Gemelli

Fondazione Policlinico Universitario A. Gemelli
Università Cattolica del Sacro Cuore

ReDO Teniamoci per mano

Approcci non farmacologici per la gestione del dolore

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ROMA

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DOLORE

Comportamento di evitamento

< mobilità

paura /ansia di muoversi

Debolezza

> Disabiliàtà

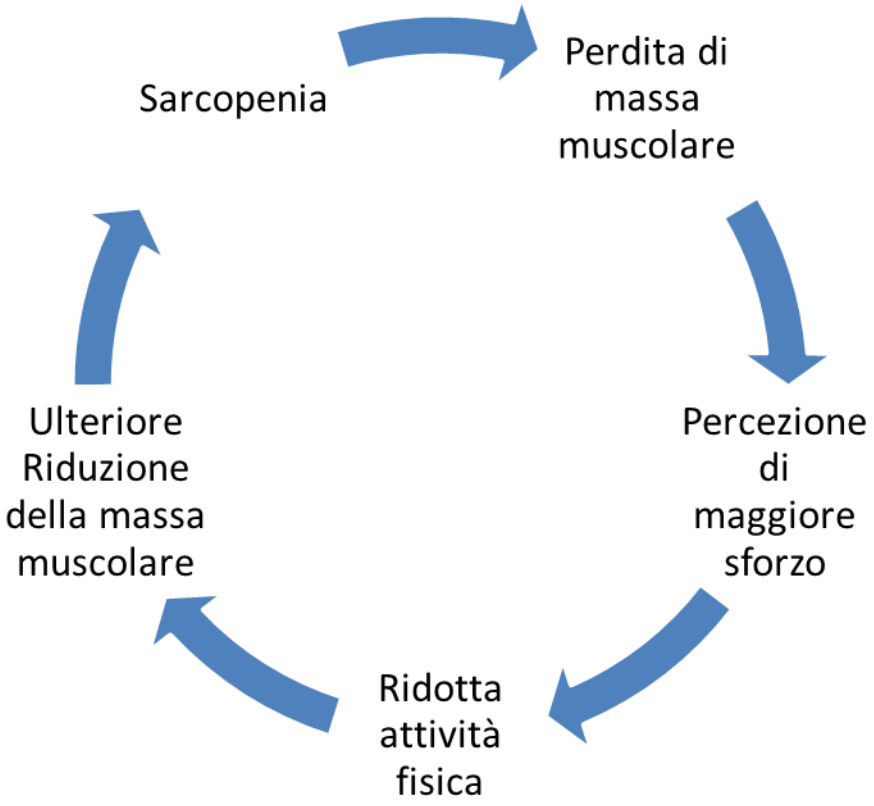
Fatigue stanchezza

Depressione
Isolamento sociale

Ridotta capacita lavorativa

INATTIVITÀ

Ipotrofia , Accorciamento muscolare e tendineo, retrazione capsula/ legamenti



GESTIONE DOLORE

riposo

Ipotrofia muscolare, retrazione capsulari, sofferenza cartilaginea

Terapia farmacologica

Esercizio

Economia articolare

Terapia con mezzi fisici

Giusto equilibrio tra riposo nelle fasi di acuzie e un'attività ponderata negli altri periodi

PERDITA DI FORZA

- Inattività
- Inibizione riflessa della contrazione muscolare da gonfiore articolare
- Miositi
- Miopatie da steroidi
- Effetti diretti della patologia (aumento del catabolismo proteico indotto da alcune citochine, tra cui il TNFa)

RIPOSO (Funzionale)

1. Completo
2. Frazionato in brevi periodi (20-30min)
3. Parziale di 1 o più articolazioni (tutori)

Riposo a letto fa perdere 5% al giorno di forza muscolare

Kottke 1996

EDUCAZIONE

A year 2004 systematic review of patient education in RA concluded that there is evidence for these **benefits, at least in the short-term**; however, evidence of long-term effects on outcomes is lacking

Niedermann K, Fransen J, Knols R, Uebelhart D. Gap between short- and long-term effects of patient education in rheumatoid arthritis patients: a systematic review. Arthritis Rheum **200**4

Self-management educational interventions for patients with RA or OA found a **clinically small, but statistically significant, beneficial effect** on both pain and disability

Warsi A, LaValley MP, Wang PS, et al. Arthritis self-management education programs: a meta-analysis of the effect on pain and disability. Arthritis Rheum **2003**;

Patient education as provided in the studies reviewed here **had small short-term effects on disability, joint counts, patient global assessment, psychological status and depression**. There was no evidence of long-term benefits in adults with RA

Riemsma RP, Kirwan JR, Taal E, Rasker HJJ. Patient education for adults with rheumatoid arthritis. *Cochrane Database of Systematic Reviews **200**3*

PROTEZIONE ARTICOLARE O ECONOMIA ARTICOLARE

strategie atte a svolgere un'attività con il minor sforzo possibile, utilizzando correttamente le articolazioni per evitare un sovraccarico o una sollecitazione errata delle strutture osteo-articolari

proteggere le articolazioni non significa risparmiarle attraverso l'inattività, bensì acquisire un **diverso metodo di lavoro** basato su semplici ma indispensabili accorgimenti che oltre a ridurre o evitare il dolore ritardano e evitano deformità

Economia articolare

- Scaricare le articolazioni doloranti
- Calo ponderale
- Promuovere una buona postura nelle attività
- Usare le articolazioni maggiori
- Conservare energia (fatigue)
- Non eccedere con i tempi di attività intervallandoli con periodi di riposo
- Tutori e ausili

TUTORI

- Alleggerire il carico articolare
- Ridurre il movimento articolare
- Contenere le articolazioni in posizione di massima funzionalità
- Aumentare il movimento articolare splint dinamici

ESERCIZIO e DOLORE CRONICO

The available evidence suggests physical activity and exercise is an intervention with **few adverse events that may improve pain severity and physical function, and consequent quality of life**

Geneen LJ, Moore RA, Clarke C, Martin D, Colvin LA, Smith BH. Physical activity and exercise for chronic pain in adults: an overview of Cochrane Reviews. Cochrane Database of Systematic Reviews **2017**

ESERCIZIO

“un’attività fisica programmata, strutturata e ripetuta, atta a migliorare e mantenere l’efficienza fisica”

Klemz BN, Reis-Neto ET, Jennings F, Siqueira US, Klemz FK, Pinheiro HH, Sato EI, Natour J, Szejnfeld VL, Pinheiro MM. The relevance of performing exercise test before starting supervised physical exercise in asymptomatic cardiovascular patients with rheumatic diseases. Rheumatology. **2016**

BENEFICI DELL'ESERCIZIO TERAPEUTICO

- Mantenimento e miglioramento dell'articolarità
- Potenziamento muscolare
- Aumento della resistenza statica e dinamica
- Miglioramento della capacità locomotoria
- Aumento della BMD
- **Riduzione del dolore**
- Riduce l'infiammazione
- Migliora la capacità aerobica
- Migliora l'autonomia funzionale
- Aiuta a ridurre il peso corporeo
- Migliore il benessere HoL

TRATTAMENTO CHINESITERAPICO

- Mobilizzazioni passive
- Contrazioni isometriche
- Contrazioni isotoniche, contro resistenza
- Stretching
- Rieducazione posturale
- FKT respiratoria
- Ginnastica dolce (Tai Chi, Yoga, Feldenkrais, Qi Gong)

Li L, JuddM, Pencharz JN. Comprehensive physiotherapy for rheumatoid arthritis. *Cochrane Database of Systematic Reviews* 2004,.

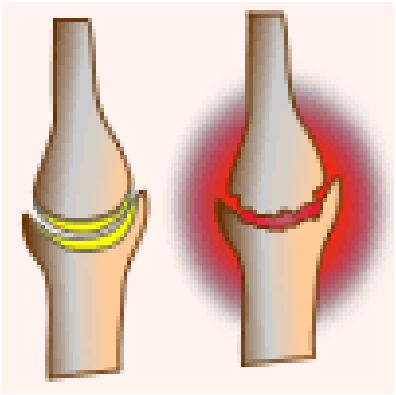
1. **Fase acuta** esercizi isometrici e di stretching per mantenere il tono e il trofismo muscolare ed impedire la comparsa di atteggiamenti viziati che preludono alle deformità articolari

2. **Fase subacuta**

- mobilizzazione passiva (da eseguire senza mai forzare le articolazioni)
- mobilizzazione attiva, con l'utilizzo di esercizi senza carico, che non provochino dolore né stanchezza, per mantenere ed incrementare la motilità articolare

1. **Fase di remissione** mobilizzazione attiva, con o senza resistenza, per rinforzare ed equilibrare l'apparato muscolo-tendineo

Esercizi per la menomazione



Dolore

Limitazione del ROM

Deficit muscolare

Il lavoro sarà eseguito in scarico ed in isometria, rispettando la soglia dolorosa
La resistenza , quando occorre, sarà manuale

Attenzione ai segni di esercizi eccessivi o stress
Dolore durante l'attività o 1-2 ore dopo gli esercizi
gonfiore, affaticamento, debolezza

ESERCIZIO TERAPEUTICO

- Esercizi di mantenimento del ROM preserva o migliora la mobilità articolare
- **Esercizi per aumentare la forza muscolare eseguiti una o due volte a settimana migliorano la funzione e NON peggiorano l'attività di malattia**

Hakkinen A, Sokka T, Kotaniemi A, Hannonen P. A randomized two-year study of the effects of dynamic strength training on muscle strength, disease activity, functional capacity, and bone mineral density in early rheumatoid arthritis. Arthritis Rheum **2001**

ESERCIZIO AEROBICO AR

Sicuro

non aumenta

- Il dolore
- L ‘attività di malattia
- Il danno articolare

(Hurkmans 2009; Gaudin 2007; Hakkinen 2004;Stenström 2003)

Programmi di esercizio aerobico e di tonificazione

Migliorano la forza muscolare e la propriocezione articolare

Riducono il dolore e migliorano la mobilità

ESERCIZIO AEROBICO

Based on the evidence, aerobic capacity training combined with muscle strength training is recommended as routine practice in patients with RA.

The optimal duration of the intervention, mode of delivery, and extent of supervision need to be further investigated.

Hurkmans E, van der Giesen FJ, Vliet Vlieland TPM, Schoones J, Van den Ende ECHM. Dynamic exercise programs (aerobic capacity and/or muscle strength training) in patients with rheumatoid arthritis. Cochrane Database of Systematic Reviews **2009**

FIBROMIALGIA

When compared with control, moderate-quality evidence indicates that **aerobic exercise** probably improves HRQL and all-cause withdrawal, and low-quality evidence suggests that aerobic exercise may slightly decrease pain intensity, may slightly improve physical function, and may lead to little difference in fatigue and stiffness. **Three of the reported outcomes reached clinical significance (HRQL, physical function, and pain)**

Bidonde J. Aerobic exercise training for adults with fibromyalgia. Cochrane Database Syst Rev. 2017

Biomed Res Int. 2017;2017:2356346. **Effectiveness of Therapeutic Exercise in Fibromyalgia Syndrome: A Systematic Review and Meta-Analysis of Randomized Clinical Trials.**

Sosa-Reina MD[1,2], Nunez-Nagy S[3], Gallego-Izquierdo T[3], Pecos-Martín D[3], Monserrat J[1], Álvarez-Mon M[1,2].

CONCLUSIONS:

This study concludes that **aerobic and muscle strengthening exercises are the most effective way of reducing pain and improving global well-being** in people with fibromyalgia and that stretching and aerobic exercises increase health-related quality of life. In addition, combined exercise produces the biggest beneficial effect on symptoms of depression.

Exerc Immunol Rev. 2009;15:42-65.

Exercise in fibromyalgia and related inflammatory disorders: known effects and unknown chances.

Ortega E[1], García JJ, Bote ME, Martín-Cordero L, Escalante Y, Saavedra JM, Northoff H, Giraldo E.

After the exercise program, a significant decrease in IL-8, IFNgamma, and CRP were found, in parallel with a decrease in circulating concentrations of cortisol and increased levels of NA. The results confirm an elevated "inflammatory status" in the FM syndrome and strengthen the hypothesis that the benefits of exercise in FM patients are mediated, at least in part, by its anti-inflammatory effects. A better regulation of the cytokine-HPA axis feedback may be also involved.

Mediators Inflamm. 2018 Apr 18;2018:3985154.

Plasma Cytokine Levels in Fibromyalgia and Their Response to 15 Weeks of Progressive Resistance Exercise or Relaxation Therapy.

Ernberg M[1], Christidis N[1], Ghafouri B[2], Bileviciute-Ljungar I[3], Löfgren M[3], Bjersing J[4], Palstam A[5], Larsson A[5,6], Mannerkorpi K[5,6], Gerdle B[2], Kosek E[7,8].

After both interventions, IL-1ra had increased (P = 0.004), while IL-1β had increased in the relaxation group (P = 0.002). Changes of IFN-γ, IL-2, IL-4, IL-6, IL-8, and IL-17A were weakly correlated with changes of PPT, but there were no significant correlations between changes of cytokine and changes in other clinical variables. The elevated plasma levels of several cytokines supports the hypothesis that chronic systemic inflammation may underlie the pathophysiology of FM even if the relation to clinical variables was weak. However, 15 weeks of resistance exercise, as performed in this study, did not show any anti-inflammatory effect on neither FM symptoms nor clinical and functional variables

FIBROMIALGIA

Le ginnastiche dolci, che comportano un coinvolgimento globale corpo-mente, particolarmente adatto alle complesse alterazioni psicologico-funzionali del paziente fibromialgico.

Al momento, ci sono solo alcune evidenze scientifiche, che mostrano, comunque, risultati promettenti di alcune metodiche, come il Qi Gong e il Tai Chi

Haak T, Scott B. The effect of Qi gong on fibromyalgia (FMS): a controlled randomized study. Disabil Rehabil 2008

Taggart HM, Arslanian CL, Bae S, Singh K. Effects of Tai Chi exercise on fibromyalgia symptoms and healthrelated quality of life. Orthop Nurs 2003

YOGA

- Posture
- Respiro
- Rilassamento
- Meditazione

No adverse events were reported and attrition was comparable or better than typical for exercise interventions. **Evidence was strongest for reduction in disease symptoms (tender/swollen joints, pain) and disability, as well as improved self-efficacy and mental health.**

Haaz S. Yoga for arthritis: a scoping review. Rheum Dis Clin North Am**. 2011**

YOGA

Standardized mean differences was -0.98(95% CI -1.18, -0.78, P<.05) for pain, -1.83 (95% CI -2.09, -1.57, P<.05) for functional disability, was 0.80 (95% CI 0.59, 1.01, P<.05) for Short Form 36 Health Survey (SF-36) general health,

CONCLUSIONS:

Regular yoga training is helpful in reducing knee arthritic symptoms, promoting physical function, and general wellbeing in arthritic patients

Integrative effect of yoga practice in patients with knee arthritis: A PRISMA-compliant meta-analysis. Wang Y, Lu S, Wang R, Jiang P, Rao F, Wang B, Zhu Y, Hu Y, Zhu J. Medicine (Baltimore). 2018 Aug;97(31:

Tai Chi e AR

Four trials including 206 participants

The results suggest Tai Chi does not exacerbate symptoms of rheumatoid arthritis. In addition, has statistically significant benefits on lower extremity range of motion, in particular ankle range of motion, for people with RA.

Han A. Tai chi for treating rheumatoid arthritis. Cochrane Database of Systematic Reviews **2004**

BMJ. 2018 Mar 21;360:k851..

Effect of tai chi versus aerobic exercise for fibromyalgia: comparative effectiveness randomized controlled trial.

Wang C[1], Schmid CH[2], Fielding RA[3], Harvey WF[4], Reid KF[3], Price LL[5], Driban JB[4], Kalish R[6], Rones R[7], McAlindon T[4].

CONCLUSION:

Tai chi mind-body treatment results in similar or greater improvement in symptoms than aerobic exercise, the current most commonly prescribed non-drug treatment, for a variety of outcomes for patients with fibromyalgia. Longer duration of tai chi showed greater improvement. This mind-body approach may be considered a therapeutic option in the multidisciplinary management of fibromyalgia.

Complement Ther Clin Pract. 2018 May;31:343-348.

The comparison of the effectiveness of conventional therapeutic exercises and Pilates on painand function in patients with knee osteoarthritis.

Mazloum V[1], Rabiei P[2], Rahnama N[3], Sabzehparvar E[1].

There was a significant (P < 0.001) difference between the experimental groups in all measured outcomes compared to the control.

While, regarding pain and disability, more significant (P = 0.003) improvement was observed in participants following Pilates training compared to CTE.

Terapie fisiche

Termoterapia

Campi magnetici

Ultrasuonoterapia

Laserterapia

Elettroterapia

tecarterapia

Effetti analgesici
Riducono la rigidità

Terapie non invasive pochi effetti collaterali

US

Ultrasound alone can be used on the hand

- To increase grip strength
- To increase wrist dorsal flexion
- Decrease morning stiffness
- Reduce the number of swollen joints
- Reduce the number of painful joints

2 studies (80pz) <u>continuous</u> ultrasound applied in water

Casimiro L. Therapeutic ultrasound for the treatment of rheumatoid arthritis. Cochrane Database of Systematic Reviews 2010

LLLT

The effect is not thermal, but rather related to photochemical reactions in the cells

LLLT could be considered for short-term treatment for relief of pain and morning stiffness for RA patients

LLLT

- **reduced pain** by 1.10 points (95% CI: 1.82, 0.39) on VAS relative to placebo,
- **reduced morning stiffness duration** by 27.5 minutes (95%CI: 2.9 to 52 minutes)
- **increased tip to palm flexibility** by 1.3 cm (95% CI: 0.8 to 1.7)

functional assessment, ROM and local swelling did not differ between groups

how LLLT (wavelengths from 632nm to 1064nm) effectiveness is affected by four important factors: wavelength, treatment duration of LLLT, dosage and site of application (over nerves instead of joints)?

Brosseau L. Low level laser therapy (Classes I, II and III) for treating rheumatoid arthritis. Cochrane Database of Systematic Reviews 2010

TENS

- AL-TENS (low frequency and high intensity) is beneficial for reducing pain intensity and improving muscle power scores over placebo
- C-TENS (high frequency with low intensity) resulted in no clinical benefit on pain intensity compared with placebo. However C-TENS resulted in a clinical benefit on patient assessment of change in disease over AL-TENS.

Three RCTs, involving 78 people

Brosseau L. Transcutaneous electrical nerve stimulation (TENS) for the treatment of rheumatoid arthritis in the hand. Cochrane Database of Systematic Reviews 2010

Cochrane Database Syst Rev. 2017 Oct 9;10:CD012172.

Transcutaneous electrical nerve stimulation (TENS) for fibromyalgia in adults.

Johnson MI[1], Claydon LS, Herbison GP, Jones G, Paley CA.

AUTHORS' CONCLUSIONS:

There was insufficient high-quality evidence to support or refute the use of TENS for fibromyalgia.

ELETTROSTIMOLAZIONE

clinically beneficial effect on grip strength and fatigue resistance for RA patients with muscle atrophy of the hand

Pelland L, Brosseau L, Casimiro L, Welch V, Tugwell P, Wells GA. Electrical stimulation for the treatment of rheumatoid arthritis.
Cochrane Database of Systematic Reviews 2002

Oldham JA, Stanley JK. Rehabilitation of Atrophies Muscle in the Rheumatoid Arthritis Hand: A comparison of two Methods of Electrical Stimulation.
Journal of Hand Surgery/ British Volume 1989

TERMOTERAPIA

Superficial moist heat and cryotherapy can be used as palliative therapy

Paraffin wax baths combined with exercises can be recommended for beneficial short-term effects for arthritic hands

Welch V, Brosseau L, Casimiro L, Judd M, Shea B, Tugwell P, Wells GA. Thermotherapy for treating rheumatoid arthritis.
Cochrane Database of Systematic Reviews 2002,

Księżopolska-Orłowska K. Complex rehabilitation and the clinical condition of working rheumatoid arthritis patients: does cryotherapy always overtop traditional rehabilitation?
Disabil Rehabil. 2016

MAGNETOTERAPIA

The magnetic field of low frequency (LF-EMF) is commonly used in the treatment of patients with diseases of the osteoarticular system including RA

magnetic intensity of 2 mT and frequency of 12 Hz are used in arthritis. The recommended treatment time is from 15 to 30 minutes, and the treatments are performed 1–2 times per day for several weeks

Despite the numerous reports showing an impact of magnetic field in subjects with RA, the effectiveness of magnetotherapy has not been explicitly confirmed

Zwolińska J. The use of magnetic fields in treatment of patients with rheumatoid arthritis. Review of the literature. Reumatologia. 2016

GRAZIE