC INSTABILITY

A

TRAUMATIC

M

ULTIDIRECTIONAL

B

ILATERAL (LAXITY)

R

EHABILITATION

I

NERIOR (CAPSULAR SHIFT)

Overlap between types?

TRAUMATIC

A

CQUIRED

T

ERIDIRECTIONAL

U

NKART

B

ANKART

S

URGERY

ACQUIRED

NSTABILITY

I

VERSTRESS

O

YSYNDROME

A

TRAUMATIC

M

ULTIDIRECTIONAL

B

ILATERAL

R

EHABILITATION

I

NERIOR

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A Cools 2015
Overlap between types?

TRAUMATIC

UNIDIRECTIONAL

ANKART

SURGERY

ACQUIRED

INSTABILITY

OVERSTRESS

SYNDROME

AMULTIDIRECTIONAL

BILATERAL

REHABILITATION

INFERIOR

Classification of Instability (2)

Stanmore triangle:

Rehabilitation for shoulder instability

A. Joggi, S. Lambert

Classification of instability (3)

FEDS classification

**Muscle recruitment patterns in MDI patients**

**Increased activation of pectoralis major and latissimus dorsi** (Barden 2005, Jaggi 2008, 2010)

Increased forces in PM and LD increase inferior translations in lower elevation angles, and anteriorly directed forces in end-range positions, resulting in decreased joint stability (Konrad 2006, Jaggi 2010)
Dominance latt dorsi and pect maj

Scientific background for conservative treatment

2. Muscle recruitment patterns in MDI patients
   Decreased activation in deltoïd, and posterior cuff muscles (Morris 2004)
   Deltoid is an important stabilizer of the GH joint and avoids inferior translation of the humeral head (Gagey 2000, Donatelli 2004)
Scientific background for conservative treatment

3. **Closed chain exercises** improve static stability of the joint and stimulate intra- and periarticular mechanoreceptors (Lephart & Fu 2000, Jaggi BJSM 2010)

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General guidelines MDI conservative treatment

1. Improve local dynamic joint stability through activation of the **deltoid & posterior cuff and scapular setting** (Yamazaki 2003, Milner 2002)
2. Use by preference **closed chain exercises** to guarantee static joint approximation (Uhl 2003, Dillman 1994)
3. Avoid **activity of latt dorsi and pect major** during exercises (Jaggi 2010)
4. If needed, **Adjust OKC exercises** to applicability in MDI patients (Guerrero 2009)
5. Improve functional stability through **proprioceptive taping techniques** (Jaggi 2010)
1. Improve local glenohumeral and scapular stability (deltoid co-contraction + scapular setting)

(Uhl 2003, Cools & Walravens 2007)

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Taping for MDI/ Ant instab

(Mc Connell 1999)
2. Closed chain exercises: progression

- **Low Load**
  - static
  - dynamic

- **Moderate Load**
  - static
  - dynamic

- **High Load**
  - static
  - dynamic

low load (static & dynamic)

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low load (static & dynamic)

low load in higher elevation angles (dynamic)
Finding the subtle balance between load and stability….

### 2. Closed chain exercises: progression

<table>
<thead>
<tr>
<th>Load Level</th>
<th>Static</th>
<th>Dynamic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Load</td>
<td>static</td>
<td>dynamic</td>
</tr>
<tr>
<td>Moderate Load</td>
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<td>dynamic</td>
</tr>
<tr>
<td>High Load</td>
<td>static</td>
<td>dynamic</td>
</tr>
</tbody>
</table>
From Low to Moderate load

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Moderate load “static” exercises
Moderate load “dynamic” exercises

2. Closed chain exercises: progression

Low Load → static → dynamic

Moderate Load → static → dynamic

High Load → static → dynamic
From Moderate to High load

high load “static” exercises
High load “dynamic” exercises:

2. Closed chain exercises: progression

- Low Load: static → dynamic
- Moderate Load: static → dynamic
- High Load: static → dynamic

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Practice

1. Low load dynamic: Push-up against manual resistance and ball supine
2. Moderate load static: elbow support on swiss ball
3. Moderate load dynamic: ball slides
4. High load dynamic: Side bridging + ER

3. Avoid activity of PM & LD
4. Adjust OKC exercises to applicability and need for MDI patients

OKC abduction sidelying
+effect of gravity on joint stability
Training deltoid

External rotation with slight abduction
Deltoid activation
Compression force on GH joint
LT activation with low UT activity (Cools AJSM 2007)
Avoid glenohumeral shear forces
Increase scapular control

Theory: does it work?

Warby JSES 2014 – systematic review:
Exercise therapy seems to be effective in MDI
However quality of studies is low
Need for high quality intervention studies…
Putting theory into practice: short term…

Putting theory into practice, long term…