

Rheumatoid Arthritis

Clinician Edition

A comprehensive guide to current concepts
in recognition and management for MSK
Therapists.

Jack March
The Rheumatology Physio

Preface

Rheumatoid Arthritis (RA) is the archetypal “inflammatory arthritis” yet many clinicians I speak to profess to lacking confidence in the nuances of the condition.

There is certainly no criticism from me here regarding this lack of confidence, RA will make up a relatively small component of Musculoskeletal caseloads and will most often be seen in secondary care specialist settings. It is also true though that delay to diagnosis is extremely detrimental across almost all outcome measures for individuals who do develop the condition.

This means it is of vital importance that if someone with RA attends a clinic, that the condition is recognized, appropriately investigated/referred AND good advice provided as early on as possible in the diagnostic journey to ensure the highest likelihood of a good outcome.

This book is a collection of materials that I have created over time and adapted to compile a comprehensive set of information designed for those clinicians in the Musculoskeletal and similar specialisms. My own personal journey of discovery and learning is certainly not complete and the contents of this book are my current understanding and interpretation as a Physiotherapist. It is also written with Physiotherapists (and similar professionals) in mind for the cases they are likely to see, including the information necessary to provide and the depth of follow up they will need to undergo.

Please remember that it is not the aim to replicate the skills of a Rheumatologist but to be the best we can be in our segment of the person’s journey. If you need further guidance with a specific case, please seek advice.

I hope you find this book useful and informative.

Enjoy!
Jack.

About The Author



Jack March

The Rheumatology Physio

Jack is a Physiotherapist who qualified in 2008 from Plymouth University and after rotational posts settled into Rheumatology which he has made his speciality since 2011. He has presented seminars, lectures at conferences and courses on Rheumatology subjects mostly covering the topics of Recognition, Investigation and Management. These have been aimed at Allied Health Professionals (Physios, OTs and Nurses amongst others) but have also been attended by Medical Colleagues from GP practices who have also provided positive feedback.

Jack's current roles alongside the provision of CPD include:

Rheumatology Clinical Lead for Chews Health

Operations Director of Physio Matters and Chews Media



@Physiojack



@rheumatology.physio



facebook.com/Rheumatology.Physio

Contents

05 <i>Overview</i>		
06 <i>Stages of RA</i>	08 <i>Early RA</i>	10 <i>Established RA</i>
12 <i>Muscle Loss</i>	13 <i>Tendons</i>	15 <i>Exercise Prescription</i>
18 <i>Diet</i>	20 <i>Pregnancy</i>	21 <i>Associated Comorbidities</i>
	23 <i>Conclusions</i>	29 <i>Further Resources</i>

Rheumatoid Arthritis

Overview

“Rheumatoid Arthritis (RA) is a chronic inflammatory disease characterised by joint swelling, joint tenderness, and destruction of synovial joints, leading to severe disability and premature mortality”¹. It is of interest to Physiotherapists as guidance recommends therapies that offer expertise in exercise and education regarding the condition and general health^{2,3}. The persistent synovitis of the joints presents as swelling, heat, stiffness and pain that is usually worse in the early part of the day. The presence of inflammatory infiltrate, if left untreated by medication, eventually causes irreparable erosion to the joint structure which can be extremely disabling. While the Metacarpophalangeal Joints (MCPJs) are the most commonly affected, any synovial joint can be affected and large joint replacements more commonly occur at a younger age in RA sufferers⁴.

Traditionally sufferers of RA have required large amounts of input from different specialisms such as Rheumatologists, Orthopaedic Surgeons and Therapists however improvements in early detection and management from a medical point of view has significantly improved patient outcomes and maintained function for longer⁵. This improvement in medical management has led to the requirement to change the Physiotherapy approach; no longer does it consist of splinting, wax bath treatment and hydrotherapy but instead exercise and education on self-management of the condition to return to/maintain high level function.

Rheumatoid Arthritis is an extremely variable condition in almost all of its characteristics. Symptom severity, number of joints affected, associated symptoms such as fatigue or malaise, and age of onset are all individual in their presentation. In addition to the variability of the condition, the person themselves brings with them their own beliefs, tolerances, requirements and functional challenges.

In addition to the obvious impact on joints, RA has multisystem effects causing heightened risk of Cardiovascular disease, Osteoporotic fractures, incidence of infection and development of some malignancies⁶.

The Stages of RA

There is a suggestion in the literature that there are two “stages” to a person’s experience of Rheumatoid Arthritis⁷ and this is more obviously borne out in the clinical guidelines^{2,3}. While both stages are clearly of the same medical condition, they are associated with different joint dysfunctions and therefore an important nuance to note in the management of the joints from a Physiotherapy perspective.

Vitality there is also a third stage, which is the time prior to diagnosis so technically the individual does not yet officially have “Rheumatoid Arthritis” but they do present with symptoms suggestive of this diagnosis and/or that warrant further investigation.

We could actually discuss other stages such as “at risk” but it feels a bit pedantic for our purposes so we will leave those alone for the time being.

Clinically Suspect Arthralgia

Imagine for a minute if you will that a patient arrives in your clinic. Their story unfolds as a history of symptoms such as MCPJ swelling, pain and early morning joint stiffness lasting for over 60 minutes and further questioning reveals the patient’s sister has RA. This is a strong indicator that we should include Rheumatoid Arthritis in our differential diagnosis so at this stage we will place this patient into the category of “Clinically Suspect Arthralgia” (CSA) i.e. joint symptoms we think could develop into RA.

My advice is at this stage to prepare the patient for a referral to Rheumatology, explaining why you are recommending the referral and the process this will take. It is of paramount importance that this happens as quickly as the pathway allows as we know that delay to diagnosis has a direct effect on outcome. The logistics of the referral will depend upon your local pathways and your position within them. It is worth knowing these or having somewhere easy to reference for when the time comes as awareness of the appropriate locations and clinics available to refer to will speed up the process.

Assessment

If your clinical reasoning senses are tingling, I have you covered for a bit more detail and the questions to ask. Check out page 1 of my “Suspecting RA” document for scoring systems to assess the risk likelihood of CSA. The first score relates to CSA specifically, the second is the Leiden scale which gives a risk score for the development of Rheumatoid Arthritis more specifically but requires further information such as blood results. Neither are perfect or by any means definitive but they do provide very nice guidance and add some weight to referral letters.

Referral

As mentioned above, this is going to depend greatly on your local referral pathways and your position within them. Ideally refer directly to an appropriate Rheumatology early access clinic. Include in your referral letters specifics such as duration of early morning joint stiffness, family history, the joints affected and any investigations already undertaken so that it is clear what you are referring for.

Investigations

Where appropriate and within your scope of practice, refer for investigations. Bloods including Full Blood Count (FBC), Erythrocyte Sedimentation Rate (ESR), C-Reactive Protein (CRP), Rheumatoid Factor (RF) and Anti-CCP* are necessary (*check locally regarding requesting this test as some locations don't allow requests outside of secondary care). Ultrasound scanning is the imaging of choice to look for synovitis.

Please note – a proportion of people will have negative blood results despite their symptoms. I advise to refer to Rheumatology and allow the Rheumatologist to make the clinical judgement on their relevance.

Advice

The benefit of catching patients early in their RA journey is that it is possible to induce remission in some cases. A lot of this is down to early and aggressive medical management but there are some things that the patient can do to increase the likelihood of this. It is well within a Physio's remit to give the following advice.

Stop smoking. As if we needed more reasons to discuss smoking cessation, this is yet another to add to the very long list. Even a modest reduction (though ideally completely stopping) not only increases the likelihood of remission but also reduces the severity of inflammatory disease and increases the effectiveness of medications.

Reduce BMI. Fat cells, especially abdominal ones, are immunologically active and release inflammatory cytokines (adipokines) into the system. This will exacerbate any symptoms of RA and make it harder to control.

Improve diet. You can read more detail on this in the Diet section of this book.

Activity levels. Recommend retaining activity levels as much as possible or increase as tolerated to retain function and muscle bulk. You can read more detail on this in the Muscle Loss section of this book.

Reassurance

As Physiotherapists we need to promote robustness and reassure that physical activity/exercise remains of vital importance in RA. There is no evidence that even high intensity exercise has a deleterious effect on outcome but the benefits are numerous. Encourage patients to stay active, keep up their hobbies and stay in work as far as is reasonable and the outcomes are almost universally improved.

Early RA

In the Early Disease stage, there are usually no joint erosions or deformities to contend with and instead it is acute synovitis that causes hot, swollen, stiff and painful joints. This is often coupled with a lack of understanding of the new diagnosis, concern regarding the future and side-effects of new medications. Patients often find hand function extremely restricted with decreased range of motion at the MCPJs and increased pain with gripping activities, which is particularly exaggerated in the morning. Similar problems befall the feet as the Metatarsal-Phalangeal Joints (MTPJs) are often affected with the same swelling, temperature, stiffness and pain, affecting any weight bearing activities and driving.

It is important to keep up to date with the progress of the patient and their medical management during this stage. Medicine changes, escalation and titration are often frequent as the Rheumatologists try to gain as much control as

possible as quickly as possible, this is often hampered by weaning from oral steroids or side-effects from the medications. An understanding of the time it takes many of these drugs to take an effect upon symptomology is important. Methotrexate can take 3 months to provide significant clinical effect.

Some patients will experience symptom control but retain some “subclinical synovitis”. While not necessarily something the majority of us clinicians will need to worry about, it is something to consider if you can perform Diagnostic Ultrasound. Subclinical synovitis is a phenomenon whereby the person has minimal or no symptoms but demonstrates an ongoing inflammatory process that might affect the structure of the joints over the course of time. More importantly for Rheumatologists is to understand how this affects outcomes for people in the longer term if their disease is not fully controlled.

Symptomatic Treatment

Treatment in this stage of RA falls into two broad sections, Education and Maintaining Function. Unfortunately, Therapists are not that helpful in the early stage at actually managing synovitis caused by an auto-inflammatory condition, although there remains a lot of things that we can do to help the individual.

Education at this stage of the disease process is of vital importance. Topics covering the pathophysiology of the condition, signposting to the National Rheumatoid Arthritis Society (NRAS) or equivalent outside of the UK, maintaining activity levels and assisting with modifying these as necessary should be covered as quickly and with as much detail as possible tailoring the advice to the individual. The more function that can be retained the better the outcomes will be later. There are studies that show there are no long-term ill effects to maintaining exercise levels even at high intensity in this population and people often find this reassuring. In my experience, meeting somewhere in the middle at this point is sensible although no harm will come to people who take part in intense exercise with florid synovitis, it certainly isn't nice and not everyone is up for it!

To the patient I will say something along the lines of “you are ok to run/lift weights etc” but then open it up to the individual to actually make the suggestions and decisions on the amount/intensity of the activity they want to do. Throughout the process maintain a reassuring and encouraging narrative that they can try higher intensity activities alongside their chosen ones.

Adding in specific exercises at this stage is entirely dependent upon the individual. Maintaining range of motion I think should be a priority especially in the hands. Any strength exercises on top of this are a bonus and cardiovascular work another bonus. Aim for maintenance but increase as tolerated!

Reassure and provide ways tailored to the individual to help them to continue functioning at as high a level as possible. Retaining work status is vital to outcomes so pacing, adapting activities and where appropriate liaising with employers may be necessary in the short to medium term.

Beginning a Hand exercise program is recommended regardless of the symptoms presenting in the hands. I have provided an example program at the end of the book. Specific hand therapy is a good option if available and note that both functional and resting splinting is required to be bespoke and dealt with by those with experience.

Adjunct therapies are likely to be of minimal benefit and I would not advocate the use of acupuncture/dry needling for those on immunosuppressive medications and/or with systemic inflammation.

Future Proofing

As mentioned above, providing reassurance and education early is important. Advise why there is a need to improve general health practices including maintaining and in all likelihood increasing exercise levels. Smoking cessation is necessary due to its deleterious effects on disease outcomes and medication effectiveness. Sleep, dietary intake and stress management strategies are all lines of education to explore with each individual.

Ensure the patient is aware of all the stakeholders in their care and the role they play (this will vary dependent on location and pathways) and how they can access these stakeholders when required. This is important to allow efficiency and ease for the person to get the help they need. While it does vary, medication queries are usually handled by Rheumatology Specialist Nurses, functional issues by the Therapists and other health queries by their GP.

Established RA

Theoretically we are dealing with a relatively stable disease process at this point, which will involve a combination of pain, ongoing inflammation and potentially joint deformity in varying degrees dependent upon the person. In reality there remains the chance of “flares”, acute on chronic periods of inflammation which can signify a lack of control over the condition previously thought to be handled by the current medication regime.

We need to bear in mind when we think about how the person is going to look in this stage that there are likely five or more subsets of RA that are as yet undefined.

For simplicity's sake these might be "erosive", "non-erosive", "relapsing-remitting", "monoarthropathy" and "drug-resistant" (please note I have made these names up to illustrate my point). The number of joints affected, the severity of joint damage (sometimes there will be none) and the regularity of flaring will be affected by multiple factors such as genetics, co-morbidities, time since onset, delay to diagnosis and medication effectiveness (as well as many more).

Joint deformity is something that will need to be considered at this stage, most likely of the MCPJs and MTPJs but also leading to joint replacements in the usual suspects - the knees, hips and shoulders. It is important to remember that there may be erosive damage without externally visible joint deformity.

Persistent pain in this cohort is likely under-reported. These people have often lived with long periods of pain, loss of function, stress and lack of sleep but their pain is often put down to continued disease process whereas there can be no argument against some sensitisation of the nervous system/pain experience during the period of time when active disease was present.

Symptomatic Treatment

It probably goes without saying after the above section of this book that this is going to vary significantly from person to person so I have no recipe for you. Umbrella ideas to consider are education, an exercise program and functional assistance.

Education again is going to vary dependent upon the person in front of you but don't assume they have a good understanding of the condition and check they know their medicine regimes and that they adhere to them. General health advice such as smoking cessation and diet are appropriate. Also consider other co-morbidities especially any that will affect bone or cardiovascular health.

Exercise programs here are again of vital importance with graded exercise programs targeting general strength, cardiovascular fitness, bone density and any functional requirements being key. It may be necessary to be inventive if structural changes prevent specific exercises. Lack of wrist extension for example may prevent pushing.

With regards to symptom increases there is no evidence that even high intensity exercises are detrimental to symptoms or joints but we need to be pragmatic with increases in the short term. I try to stick to the following advice: keep pain increases within tolerable levels but not affecting function. Swelling/pain/redness is acceptable as long as it reduces back to normal (for the patient) within a few hours and is not worse during the night or first thing in the

morning. Be guided by the individual and take a reassuring approach that encourages feelings of robustness.

Functional assistance can take various forms, from splints and braces which can be useful, to adaptations of technique or equipment. For example, thickening the handles of cutlery can make it much easier to grip. In all honesty, I often refer to Occupational Therapy colleagues for this portion of management as I have found them exceptionally skilled in this area.

Muscle Loss in RA

I suspect many outside the sphere of Rheumatology think RA is purely a joint-related problem and the results of one paper in particular highlight the widespread systemic nature of the disease.

The paper in question was interesting and clever in its design. The numbers used were quite small but then there was quite a logistical undertaking for each participant. The researchers split participants into four groups, newly diagnosed RA, active RA, remission RA and controls. The definitions of these don't really matter for our purposes and are self explanatory.

The researchers measured strength of knee extension, knee flexion and grip. They also used quantitative MRI to look at muscle bulk in the groups. The aim was to find out if there were between-group differences.

We need to think much more broadly as Therapists to treat multiple areas of concern. Joint disease and muscle strength will affect function and further afield RA affects the cardiovascular system, which we need to consider in our treatment plans and referrals.

Results

The researchers showed (admittedly with small numbers) that muscle volume and strength was lower than controls in all the RA categories. This was lower than controls even in the New RA group suggesting this process begins very early into disease.

Muscle volume and strength does improve once in clinical remission however it does not reach the levels of the controls.

Clinical relevance for Therapists

Improving muscle volume and strength is certainly in the domain of Therapists and may well be a necessity as clinical remission in itself is not enough to return these measures to normal. I would advise that **all** RA patients regardless of disease activity receive a tailored exercise/loading/activity program to help address these likely deficits.

Further to this **all** people suspected of having RA (and I would add any inflammatory arthritis) should be encouraged to maintain activity as far as they are able in order to limit the loss of muscle volume and strength and/or have a concurrent referral for an exercise/loading/activity program while awaiting diagnosis to try to get ahead of the curve.

It might also be appropriate to discuss protein intake as a way of mitigating muscle volume and strength loss, which can be done by the Therapist if they are confident or by appropriate referral.

Conclusion

It may be argued that this is excessive but I would disagree. I don't believe it would take many resources to implement a personalised program aimed at maintaining or even increasing muscle volume, which could well have a significant effect on many health and functional outcomes.

I hope similar studies are conducted in this fashion. One where they compare those with RA who completed an exercise program with those that didn't would be awesome if there are any researchers reading this...

Tendons

Almost all the information I have seen is regarding tenosynovitis of the hand. I was able to find some bits and pieces for other areas but nothing I could deem conclusive. As such I have decided to stick to the hand in this section of the book.

Tendon issues associated with RA

As mentioned previously, tendons are affected directly by RA. These effects happen early and the presence of tenosynovitis has been shown to predict the onset of RA. As the course of the disease progresses, tendon damage becomes

surprisingly (to me anyway) prevalent and tendon rupture becomes a risk as well. Once “remission” is achieved subclinical tenosynovitis can still remain and can be used as a measure by Rheumatologists to ensure optimal management is reached.

Enthesitis is a much less common occurrence in RA compared to other inflammatory arthropathies (such as Psoriatic Arthritis and Spondyloarthropathy) as it is primarily a synovitic condition (the auto immune response is “targeted” at synovial tissue) whereas the other arthropathies are more enthesitic in nature (the auto immune response is “targeted” at enthesitis sites). That being said there is significant overlap in the conditions and also an individualised nature of presentation so an enthesitis is not out of the question.

Prevalence

Tenosynovitis of the flexor/extensor tendons of the hand is reported to affect around 45%-50% of Rheumatoid Arthritis patients on ultrasound and MRI. I note it is theorised that this may be correlated with the severity of reported joint stiffness, i.e. it may account for the variance experienced on an individual basis. Simply put, more tenosynovitis = more joint stiffness, not necessarily synovitis of the joints themselves. Please remember that is a THEORY in the literature.

Implications

As mentioned, tenosynovitis is highly prevalent. Protracted inflammation of the tendons can result in damage or even eventually rupture of the affected tendons. In one study Ultrasound scanning detected tendon damage in at least one tendon of 75% of the recruits. I have so far been unable to confidently conclude the rate of tendon rupture but the literature surrounding the hand seems to indicate that this mostly occurs in the extensor tendons.

Advice

Evidence-based advice is sparse here so please bear in mind the following is a combination of my experience and opinion...

Remember these tendon issues have a pathological cause based in an auto-immune condition and as mentioned there is a high rate of tendon damage in Rheumatoid Arthritis patients. Considering this, I would urge Therapists to firstly consider that the patient’s medical management has been optimised. This will likely involve collaborating with the Rheumatologist. In private practice your access will vary and discussion with/education of the patient to feedback to their consultant is going to be key.

Once this process has either begun or concluded, if there are symptoms remaining then essentially we are looking at treating them like we would any other tenosynovitis. My experience with these tendons is that their reaction to therapies is variable. My Occupational Therapy colleagues have had some success with splinting to offload the tendon during high load activities.

Physiotherapy treatments specifically aimed at the tendon comprise our favourite strategy: **LOADING**. Gotta love loading a tendon. I am not going to delve into graded loading of tendons as there are far, far better Therapists for that kind of information. My experience with these specific tendons however is a dichotomous one. The tendons either react as you might expect them to or they react really badly. I try to be upfront with patients about this, it isn't a true load-based tendon problem so the reaction to loading may well follow an unusual pattern.

I think there is a lot of mileage in "person management" in this scenario; sleep, general conditioning, stress management and so forth are really important as these not only have a significant impact on tendon health but also Rheumatoid Arthritis itself.

Exercise Prescription

Let's talk about prescribing exercise for Rheumatoid Arthritis. First I want to cover some basic advice that should help frame the rest of the blog.

- Exercise is safe for people with RA.
- Exercise should absolutely be encouraged in RA.
- We need to cover the bases of cardiovascular fitness, strengthening and flexibility.
- One of the biggest barriers to exercise in RA is fear.

So to elaborate a little on those bullet points: Research has shown that exercise, including high intensity exercise, is safe in Rheumatoid Arthritis and it does not increase any measurable component of disease activity. Exercise is a vital component to maintain function, bone density, cardiovascular fitness and flexibility. People with Rheumatoid Arthritis demonstrate reduced muscle bulk and strength compared to matched controls and addressing this should be

considered for all. One of the biggest barriers to exercise is fear of increasing symptoms or worsening the arthritis and we must work hard to ensure we are reassuring people that this is not the case by individualising the programs appropriately and checking the narratives people are taking away from our sessions.

Components

All people with Rheumatoid Arthritis (and to a degree I would argue, those *suspected* of having it as well) should be encouraged to undertake exercise programs that contain the following components:

Cardiovascular exercise

Strengthening exercises

Flexibility movements

Hand exercise program (example)

The amount of these components will vary per individual depending upon their circumstances, functional limitations, personal preferences and access.

As a starting point, ensuring people reach the minimum recommended activity levels will be challenge enough for some.

Intensity

There are no special rules regarding intensity in this cohort of people. Ensure you are considering the goals of the exercise program when setting it. I advocate for graded increases in the program as appropriate for the individual just as you would with any exercise prescription. They need to overcome adaptation and retain a level of challenge to the program.

Provide the individual with the skillset to adapt the intensity of the program themselves so that when it starts to get too easy they can increase the parameters. This might be achieved by increasing load, duration, speed, sets, reps... For people with RA it is also important to teach them how to adapt these components in a “flare” situation appropriately. Allow them to continue with a modified version of the program while their symptoms settle down. It’s not that exercising through a flare is problematic per se but it will likely feel pretty damn awful. Other options are to exercise around flared joints.

Variation

Similar to the above, ensure the person has variation within their programs, accommodation is one issue but so is boredom! Plus the ability to pick and choose components to suit any flared joints or other issues which allow them to continue a program despite these hurdles.

Individualisation

Ask the person what they would like their program to consist of and achieve and generate options relating to that. Gym goers are relatively easy to sort a program for but consider those whose main activities are walking the dog or gardening. How can you adapt these to include the 4 components discussed at the start of the blog? Some ideas I have implemented in the past include:

- Adding a weighted back pack during activities.
- Graded increases in duration or speed of dog walking.
- Incorporating heavier jobs into gardening.

All of these components can again include graded increases to continually challenge the individual.

Function

If someone presents with a functional deficit, provide them with exercises to try and improve that function.

Considerations

While exercise does not pose a danger to a joint affected by Rheumatoid Arthritis, we still need to consider the repercussions. We know that it is normal to experience soreness especially after starting a new activity and people should be counselled on what to expect. With regards to inflammation, it is likely that a joint will show increases in one or more of the following: swelling, redness, heat and pain. This needs to be an acceptable level of increase to the individual and should resolve (to pre-exercise state) by the following morning. This is more from a tolerance and comfort perspective for the person than any other reason relating to pathology. It is not going to be very pleasant if your exercise program keeps you up all night or prevents you from walking for two days afterwards.

Of course what is acceptable or tolerable for one person will not be for another so work with them on this and be prepared/prepare them to get this wrong on occasion.

Diet

Introduction

Here are some things I have heard over time:

“Acidic foods make RA worse” – I have never seen any evidence for this.

“Cider vinegar makes RA better” – I have never seen any evidence for this.

“Anti-inflammatory foods (garlic and others) help Rheumatoid Arthritis” – I haven’t seen any evidence for this either.

None of this really surprises me; individuals with RA are as unique as their diets and I see no biologically plausible reason for people to react in a uniform way to certain foods. Overeating is “pro-inflammatory” in that processed foods and excessive calorie intake lead to increased body fat which releases inflammatory cytokines into the system. This MAY increase disease activity so reducing body fat MAY decrease disease activity.

Mediterranean Diet

This diet is the one I see mostly recommended for RA patients (ironically they eat tonnes of tomatoes in the Med, which are acidic). It is essentially a balanced diet with lots of vegetables and protein. Even this though doesn’t seem to have a direct affect on RA disease activity but probably helps with general health.

Other Supplements

We discussed very briefly protein supplementation in previous sections. This is worth exploring but really dependent upon the individual and their circumstances. Advised protein intake varies wildly and I have seen recommendations anywhere from 0.7-2g of protein per kilo of bodyweight per day and some even higher values in trained individuals. I make the maths easy

for myself and suggest 1g/kilo as a baseline.

Ask people to keep a diary of how much they are consuming on average over a few weeks and if protein intake is drastically below that then supplement it in an appropriate manner. If you think the person requires higher values (e.g. there is clear muscle bulk loss or they are very active) then I would seek the advice of a dietician. This may also be the case for those who have food intolerances or circumstances limiting their consumption of meat or dairy products.

Further supplements (as far as I can work out from the research) have not shown any significant benefits, which includes chondroitin, turmeric, cod liver oil, glucosamine amongst others. If someone is desperate to try them, I don't spend too much energy trying to dissuade them, I just ensure they know it's unlikely to help significantly. If they are already using supplements and swear they help, who am I to tell them otherwise? Unless their financial situation is such that purchasing these is affecting other areas of their life.

How do we make sense of this?

It is frustrating that we can't specifically help people's arthritis with diet but it doesn't mean optimising diet is not important. As mentioned above, a healthy, balanced diet will help with general health (RA patients are at a higher risk of Cardiovascular disease and have a higher BMI than the rest of the population). Plus protein supplementation may be appropriate to maintain muscle bulk in some.

Other supplements are an interesting conundrum. Some people are already taking them and find them helpful. It doesn't really matter if this is a true biological response or a placebo or a combination. I have no issue with them continuing as long as they have optimised medications. Another consideration is a financial one; is it a good use of their money to pay for these supplements? It would be much better to use the money towards a gym membership for example. I discuss this with them and come to a joint conclusion as to whether it's worth continuing.

Specific foods can be implicated by individuals, which again this depends on them. It differs if it's an entire food group (like meat), their favourite food in the world or a food they couldn't care less about. If it's in the former two then suggesting reintroduction in a controlled manner or even via a dietician if it potentially has a big impact on health.

Pregnancy

Fertility and Conception

These are fundamentally linked in the “getting pregnant” part of pregnancy. I hope I don’t have to go too much further into this and we all know where its going...

This portion of the process is made complicated by a few factors in women with RA. Diagnosis is linked with longer “Time To Pregnancy” with a higher proportion of women taking longer than 12 months to conceive than matched controls. This is significantly worse with higher levels of disease activity compared to remission. Higher disease activity signifies higher levels of pain and worse function. It is also medicated more aggressively and many medications used to treat RA have a direct effect on fertility. This as a combination means it is not a surprising revelation that women with RA take longer to get pregnant.

Disease activity during pregnancy

Rheumatoid Arthritis symptoms tend to improve during pregnancy with 54-95% of women reporting decreased symptoms.

Disease activity post-partum

Frustratingly just as there becomes a need to carry around and look after a newborn, 62-90% of women will experience a flare in symptoms from their RA.

Pregnancy Complications

From reading the literature this is exceedingly difficult to calculate due to confounding factors and there is likely to be a difference between planned and unplanned pregnancies due to medication use during conception. My summation is that women with RA are somewhat more likely to have pre-term births and/or Caesarean section than controls. There is a slightly higher risk of pre-eclampsia but miscarriage rate is likely to be comparable (this again is possibly an underestimation in unplanned pregnancy).

Women with RA tend to have slightly smaller or lower birthweight children but

this has not been shown to have a long term effect on the individuals.

Men

There is a dearth of literature on the impact of male RA on offspring. Some medications can affect fertility but there isn't much other than expert opinion to suggest an effect on the child. Advice would be the same as for women.

Advice

Practically, other than educating on the above information, my best advice is that any person with a diagnosis of RA consults their Rheumatologist prior to trying to conceive. There is a delicate balancing act and may be some concessions to be made with regards to optimising disease activity without affecting the likelihood/outcome of pregnancy. It is my opinion that there is no place for professionals outside of the Rheumatology consultant or Rheumatology Specialist Nurse to try and provide this counselling without specific training as it is a complex minefield involving the medications.

Symptom management, activity modification/maintenance however is very likely going to be required post-partum alongside any necessary management due to the effects of giving birth and here Physiotherapists can play a key role.

Associated Comorbidities

Rheumatoid Arthritis is a little different to other auto-inflammatory disorders in that it usually does not present with associated co-morbidities until later on in the disease process. Spondyloarthritis for example commonly co-exists with Crohn's Disease, Ulcerative Colitis, Psoriasis or Acute Anterior Uveitis. RA is mostly limited to effects on the joints and tendons in its earlier stages.

Later in the disease process however we do see other issues begin to arise, likely due to the presence of systemic increased levels of inflammation over extended periods. I have broken these down into a few arbitrary categories just to illustrate the things we might see but also as a way of helping you if you see someone with longstanding RA to assess them holistically for other care that might be needed.

Cardiovascular Disease

People with RA are more likely to suffer with heart attacks or strokes due to the systemic inflammation within the blood stream. Pulmonary Fibrosis may affect up to 40% of people with RA at some point in their disease course although I hope with the reduction in time to diagnosis and better treatment paradigms this number will be lower. It is possible in some patients that Methotrexate will contribute to the development of Pulmonary Fibrosis. We should consider referral to specialists if we see anyone with respiratory symptoms.

Joint Complications

We are aware of the direct effect of the auto-inflammatory process on the joints; erosions and structural change are common in untreated or refractory cases. There are other effects as well, for example there is a higher likelihood of symptomatic Osteoarthritis, a higher frequency of joint replacements and a higher risk of developing Osteoporosis in an individual with Rheumatoid Arthritis.

In the case of Osteoporosis, we should assess everyone with RA over the age of 40 for their risk. I like the FRAX tool for this as it is easy and quick to use. Be extra vigilant in those who have required steroids in the past or have a family history of Osteoporosis and/or hip fractures.

Psychosocial Impacts

Some studies have shown that people with RA are 2-4 times more likely to have depression than those without. Approximately 30% of people with RA are obese (BMI defined) and this does correlate with disease activity.

Considering the above statistics it is also unsurprising that at least 30% of people with Rheumatoid Arthritis satisfy the criteria for a Fibromyalgia diagnosis. The combination of chronic inflammation, pain, sleep disturbance, obesity and depression are a recipe for persistent pain states.

Work is of high importance and there are high levels of both absenteeism and presenteeism in people with Rheumatoid Arthritis. These issues are more likely and more pronounced in those with higher disease activity and/or high levels of fatigue.

Conclusions

Rheumatoid Arthritis is on the face of it a simple disease to recognize but its effects are wide-ranging and long lasting. The fringe cases who do not present as classical disease with negative blood tests are easily missed or misdiagnosed.

We need to retain vigilance for inflammatory arthritis in the clinic and I hope this book has given you the tools to enable you to do that effectively and confidently. In this time of aiming to reduce the medicalisation of painful symptoms, reducing investigative burdens and with time-poor clinicians, it is imperative that we “Get It Right First Time” or maybe more appropriately “Get It Wrong Less Often”.

Physiotherapists, First Contact Practitioners and everyone else in the patient journey prior to the Rheumatologist has a vital role to play in reducing the time to diagnosis, educating the person and providing excellent care.

By engaging in this book, you have taken a strong step forwards to helping people with RA or suspected of having the condition and to this I say well done! I hope it has matched your expectations and provided you with information to increase your confidence.

I am always keen to hear constructive feedback on the creation of these resources, further reading for me to increase my own knowledge and gaps in the available information that you may require. Please do get in touch, I am always happy to discuss further.

Thank you for reading and if you enjoyed this book you can check out the others I have written too.

Jack

Clinically Suspect Arthralgia Score

Joint symptoms of recent onset (<1year)

MCPJs affected

Morning stiffness (>60 mins)

Symptoms worst in early morning

1st degree relative with RA

Difficulty making a fist

Positive MCPJ or MTPJ squeeze test

A score of 3+/7 symptoms is consistent with “Clinically Suspected Arthralgia”

Leiden Clinical Prediction Rule

What is the age in years?	Multiply by 0.02 _____
What is the sex?	
a. In case Female	1 point _____
What is the distribution of involved joints?	
a. In case small joints hands/feet:	0.5 point _____
b. In case symmetric	0.5 point _____
c. In case upper extremities	1 point _____
d. In case upper and lower extremities	1.5 points _____
What is the score for morning stiffness on a 100-mm VAS?	
a. In case 26-90 mm	1 point _____
b. In case >90mm	2 points _____
What is the number of tender joints?	
a. In case 4-10	0.5 points _____
b. In case 11 or higher	1 point _____
What is the number of swollen joints?	
a. In case 4-10	0.5 points _____
b. In case 11 or higher	1 point _____
What is the C-reactive protein level?	
a. In case 5-50 mg/litre	0.5 points _____
b. In case 51mg/litre or higher	1.5 points _____
Is the patient Rheumatoid Factor positive?	
a. If yes	1 point _____
Are the anti-CCP antibodies positive?	
a. If Yes	2 Points _____
	Total score _____

A score of 9+ is optimal prediction, 8+ is high risk.(3)

Name

Address

Email

Phone

Doctor

The GP Surgery

Address

Address

Regarding Ms Mary Doe; address; DOB

Dear Doctor,

I had the pleasure of meeting Ms Mary Doe for an assessment on 01/02/21, her main complaint is of bilateral swelling, pain and lack of function in her hands.

On further questioning, the symptoms are worst in the morning with stiffness of the MCPJs lasting a full hour and then easing. The swelling remains for the whole day but her hands are more functional if she keeps them moving. Squeeze test of both hands is very painful.

The symptom onset was insidious 3 weeks ago and has not improved at all. She has not had similar symptoms but recognises them as similar to her sister who has Rheumatoid Arthritis. The symptoms are certainly consistent with “Clinically Suspect Arthralgia”

She is otherwise well and taking no medications. She works as a lawyer and is struggling with writing and typing.

We have discussed the possibility that she has developed Rheumatoid Arthritis and this requires investigation by a Rheumatologist which she is keen to seek as soon as possible. I have advised her regarding maintaining activity levels, utilising ad hoc anti-inflammatories and avoiding alcohol/smoking.

Mary retains my contact details in case the situation changes and I would be happy to review her if this is the case. Please do not hesitate to contact me for further information.

Thank you and kind regards

Referring Clinician



Ball Squeeze

Squeeze a small ball in your hand. Use this to strengthen your thumb and fingers. You can also use putty, a small towel, or other small squeeze items.

Hold for 3-5 Sec | Repeat 10 times | Perform up to 3 times daily | Perform Both Sides



Wrist Flexion Band

Rest your hand and wrist on a table. Hold an exercise band, and bend your wrist to create resistance in the band. This is a strengthening exercise for your wrist, forearm and elbow.

Hold for 3-5 Sec | Repeat 10 times | Perform up to 3 times daily | Perform Both Sides



Wrist Extension Band

Rest your arm on a table with your palm facing down. Hold an exercise band, and extend your wrist to create resistance in the band. This is a strengthening exercise for the wrist, forearm and elbow.

Hold for 3-5 Sec | Repeat 10 times | Perform up to 3 times daily | Perform Both Sides

This example program incorporates a resistance component. I have chosen to include a compound grip, wrist flexion and wrist extension. Depending upon the individual's characteristics I might decide to change one of these to a more mobility type movement e.g. if there is a difficulty with flexion I might adapt this exercise in the short term.

Further consider gripping method, resistance level, reactivity of the symptoms and other variables such as the amount of time or resources available to the person.



© rehabmypatient.com

Elbow Supination With Band

Bend your arm to 90 degrees, and holding a band in your other hand, rotate your forearm to feel tension in the band. The palm will start facing up and should finish facing down. You will feel a tension across the outer part of the elbow. This will strengthen the supinator muscles around the elbow.

Hold for 3-5 Sec | Repeat 10 times | Perform up to 3 times daily | Perform Both Sides



© rehabmypatient.com

Resisted Extension with Band One Arm

Holding onto an exercise band, pull your arm backwards. Relax, and repeat. You will feel the muscles behind the back of the arm (triceps) contracting.

Hold for 3-5 Sec | Repeat 10 times | Perform up to 3 times daily | Perform Both Sides



© rehabmypatient.com

Band Flexion 30 Degrees

Place an exercise band under your foot, and lift the other end upwards. Take your arm out slightly to the side (30 degrees from the front). When you have reached your limit, move your arm back down. This exercise will improve mobility and strength to your shoulder.

Hold for 3-5 Sec | Repeat 10 times | Perform up to 3 times daily | Perform Both Sides

For this example program I have decided to also include some proximal work for the upper limb, which could be further adapted to load the elbow, offload the shoulder and so on.

It may also be useful to vary the position e.g. kneeling, 4-point kneeling or supine.

Utilising other resistance methods such as body weight, free weights or cable machines might also be useful adaptations.

Thank you to Rehab My Patient for their excellent exercise prescription software used to create this sample program. <https://www.rehabmypatient.com/>

Further Resources

[National Rheumatoid Arthritis Society](#)



More From Jack

[Rheumatology.Physio](#) contains a wealth of learning resources concentrating on Rheumatology topics which are free to access. There are also booklets including the AtAGlance Series (Rheumatology, Spinal Masqueraders, The Hand and The Hip), a clinical scenarios eBook and an Audiobook.



Jack also runs Continuing Education Courses for MSK Therapists and online and in-person courses are available to book with bespoke departmental courses on application. There is also a 6-hour pre-recorded course available covering Rheumatology recognition and management in great depth. [Find all of these here](#)




The Rheumatology.Physio Podcast channel contains the much-loved RheumMates podcasts and weekly blog reads. It is available on all podcast channels, [you can find your favourite here](#)





Jack sees Rheumatology patients via virtual consultation for second opinions, management advice and guidance. [More information and booking here](#)



Friends

Jack runs on a fuel of coffee and there is none better than [UWhoLifestyle Coffee](#). Delivered to your door, ad hoc or on subscription and environmentally friendly packaging. 

[Physio-Matters.com](#) is frankly the best place to get CPD with all the Therapy Live conference recordings and a whole lot more on offer for an absolute bargain price. 

[HMDG](#) created and manage the Rheumatology.Physio website and Jack would not trust anyone else to work with for websites or Marketing. You will never regret a call with them to see how they can bring you amazing results. 

Thank You

Thank you to Felicity Thow who kindly proof reads my writing, makes it coherent and removes the millions of excess commas.

Thank you to Jack Chew, Michael Schumacher and the rest of my colleagues at Physio Matters who encourage me to stretch myself on these mad ideas we have.

Thank you to everyone who has bought, shared or engaged with any of my content. It genuinely keeps me creating when I receive feedback that it has helped someone in some small way.

Reference List

1. Alehata D, Neogi T, Sliman A, Funovits J, Felson D, Bingham C, Birnbaum N, Burmester G, Bykerk V, Cohen M, Combe B, Costenbader K, Dougados M, Emery P, Ferraccioli G, Hazes J, Hobbs K, Huizainga T, Kavanaugh A, Kay J, Kvien T, Laing T, Mease P, Menard H, Moreland L, Naden R, Pincus T, Smolen J, Stanislawski-Biernat E, Symmons D, Tak P, Upchurch K, Vencovsky J, Wolfe F, Hawker G. 2010 Rheumatoid Arthritis Classification Criteria. *Arthritis and Rheumatism* 2010;62(9):2569-2581
2. Luqmani R, Hennell S, Estrach C, Birrall F, Bosworth A, Davenport G, Fokke C, Goodson N, Jeffreson P, Lamb E, Mohammed R, Oliver S, Stableford Z, Walsh D, Wasbrook C, Webb F. British Society for Rheumatology and British Health Professionals in Rheumatology Guideline for the management of Rheumatoid Arthritis (The first 2 years). *Rheumatology* 2006;45(9):1167-93. Brinjikji, W et al. "Systematic literature review of imaging features of spinal degeneration in asymptomatic populations." *AJNR. American journal of neuroradiology* vol. 36,4 (2015): 811-6. doi:10.3174/ajnr.A4173
3. Luqmani R, Hennell S, Estrach C, Basher D, Birrell F, Bosworth A, Burke F, Callaghan C, Candal-Couto J, Fokke C, Goodson N, Homer D, Jackman J, Jeffreson P, Oliver S, Reed M, Sanz L, Stableford Z, Taylor P, Todd N, Warburton L, Washbrook C, Wilkonson M. British Society for Rheumatology and British Health Professionals in Rheumatology Guideline for the management of Rheumatoid Arthritis (after the first 2 years). *Rheumatology* 2009;48(4):436-9
4. Lee J, Choi C. Total Knee Arthroplasty in Rheumatoid Arthritis. *Knee Surgery and Related Research* 2012;24(1):1-6
5. Stoffer M, Schoels M, Smolen J, Aletaha D, Breedveld F, Burmester G, Bykerk V, Dougados M, Emery P, Haraoui B, Gomez-Reino J, Kvien T, Nash P, Navarro-Compan V, Scholte-Voshaar M, Vollenhoven R, van der Heijde D, Stamm T. Evidence for Treating Rheumatoid Arthritis to Target: Results of a Systematic Literature Search Update. *Annals of the Rheumatic Diseases* 2016;75:16–22.
6. Giles J. Cardiovascular Disease In Rheumatoid Arthritis: Current Perspectives on Assessing and Mitigating Risk in Clinical Practice. *Best Practice & Research Clinical Rheumatology* 2015:1-15

7. van Beers-Tas M, Turk S, Schaardenburg D. How does established rheumatoid arthritis develop, and are there possibilities for prevention? *Best Practice & Research Clinical Rheumatology* 2015;29(4-5):527-42
8. Sahbudin et al, The role of ultrasound-defined tenosynovitis and synovitis in the prediction of rheumatoid arthritis development. *Rheumatology* 2018;57:1243-1252
9. Iustina et al, Structural damage in rheumatoid arthritis: comparison between tendon damage evaluated by ultrasound and radiographic damage *Rheumatology* 2016;55:1042:1046
10. Markatseli T, Voulgari P, Alamanos Y, Drosos A. Prognostic Factors of Radiological Damage in Rheumatoid Arthritis: A 10-year Retrospective Study. *The Journal of Rheumatology* 2011;38:44-52
11. Gioia, C.; Lucchino, B.; Tarsitano, M.G.; Iannuccelli, C.; Di Franco, M. Dietary Habits and Nutrition in Rheumatoid Arthritis: Can Diet Influence Disease Development and Clinical Manifestations? *Nutrients* 2020, 12, 1456.
12. van Steenbergen et al. EULAR definition of arthralgia suspicious for progression to rheumatoid arthritis. *Ann Rheum Dis* 2017;76:491–496.
13. van der Helm-van Mil et al. A Prediction Rule for Disease Outcome in Patients With Recent Onset Undifferentiated Arthritis. *ARTHRITIS & RHEUMATISM* 2017 56(2):433–440
14. McNally et al. Diagnostic accuracy of a clinical prediction rule (CPR) for identifying patients with recent-onset undifferentiated arthritis who are at a high risk of developing rheumatoid arthritis: A systematic review and meta-analysis. *Seminars in Arthritis and Rheumatism* 2014 43:498–507



RHEUMATOLOGY.PHYSIO

ONLINE.

Proof Reading – Felicity Thow
Copyright – Jack March