Rheumatoid Arthritis: Executing Exercise

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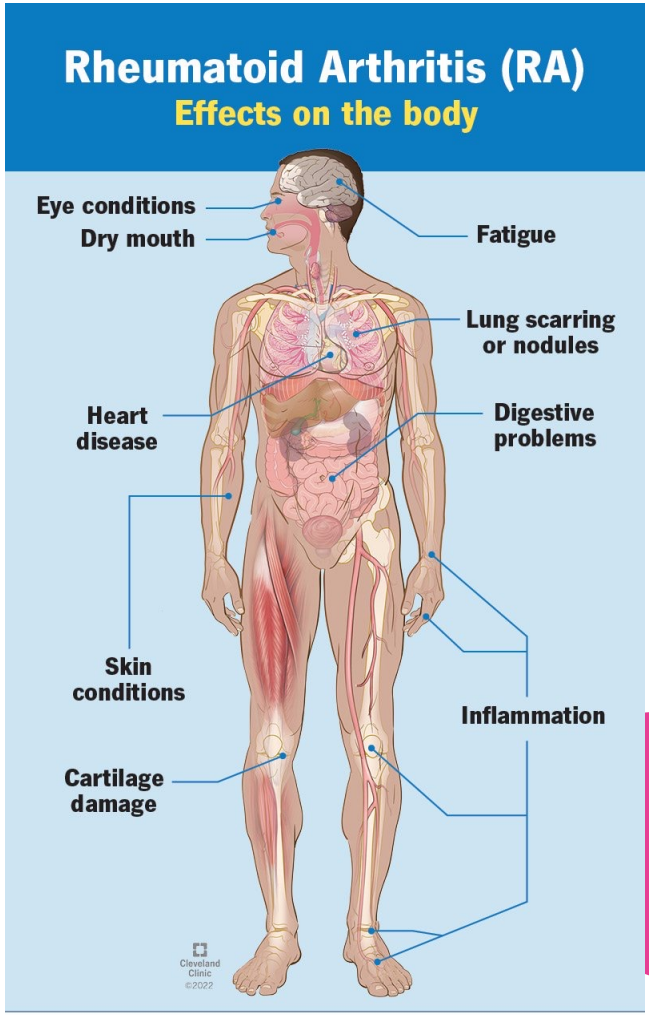


WHAT DO WE KNOW?

RA is a multi-system, destructive, joint disease.

RA features pain, fatigue, “flares” & poorer health.

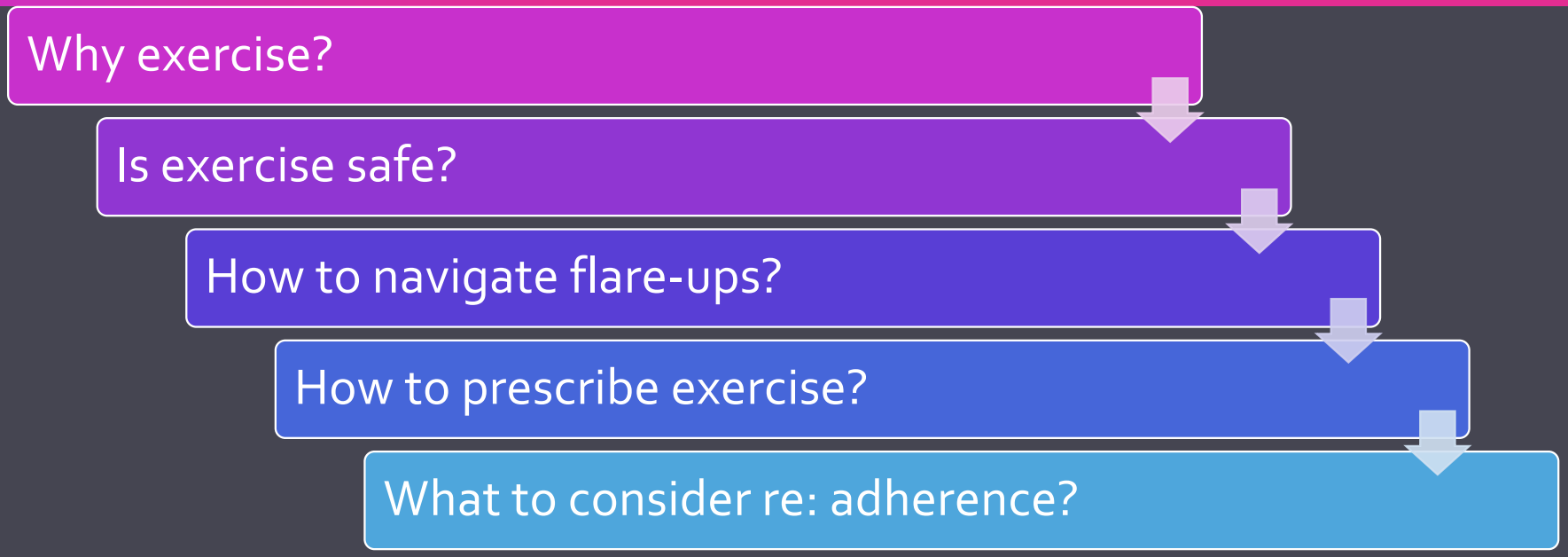
Exercise is recommended.

Exercise is challenging.

(Li & Wang 2022; Joseph et al,. 2023)

SO HOW DO WE EXECUTE EXERCISE?

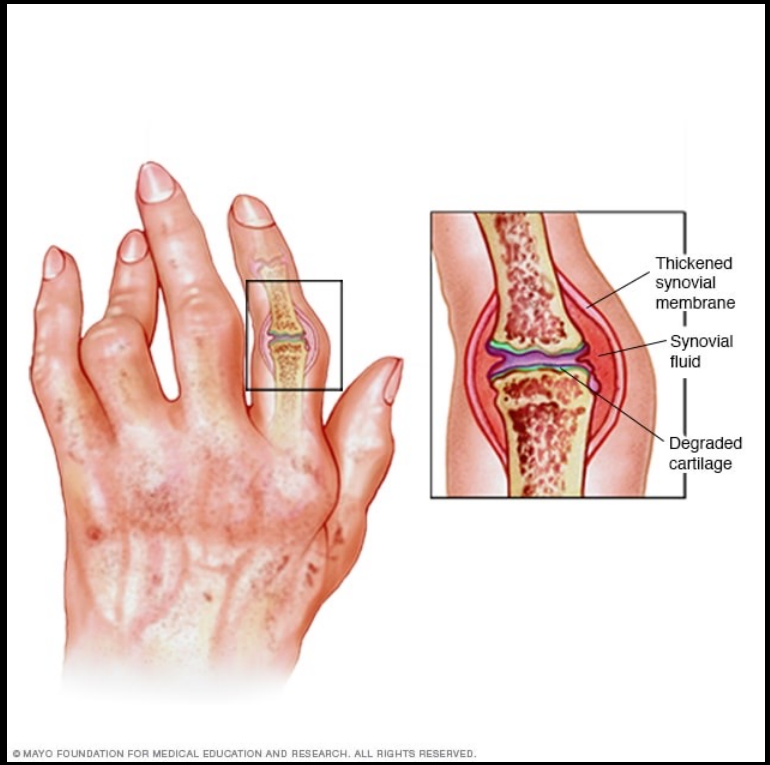
STIMULUS QUESTIONS:



OVERALL ROLE OF MANAGEMENT

- DMARDS & Biological agents)
- Why exercise?

Reduce	Minimise	Improve
Disease activity	Structural damage.	Function Symptoms CV health.



(Rausch et al,. 2018; Metsios & Kitas 2018 Marthe et al,,. 2021)

Cochrane Database Syst Rev. 2009 Oct; 2009(4): CD006853.
Published online 2009 Oct 7. doi: 10.1002/14651858.CD006853.pub2
PMCID: PMC6769170
PMID: 19821388

Dynamic exercise programs (aerobic capacity and/or muscle strength training) in patients with rheumatoid arthritis

Monitoring Editor: Emalie Hurkmans,[✉] Florus J van der Giesen, Thea PM Vliet Vlieland, Jan Schoones, Els CHM Van den Ende, and Cochrane Musculoskeletal Group

- Efficacy & safety of short/long term dynamic exercise (aerobic and/or strength)
- Either land or water-based.
- 8 RCTs

- Short-term land based aerobic improves aerobic capacity
- Short & Long-term land aerobic and RT improves aerobic capacity and strength.
- Inconclusive superiority for land vs water.
- Long term adherence issues.

META-ANALYSES: RESISTANCE

Resistance Exercise:

1) Baillet et al (2012):
- RT for QOL, STR, ESR

2) Wen et al (2022):
- RT for ESR + DAS + 50ft walk

Aerobic Exercise

3) Baillet et al (2010):
- QOL, HAQ score.

4) Ye et al (2022):
- Function, pain, aerobic cap, STS.

IS EXERCISE SAFE?

DOES EXERCISE AGGRAVATE RA?

Exercise does not aggravate:

- Disease activity
- Severity of pain
- Swollen joints
- Joint stiffness
- May reduce disease activity or severity.

(Li Z & Wang 2022)

ACUTE POST-EXERCISE OUTCOMES

Nil aggravation of pain post-exercise compared to controls.

Post-exercise inflammatory markers no different to controls.

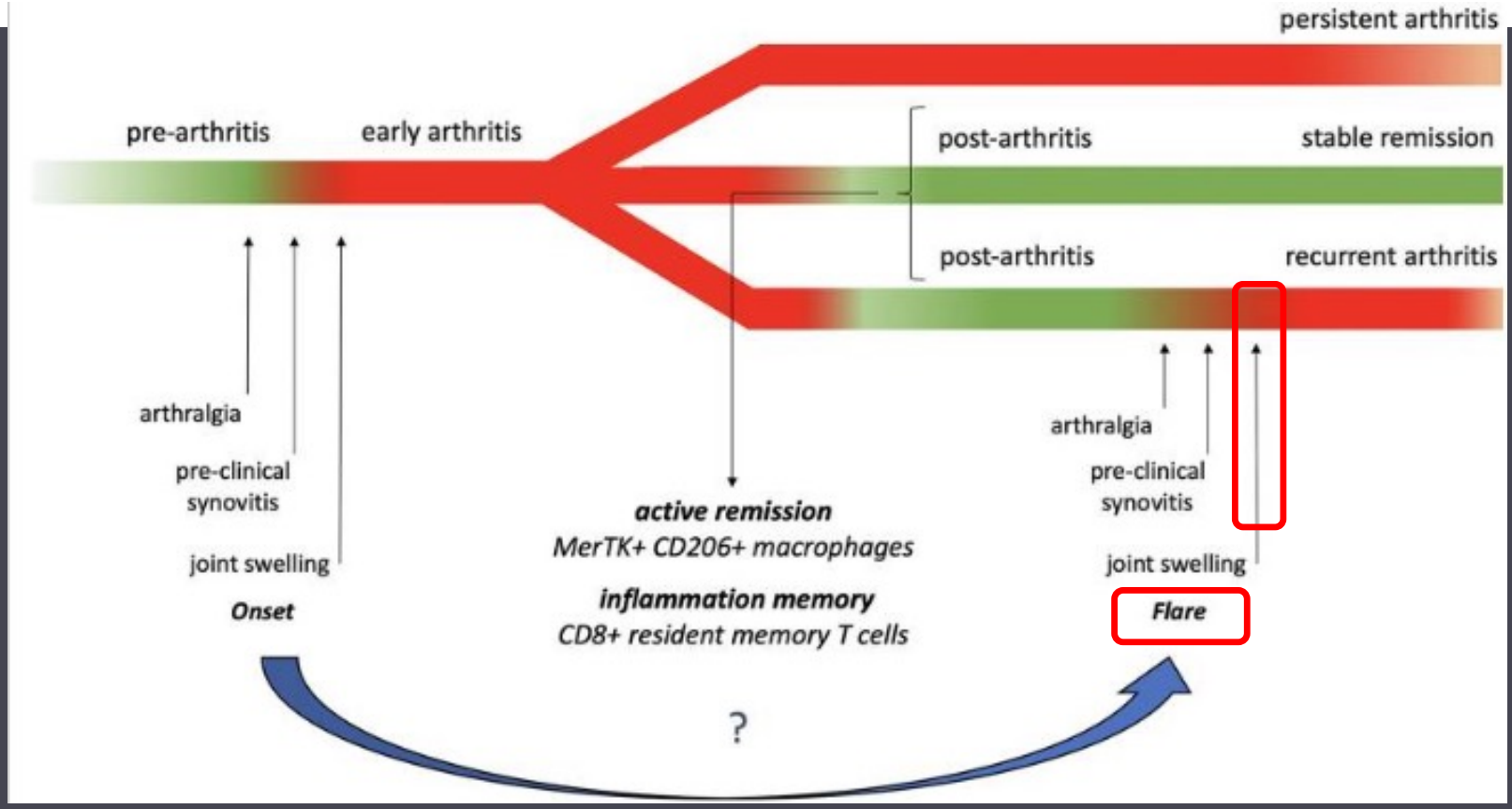
(Balchin et al,. 2022)

ACUTE POST-EXERCISE OUTCOMES

	Land N = 33	Water N = 33	Controls N = 34	*P*
Adverse events	14 (42.4%)	3 (9.1%)	33 (97.1%)	<0.001
Worse due to pain or joint swelling	8 (24.2%)	0	21 (61.8%)	0.03
Depression	0	0	3 (8.8%)	0.1
Morning stiffness	1 (3%)	0	0	0.2
Low back pain	1 (3%)	1 (3%)	4 (11.8%)	0.2
Nonrestorative sleep	0	0	5 (14.7%)	0.3
Hypertension	3 (9.1%)	1 (3%)	0	0.4
Influenza	0	1 (3%)	0	0.1
Serious adverse events				
Cerebrovascular accident	1 (3%)	0	0	0.1
Death	1 (3%)	0	0	0.6

(Siqueira et al,. 2017)

FLARE-UPS



(Bozalla-Cassione et al,. 2022; Myasoedova et al,. 2016; Jacquemin et al,. 2017)

FLAREUPS

Educate
support & Collaborate.

Liaise
with rheum/medical team.

Exercise
unaffected joints (tolerable intensity).

Encourage
some PA

Limit
high loads to affected joints

Have
A plan to get back into exercise

(Metsios 2018; Bozalla-Cassione et al,. 2022; Myasoedova et al,. 2016)

HOW DO PRESCRIBE EXERCISE?

LIMITATIONS IN THE RESEARCH

- Combining exercise methods ideal.
- Any exercise is better than none.
- Unknown dose-response.
- Poor reporting of exercise principles
- Difficult extrapolate to severe RA.

Review > J Adv Nurs. 2021 Feb;77(2):506-522. doi: 10.1111/jan.14574. Epub 2020 Nov 11.

The effect of physical exercise on rheumatoid arthritis: An overview of systematic reviews and meta-analysis

Huiling Hu [1], Anqi Xu [1], Chao Gao [2], Zhenqing Wang [3], Xue Wu [1 4]

> Mediterr J Rheumatol. 2021 Dec 27;32(4):378-385. doi: 10.31138/mjr.32.4.378. eCollection 2021 Dec.

Position Statement on Exercise Dosage in Rheumatic and Musculoskeletal Diseases: The Role of the IMPACT-RMD Toolkit

George S Metsios [1 2 3], Nina Brodin [4], Thea P M Vliet Vlieland [5], Cornelia H M Van den Ende [6],

LIMITATIONS

Boniface et al's SR (2020):

- RCTs did not report pilot studies, or evidence to underpin exercise dose.
- 97% of included RCTs provided incomplete Rx descriptions
- Key dose parameters were incomplete.

- The SARAH trial was one that did have a pilot, and did have use the same dosage in their main trial. (Lamb et al,. 2015)

HAND EXERCISES: SARAH TRIAL

(Lamb et al,. 2015; Heine et al,. 2012; Esther et al,. 2017)

- Hand exercise (n=246) was superior to usual care (n=244) in hand function + grip strength.
- No adverse events.

	Exercise	Frequency	Sets	Repetitions	Initial Hold
Mobility	MCP flexion	Daily	1	x 5	5 seconds (where required)
	Tendon gliding				
	Finger radial walking				
	Wrist circumduction				
	Finger abduction				
	Hand-behind-head				
	Hand-behind-back				
Strength	Eccentric wrist extension	Daily	1	x 10 (minimum 8 repetitions; maximum 12 repetitions)	-
	Gross grip				
	Finger adduction				
	Pinch grip				

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

MCP flexion

Tendon gliding

Radial walking

Finger abduction

Wrist circumduction

Combined shoulder & elbow ROM

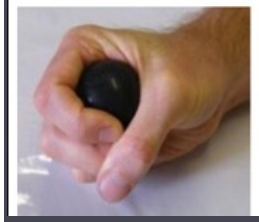
SARAH: MOBILITY

SARAH: STRENGTH

Eccentric

wrist extension

Finger pinch

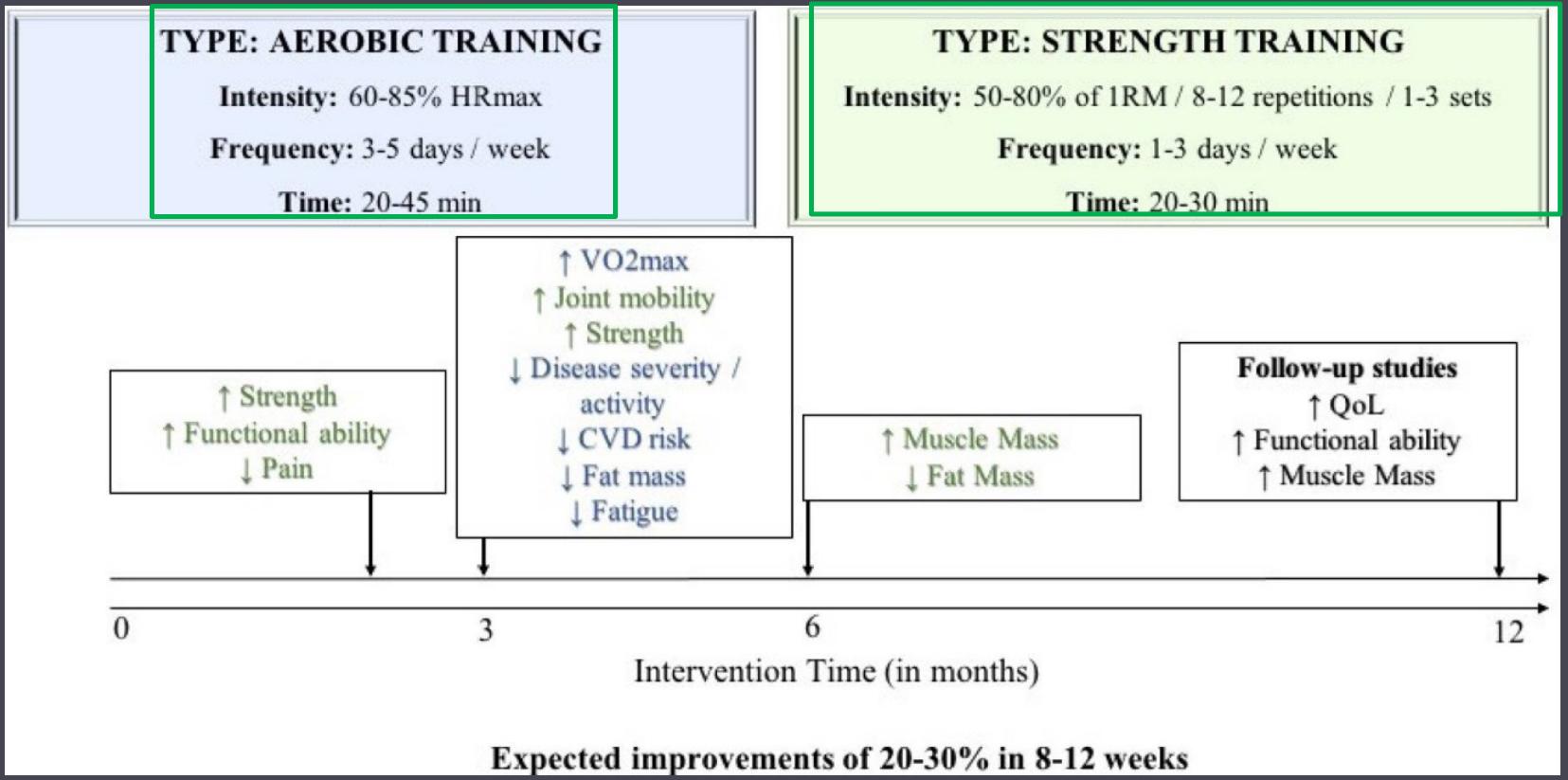


Gross grip

Finger adduction

EXERCISE PARAMETERS

(Metsios et al,. 2021)



BARRIERS & FACILITATORS TO EXERCISE

Barriers:

- Unpredictable nature of RA
- Pain
- Stiffness
- Reduced mobility
- Fatigue
- ↓ Confidence
- Fear of embarrassment

Barriers cont:

- Injury/exacerbation of symptoms
- Lack of professional guidance
- Inaccessible facilities
- Cost

Facilitators:

- Professional guidance,
- Social support
- Improved symptoms
- Overall enjoyment

(Bell et al,. 2022)

TAKE-HOME MESSAGES:

- Exercise is beneficial for RA
- Exercise is safe in stable populations.
- Any exercise is better than none.
- Patient centered prescription + adherence.
- Limitations in research.

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