SELF- MYOFASCIAL RELEASE WITH FOAM ROLLERS DURING HEALTH TOURISM

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EXERCISE PROGRAM FOR TOURISTS WITH OR WITHOUT MUSCULOSKELETAL DISORDERS

- When designing a program for an unknown team of persons (e.g. tourists) it must be taken into account that the program should be adequate and effective for different target groups, of different ages, musculoskeletal condition, athletic level etc.

EXERCISE PROGRAM FOR TOURISTS WITH OR WITHOUT MUSCULOSKELETAL DISORDERS

- A program for tourists has to combine *effectiveness* with *relaxation* and *fun*.

EXERCISE PROGRAM FOR TOURISTS WITH OR WITHOUT MUSCULOSKELETAL DISORDERS

- Such a program could be Self Myofascial Release (SMR) with foam rollers (FRs) and/ or other devices.

MYOFASCIA: A TYPE OF CONNECTIVE TISSUE THAT CAN BE RESTRICTED

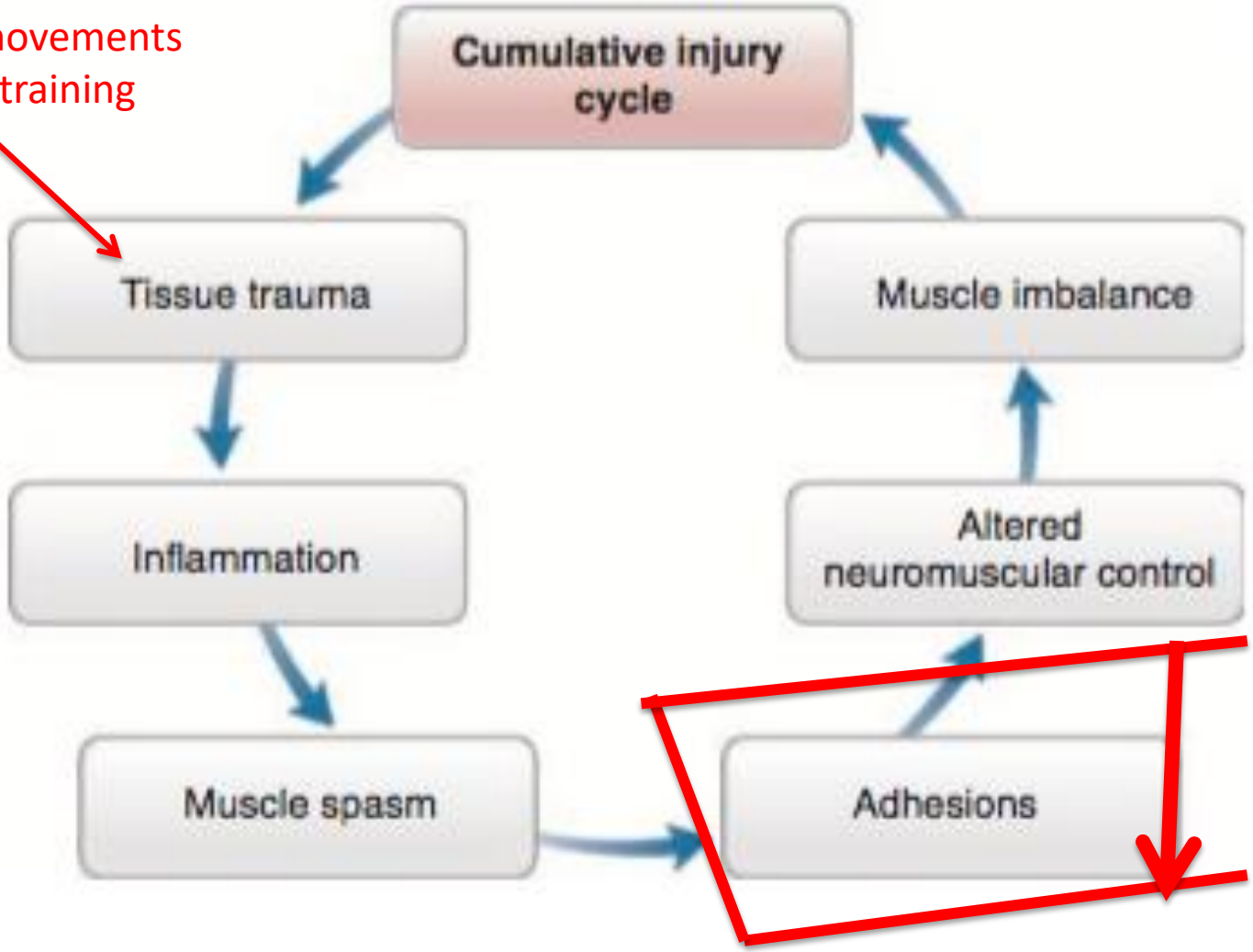
- Connective tissue is a tissue that provides to the body its shape, connects and unifies all the cells and the organs of the body.
- Myofascia refers to the connective tissue that envelopes and supports the muscles. It consists of three distinct layers of dense connective tissue: the epimysium, the perimysium and the endomysium.

MYOFASCIA: A TYPE OF CONNECTIVE TISSUE THAT CAN BE RESTRICTED

- It is the fascia that can ultimately determine the length and function of its muscular component.
- The fascial system can become restricted due to **trauma** and **inflammation** and the response to trauma is **tightening of the fascial system.**

CUMULATIVE INJURY CYCLE

Poor posture
Repetitive movements
Imbalanced training
Overuse
Overactivity

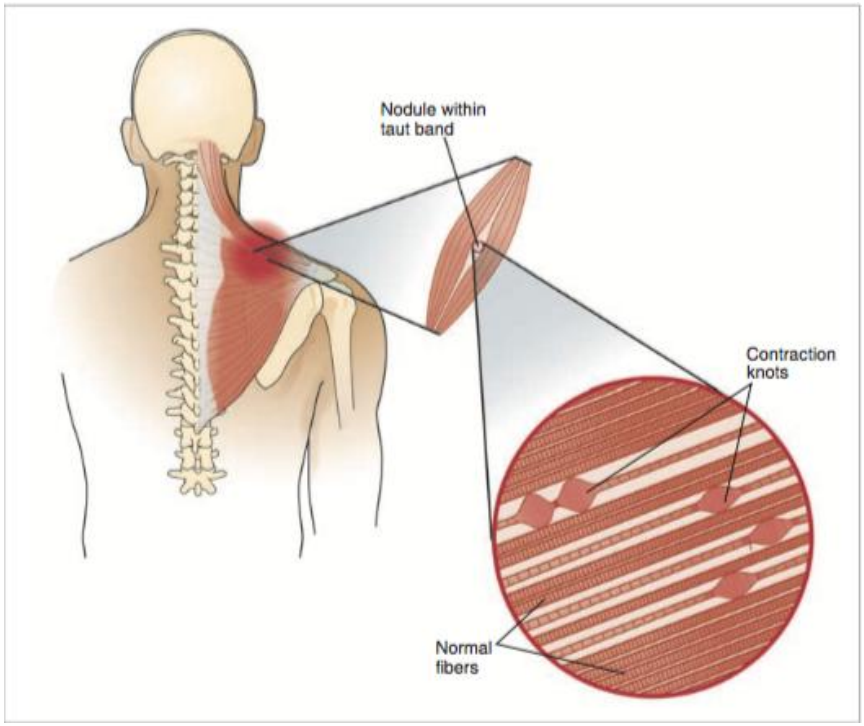


MYOFASCIAL ADHESIONS

Myofascial adhesions (active or latent) form a weak, inelastic (unable to stretch) matrix that decreases normal elasticity of the soft tissue.

The clinical signs and symptoms of these trigger points are:

- ❑ Restricted range of motion
- ❑ Pain (local and referred)
- ❑ Muscle weakness due to pain



MYOFASCIAL RELEASE AND SELF-MYOFASCIAL RELEASE

- ***Myofascial Release*** *is a* soft tissue therapy technique that targets specifically the (restricted) myofascia: through the application of pressure by the hands of a manual therapist in the myofascial tissues facilitates a stretch into the restricted fascias and elongates and soften the tight connective tissues.

Both techniques aim to treat myofascial restrictions that are due to connective tissue tightening.

MYOFASCIAL RELEASE AND SELF-MYOFASCIAL RELEASE

- **Self Myofascial Release** is a self-massage technique that derives from the concept of myofascial release. In SMR the pressure in the tissues is exerted by the individuals themselves using specialized devices (foam rollers, roller massagers, various kinds of balls etc.)

Both techniques aim to treat myofascial restrictions that are due to connective tissue tightening.

MYOFASCIAL INHIBITION/ RELEASE

The primary goals of self myofascial release are to:

- Inhibit the overactivity of the myofascial tissues
- Soften the shortened and release the hypertoned myofascial tissues.

This is achieved through the **breaking of the myofascial adhesions**…

Using PRESSURE…

AIMS AND EFFECTS OF SMR

The reduction of myofascial adhesions leads to:

- Alleviation of muscular tension
- Pain reduction
- Increase of flexibility (acutely and chronically)

AIMS AND EFFECTS OF SMR

The reduction of myofascial adhesions leads to:

- Correction of muscle imbalances
- Reduction of functional limitations of the musculoskeletal system
- Functional improvement

FOAM ROLLERS AND FLEXIBILITY

- **Increase of hip flexors and quadriceps flexibility** acutely (Cheatman et al., 2017; Mac Donald et al.,2013; Marcovic, 2015)
- **Increase of hamstrings flexibility** acutely (Marcovic, 2015; Mohr et al., 2014) and chronically (Boguszewski et al.,2017; Junker & Stoggl, 2015).
- **Increase of ankle plantarflexors flexibility** (gastrocnemius and soleus) acutely (Daskalaki, Malliou, Beneka, Gioftsidou, Bebetsos, 2018; Garc et al., 2017; Kelly & Beardsley, 2016)

7 KEY POINTS FOR THE EFFECTIVE USE OF FR

1. Who is the target population?
2. What ***type of roller or SMR device*** to use?
3. Which is the best ***technique*** of rolling?

…

7 KEY POINTS FOR THE EFFECTIVE USE OF FR

…

4. How much ***pressure*** to exert?
5. For ***how long***? (duration of SMR)
6. What ***pace*** to use?
7. When to perform FR?

1. TARGET POPULATION

A SMR session must be designed and organized according to the **“principle of individuality”**:

- ✓ experience in relation to SMR
- ✓ musculoskeletal condition and special necessities …

1. TARGET POPULATION

A SMR session must be designed and organized according to the **"principle of individuality"**:

…

- ✓ identity (e.g. professional or recreational athlete etc)
- ✓ the exact purpose of the FR application (i.e. warm up/cool down during training, increase of flexibility, alleviation of muscular pain, relaxation etc)

2. WHAT TYPE OF ROLLER OR SMR DEVICE TO USE?

Smooth Roller

The Grid Roller

Rumble Rollers

Selection of FR according to:

Material and density (softer and less rigid materials offer less penetration into the soft tissues and exert less pressure)
Surface (smooth VS nodules)
Diameter (larger diameter FRs offer less pressure in comparison with smaller diameter rollers).
PROGRESSION: Select first a smooth FR of large diameter and made of a softer material, (for beginners) and progress to one with a smaller diameter, made of a more rigid material and possibly with knobs on its surface (for more advanced users).

2. WHAT TYPE OF ROLLER OR SMR DEVICE TO USE (COMPARISON OF DIFFERENT DEVICES FOR SMR)

- **Foam rollers** are best used in treating **large muscle groups**.

2. WHAT TYPE OF ROLLER OR SMR DEVICE TO USE (COMPARISON OF DIFFERENT DEVICES FOR SMR)

- **Roller massagers** exert less pressure in comparison with FRs (in RMs it is the strength of the upper limbs that define the amount of pressure while in FRs it is bodyweight). Suitable for persons with wrist problems.

2. WHAT TYPE OF ROLLER OR SMR DEVICE TO USE (COMPARISON OF DIFFERENT DEVICES FOR SMR)

- **Balls** (medicine balls, tennis, baseball, golf, lacrosse balls) are more suitable for treating muscle or fascia on a smaller surface area and can concentrate more easily on a **hot spot**. The progression here is to proceed from a ball with a bigger diameter (e.g. medicine ball) to a ball with a smaller diameter (e.g. tennis or golf ball).

3. WHICH IS THE BEST TECHNIQUE OF ROLLING?

Two of the most common myofascial techniques are:

- ✓ Exerting pressure while rolling back and forth in a *slow and melting pace* in order to provoke tonus decrease.

- ✓ Sustaining the pressure in a painful area (“hot spot”).

4. HOW MUCH PRESSURE TO EXERT?

The pressure that will be exerted depends on:

- ✓ Type of roller
- ✓ Body-weight of the subject
- ✓ Modification of the exercise
- ✓ Instructions

Previous instructions proposed in scientific researches include:

- «As much force through the roller as possible» (Kelly & Beardsley, 2016)
- "Pressure equivalent to a pain level of 7 out of 10" (Halperin et al., 2014)
- "An amount of pressure that provokes a sustainable and not intolerable amount of pain/discomfort" (Daskalaki et al., 2018).
- In a recent research (Grabow et al., 2017) that compared the impact of different intensities of rolling forces (50%, 70% and 90% of maximum discomfort) in the flexibility of quadriceps during a treatment with a Roller Massager it was found that rolling forces do not substancially amplify ROM so it is suggested to **roll a below a level of significant pain or discomfort**.

5. DURATION OF SMR

- *30–60 seconds* as long as *five minutes* or ***until a release is felt per muscle***.
- Greater durations could probably lead to greater gains in flexibility (*Dose-response effect).*

6. WHAT PACE TO USE?

A slow and melting pace is advised in order to induce parasympathetic state and for muscle tonus decrease. So, the individual should roll the device slowly over the treatment area.

7. WHEN TO PERFORM SMR?

- SMR can be performed anytime during the day (for healthy subjects).
- When exercising it can be performed as a complementary method during warm up or as recovery and cool down.
- For the increase of ROM it has proven more effective the combination of FR with static stretching and it has been recommended that FR is executed ***before static stretching*** (Mohr et al., 2014).

CONTRADICTIONS

- Anyone using SMR techniques should follow the same precautionary measures as those established for massage or myofascial release.
- SMR should be cautioned or avoided by people with:

✓ Healing Fractures
✓ Febrile state
✓ Osteoporosis
✓ Phlebitis
✓ Acute rheumatoid arthritis
✓ Advanced diabetes
✓ Congestive heart failure, kidney failure or any organ failure (such as the liver and pancreas)
✓ Contagious skin conditions.
✓ Cancer (under certain circumstances such treatments should not be applied).

SMR DURING HOLIDAYS: CORRECTING PAST AND PROMISING A BETTER MUSCULOSKELETAL FUTURE

- SMR with Foam Rollers and/or other devices like roller massagers (RMs) is an ideal intervention for relieving the multiple musculoskeletal areas of stress that have been accumulated during the entire working year.
- By teaching the tourists on how to individually apply FR and/or RM, the sessions will be beneficial for them not only at present but also to the future, since they will gain the knowledge on how to perform SMR during the entire year without supervision.

THANK YOU FOR YOUR ATTENTION!

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