

**A Survey to Explore the Current use of Injection Therapy as Part
of a Conservative Treatment Plan for Degenerative Meniscal
Lesions within UK Based, Injection Trained Physiotherapy
Members of the Society of Musculoskeletal Medicine.**

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Conflict of interest

Named author G. Smith is a current Fellow of The Society of Musculoskeletal Medicine.

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Abstract

Objectives

To explore the current use of injection therapy as part of a conservative treatment plan for degenerative meniscal lesions (DML) within UK Based Physiotherapy Members of the Society of Musculoskeletal Medicine (SOMM) with Injection Training.

Methods

An online survey was distributed via email to all UK based, SOMM physiotherapists who had trained and received their injection diploma through the SOMM (n=203) with a response rate of 32% (n=64). The data was analysed using descriptive statistics, contingency tables and the Fisher's exact test. A p value ≤ 0.05 was considered significant. Ethical clearance was gained through the SOMM and Middlesex University.

Results

Of the respondents 98% (n=62) of current UK based, injection trained SOMM physiotherapists utilise conservative treatment for DML of which 81% (n=52) include injection therapy. 77% (n=49) who currently use injection therapy for DML administer a combination of 40mg Depomedrone combined with local anaesthetic via a patellofemoral approach.

Those not using injection therapy as part of their management of DML attributed this to local department restrictions and lack of evidence.

Discussion

This research has helped further understand the use of injection therapy for DML and where it fits within a conservative treatment plan. The benefit from injection therapy reported by respondents is similar to previous research but could be influenced by injection exposure and potentially steroid choice. Overall a consensus is starting to appear regarding dosage, steroid and administration; however differences are identified when comparing individual department guidelines to CSP and NICE guidelines.

Keywords: Injection therapy; Steroid; Degenerative meniscal lesion; Conservative treatment; Society of Musculoskeletal Medicine; SOMM; Physiotherapist

Introduction

A degenerative meniscus is a meniscus that has started to deteriorate over time, becoming less elastic and compliant leading to failure through minimal trauma eg: squatting or twisting [1]. Meniscal degeneration is common amongst the middle aged and elderly population [1]. Patients over the age of 45 are likely to have degenerative meniscal changes on MRI [2]. Occupation plays a big external factor towards DML with manual workers and athletes most at risk due to the increased chance of twisting the knee on a fixed foot or over pressured knee flexion leading to more strain on an already weakened structure [3]. With retirement age increasing, DML secondary to occupation is becoming increasingly common [4].

Around 80% of meniscal tears treated surgically are degenerative in nature [5]. One meniscal resection costs the National Health Service (NHS) around £3000. [6].

For degenerative menisci to be surgically treated a patient needs to present with either: A clinically locked knee and / or attempted and failed conservative treatment [7].

Unless the knee is clinically locked all other DML symptoms do not fall under the surgical category, therefore conservative treatment including injection therapy should be considered initially [7].

The outcome of injection therapy for DML is broad and vague; it can give anywhere from 3 days to over 6 months relief. Presently it is a modality that is not widely used for DML but can provide as much benefit as present methods of treatment [8].

Musculoskeletal medicine is the examination, diagnosis and treatment of non-surgical lesions of the musculoskeletal system. The Society of Musculoskeletal Medicine (SOMM) - formerly the Society of Orthopaedic Medicine - is an educational charity that was formed in 1979 to develop the seminal work of Dr James Cyriax MRCP and to promote the theory and practice

of musculoskeletal medicine. The Society provides a programme of postgraduate courses for physiotherapists and medical practitioners that run throughout the UK, Europe and South East Asia.

Background Literature

There has been a lot of research previously undertaken looking at the effects of injection therapy for knee oesteo-arthritis, however this does not cover the early stages where x-ray findings are clear but meniscal testing is positive but no trauma has occurred hence fitting the diagnosis of a DML [2]. DML can then lead to progressive degeneration of the knee joint and eventually osteoarthritis but if effective treatment is available that can settle a DML at the early stages this can help preserve the knee and potentially prolong the degenerative process [8]. Previous research has shown that injection therapy is beneficial for early knee degeneration due to decreasing inflammation and pain [9]. These symptoms are similar if not identical to those of a DML therefore giving potential evidence that an injection would be beneficial for this patient group as well.

Meniscectomy is commonly used for DML and even considered the gold standard treatment [9] but evidence is lacking to support this. Meniscectomy is starting to come under scrutiny as the leading treatment for DML due to appraised literature finding that it is no better than sham surgery or conservative treatment. In some areas, the NHS in accordance with the National Institute for Health and Care Excellence (NICE) are not funding arthroscopies for DML unless the patient has completed at least twelve months of conservative treatment, which has been deemed to be unsuccessful [4], agreeing with the notion that initially conservative treatment should be applied for this pathology and should be continued for a long period of time to be able to determine its effectiveness [7].

Exercise is a commonly used modality within research into DML [10-13]. All implied it was cost effective and available to all. However, injection therapy has not been explored to identify if it can match the benefits of exercise. Corticosteroid injections have been included as part of post-operative treatment for meniscectomy in DML and found it was beneficial [10]. Past research has found that steroid alone is on a par with meniscectomy; a combination of arthroscopy and steroid may have not been needed, a steroid injection alone could be the way forward [8]. In the short term injection is favourable over exercise because it will start to show benefit within one week and maximal results by three and can give benefit for an average of eight months [8,10], whereas exercise takes at least six weeks to start to see physical changes [8].

Purpose and Aims

At present the research looking at injection therapy for DML is scarce with currently only study conducted [8]. No previous surveys have been conducted to explore its use within practicing clinicians. The aim of this research was to; explore the current use of injection therapy as part of a conservative treatment plan for DML within UK based, injection trained SOMM physiotherapists.

Study Methodology

An online generated survey (Appendix 1) was conducted to gain a clearer understanding of current UK based, SOMM injection trained physiotherapy members utilisation of injection therapy as part of a conservative treatment plan for DML. The participants (n=203) were a mixture of National Health Service (NHS), private practice and sports based physiotherapists. Ethical approval was gained through the Middlesex University and the SOMM research

committee. All participants were recruited in their capacity as SOMM members and not NHS employees.

Population and Sampling

A specific inclusion criterion was applied, incorporating current physiotherapists that were: SOMM members who were injection therapy trained by the SOMM and reside and work within the UK. This criterion ensured all participant answers were directly linked to this research and ensured the purposive sample was obtained and variables were kept to a minimum to enable greater comparison and analysis. Current members of one society and injection training from that society, removed any variance in training the participants would have received, which would help them answer the survey reducing any intra-question discrepancies and enabled the results gained to be of current thoughts and practice which allowed comparison to current guidelines and policies and created a picture of how injection therapy is being used presently for DML [14].

Survey

A pilot survey was generated and distributed to 5 SOMM physiotherapists with a speciality in injection therapy and/ or knee rehabilitation to ensure a broad range of feedback. They were given the hard copy of the survey and asked to comment on ease of completion, quality of content, general presentation and ability to transfer this to a user friendly online version. Subjective feedback was recorded, no standardised marking schemes were used. The main aspect the feedback highlighted was the need for consent evidence. Other changes were to question structure and overall presentation. The main survey was distributed alongside an information sheet. From initial distribution, all participants had six weeks to complete and

return the survey. To increase participation a reminder email was sent out after two and five weeks.

Data Analysis

All data collected was quantitative, the demographic questions provided continuous data but the majority was categorical [14].

Demographic and geographic information was collected to help apply the inclusion criteria and used as a basis of comparison for more specific questions.

The data was analysed using the Fisher's exact test via the online statistical programme GraphPad [15]. An associated "p" value of ≤ 0.05 was considered significant [14].

Findings

There are currently 210 UK based physiotherapists who are members of the SOMM and have trained and received their injection therapy diploma through the SOMM. In May 2015 the main survey was distributed for six weeks to 203 participants: seven participants were discarded due to their involvement either via the pilot study or direct link to the research planning. The response rate was 32% (n=64). A demographic overview can be seen in (Table 1). Consent was gained within the survey from all completed participants. A response rate of 64 surveys ensured the data collected was statistically significant with a 10% margin of error [16].

It is unlikely to get a 100% return rate [17] but 32% was lower than expected. Investigation into this did highlight that some emails addresses of potential participants were old and had not been updated on the SOMM database therefore that member may have not even received the survey in the first place which overall decreased the starting number. Another potential reason for low response rate was that this research project was part of an MSc alongside other

colleagues who were also sending online surveys therefore there may have been crossover in participants who may have already completed a survey and ignored the email due to either thinking it was a repeat sending or did not want to complete another survey.

Treatment

This survey showed that once a DML had been diagnosed it was treated conservatively by 94% (n=59) using a variety of methods unless surgical criteria were indicated (Fig. 1). The surgical criteria identified that would warrant orthopaedic referral was; if the knee was clinically locked on presentation and could not be unlocked manually; 88% (n=56) and/ or the patient asked to be referred on; 81% (n=51).

For long-term treatment of DML; 90% (n=57) would refer on to orthopaedics if conservative treatment was unsuccessful within six weeks to three months of physiotherapy.

Injection Therapy

Injection therapy was used by 81% (n=52) for treating DML. No respondent used it independently, all combined injection therapy with exercise and at least one other conservative modality ($p < 0.019$). The majority of respondents; 87% (n=55) believed that injection therapy could feature sometimes within the conservative treatment plan for DML. Injection therapy was considered beneficial towards DML by 98% (n=63) of respondents, with 80% (n=45) of those stipulating that it was beneficial most of the time.

An association was identified when analysing the total number of specific knee joint injections administered per month. 74% (n=34) of those that felt injection therapy was beneficial most or all of the time for DML injected three or more knees per month, whereas those that did not find injection therapy beneficial for DML; 70% (n=7) only injected two or less knees per month ($p < 0.007$). Considering the 19% (n=12) that did not use injection

therapy for DML, the main reasons stipulated were; unable to inject due to current workplace guidelines and not enough evidence towards injection therapy being beneficial for DML (Fig. 2). However, 50% (n=6) of those, stated they would start to use injection therapy for DML if their workplace restrictions were resolved.

Further analysis was undertaken, outlining the variances in injection therapy technique and procedure, between participants who currently used it for DML (n=56).

The main dosage of steroid chosen was 40mg; 88% (n=49), there was an association identified between the dosage used and injection therapy experience, with 92% (n=45) of those that used 40mg had 0-5 years' experience ($p<0.008$). All respondents who currently inject for DML used one of two types of steroid; Depomedrone; 70% (n=39) and Kenalog; 30% (n=17). Only 7% (n=4) injected steroid only, the rest combined it with local anaesthetic. When administering the injection, 93% (n=52) stated they used a medial patella approach, 68% (n=38) a lateral patella approach and 45% (n=25) through the anterior portals of the knee. Only 2% (n=1) injected through the actual joint line of the knee. It was identified that each participant used at least two of the four approaches. There was no statistical association between the type of approach used and SOMM and/ or injection therapy experience.

When cross tabulating this information it was observed that from the 73% (n=47) that found injection therapy to be of some kind of benefit for DML, 77% (n=36) used a combination of 40mg of Depomedrone, combined with local anaesthetic, via a patella femoral approach ($p<0.01$). All who found injection therapy beneficial for DML used at least one variable from this stated combination, however, of the 27% (n=17) that did not find injection therapy beneficial for DML, it was observed that all had used Kenalog and deviated from the above combination by at least 2 variables.

There were a variety of reasons advocated by injection trained, SOMM physiotherapists towards why injection therapy was beneficial for DML (Fig. 3).

From all respondents, 50% (n=32) believed that the injection therapy was directly influencing the DML whereas the other 50% felt that the symptoms were more likely to be caused by an overall arthritic knee which the DML was a secondary problem to, so the injection was primarily targeted at having a positive effect on the underlying arthritic changes.

After injecting, all respondents reviewed the patient at a later date, with 61% (n=34) waiting at least five weeks before reviewing. At the review appointment if the patient had no benefit from the first injection, 62% (n=35) would re-inject. However the majority 80% (n=45) advocated if the injection had been sufficiently beneficial so the patient could self-manage, they would advise the patient to continue with the aid of other conservative treatment first but re-inject if the problem worsened.

No re-injection at the review appointment was advocated by 38% (n=22), of those 48% (n=10) would use other conservative treatment and 38% (n=8) would refer to orthopaedics.

Analysing long-term injection therapy for DML, all injection trained SOMM physiotherapists stated they would inject the same knee up to three times a year. The same knee would be injected more than three times a year by 61% (n=34) if the injections were beneficial and the patient was not fit for surgical intervention. Of the remaining 39% (n=23), 65% (n=15) would refer to orthopaedics and 30% (n=7) would concentrate on other conservative treatment.

Discussion

Treatment

The current gold standard treatment for DML is meniscectomy [9], but the latest appraised research has found that it is not better than a conservative treatment plan. Respondents to the

survey are treating DML conservatively unless surgical criteria is indicated and when analysed further the surgical criteria they follow correlates with current research [7].

The most common conservative treatments currently used for DML by injection trained, UK based SOMM physiotherapists were exercise (98%) and advice (94%). This fits with the previous research where over half of the studies that analysed conservative treatment for DML used exercise therapy as their modality and found it to be just as good if not better than surgical intervention in regards to pain, function and long term outcome [1,11,13,18-20]. A limitation of exercise is that it puts most of the emphasis on the patient, the past research has shown when part of a physiotherapy led group programme, exercise gives positive results both mentally and physically [18] but when the patients are then left with home exercise programmes, regression was identified.

The current surgical criteria [7] advocates that unsuccessful conservative treatment is an indication to refer a DML patient on for orthopaedic surgical consultation, however it does not stipulate how long treatment should be applied to be deemed as unsuccessful. Past research states that at least 12 months of treatment should be applied before funding will be granted if surgical intervention is required [4]. Current UK based injection trained SOMM physiotherapists are applying conservative treatment before referring on, but this application is only between two to six months which is too early when analysed against the past research [4]. Further research needs to be performed to follow up these referrals and determine if they were assessed by an orthopaedic consultant, if surgical intervention was performed and if yes, was this due to the patient or external factors eg: geography, to determine if the current surgical criteria stipulations [7] can be quantified.

One aspect of referring patients on for orthopaedic consultation identified through this survey that differs to current guidance [7] was the patient asked to be referred. No previous study allowed patients to request which treatment they would like and three studies advocated that

patients who were undertaking conservative treatment could ask to have surgery at a specific point in the study, but it did not give details of whether each patient was granted this request, and if not, whether they withdrew for that reason. The NHS, Health Care Professions Council (HCPC) and the Chartered Society of Physiotherapists (CSP) all advocate patient centred care but patients requesting surgery can potentially be seen as patient led not patient centred. Patient centred care ensures the patient is involved in the decision making process of their treatment but it is the health care professionals that are leading the options [19]. Respondents with more experience were identified to be more likely to refer on if the patient asked, however, physiotherapists cannot refer patients on just because they request, it does not fit with evidence-based practice [3] and would cause a breakdown in effective referrals to orthopaedic consultants.

Injection Therapy

Depomedrone and Kenalog were the only types of steroid being used by injection trained, UK based, SOMM physiotherapists for this pathology.

Those that found injection therapy beneficial all the time for DML administered Depomedrone compared to those that did not find injection therapy beneficial at all for DML who administered Kenalog. Kenalog was not found to be completely negative; those that found injection therapy partially beneficial for DML had used both Depomedrone and Kenalog. Anecdotal evidence has shown that the administration of Kenalog has provided benefit for DML. This is backed by reviews [21-22], that appraised studies looking at the use of injection therapy for knee degeneration and found Depomedrone, Kenalog and other steroids had been used but no differences between the types were identified.

This research now demonstrates that within current practice of a specific practitioner group, Depomedrone is favoured but the strength of these findings is weak when transferred into

global injection therapy practice but it has highlighted a potential area of consideration regarding the future development of the treatment of DML.

The survey identified four respondents used 20mg for DML and two used ≥ 50 mg. When analysed further, those that used 20mg did not find injection therapy beneficial for DML and those that used ≥ 50 mg had no greater benefit than 40mg. Injection therapy experience has been identified to alter dosage choice; those with ≤ 5 years injection therapy experience used 40mg. This research has started to identify what steroid and dosage current UK based, injection trained SOMM physiotherapists are administering for DML but at present it is not strong enough to transfer these conclusions to all injection therapists. All the local guidelines need to be compared to determine if the current practice regarding dosage and steroid is a practitioner or departmental decision.

Hyaluronic acid injections are another option within the category of injection therapy, they were not investigated into within this research due to this being a SOMM based MSc project and hyaluronic acid injections not being currently advocated within the SOMM training. Also these type of injections are not appropriate for solely meniscal issues [23], there needs to be some joint space narrowing and degeneration to the articular cartilage for hyaluronic acid injections to be indicated and effective which DML does not fit. For patients with just DML inflammation is the biggest issue therefore needs resolving, which is where a steroid injection becomes indicated and favourable over hyaluronic acid [23].

A favoured approach for an intra-articular knee joint injection is patellofemoral, due to easier ability to gain intra-articular access [8]. However a study [24] compared a patellofemoral joint approach to an anterior portal for intra articular knee joint injections and concluded that both options provided equal positive outcomes regarding pain of injection and length of benefit. This survey identified that a medial patella femoral approach, was used by nearly all

respondents but nearly half also used an anterior portal approach. No links were identified between the type of approach and the respondents experience or other demographic information. The common factor was that all had gained injection therapy accreditation via SOMM where a patellofemoral approach is advocated hence its common transfer to practice. It can be concluded that current UK based, injection trained SOMM physiotherapists are following current SOMM guidelines regarding approach and that other options are being utilised.

This research identified that half believed injection therapy primarily affected the DML whereas the other half felt the injection primarily affected an arthritic knee and the DML improvement was secondary. Previous research [1-2] and anecdotal evidence believe that DML will occur before the knee joint fully degenerates and therefore can be addressed first. If left untreated the DML will lead to overall knee joint degeneration, the main factor is time since onset. Identifying the benefits of injection therapy for patients with solely a DML compared to those with DML and knee joint degeneration will help conclude which benefits of injection therapy are specific to DML and can alter future practice by aiding practitioner decision of when to administer injection therapy.

This research has highlighted that some respondents are finding their use of injection therapy for DML is restricted by departmental guidelines.

The ability for physiotherapists to inject was granted in 1997 [25] and over the last 18 years the guidelines towards its use by physiotherapists have become less clear cut including the removal of the CSP guidelines due to age of publication and no renewal of policies. Some areas have created guidelines for physiotherapists to follow which dictate how to apply injection therapy for specific pathologies including DML [26]. This contradicts the SOMM guidelines [27] of injection therapy that imply they are a foundation to work from but

independent knowledge, understanding and clinical reasoning should shape its use for each patient.

This research highlighted that minimal or non-restricted injection exposure gives current UK based, injection trained SOMM physiotherapists the ability to use the modality as it should be for DML, therefore learn from it and reflect accordingly.

Strengths and Limitations

Past practice has advocated surgical intervention as the gold standard treatment for this pathology but research has started to show that this is not the best option and conservative treatment is just as good if not better. This research has identified that within current practice, UK based, injection trained SOMM physiotherapists are regularly using conservative treatment for DML with injection therapy playing a common role.

This research only analysed a specific geographical group and profession within one society of injection therapy. The conclusions drawn may not be transferable to all injection therapists but this research can help shape future practice for a specific practitioner group, which occurs over the UK. By addressing DML the conclusions can be linked to the treatment plan of a pathology that affects a large patient group therefore greater transference into the practical setting and increased evidence.

Implications for Practice and Future Research

The increase in perceived positive benefits for Depomedrone compared to Kenalog is not backed up by past research. However, no previous studies have compared these two steroids for DML treatment and when reviewed all past studies regarding injection therapy for DML or knee osteoarthritis do not highlight a specific favoured type of steroid. More research is needed to determine the efficacy of Depomedrone compared to Kenalog for DML injection

therapy to identify if more weight can be given to the claims made by this research and give more evidence towards the favouring of one steroid.

Conclusion

This research demonstrates that conservative treatment is currently used for DML and found to be successful and injection therapy is occurring within that conservative treatment plan.

The benefit from injection therapy reported by respondents is similar to previous research but could be influenced by injection exposure and potentially steroid choice. Overall a consensus is starting to appear regarding dosage, steroid and administration; however differences arise when comparing geographical guidelines to CSP and NICE guidelines.

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Appendices

1. Main Survey

Appendix 1



**THE SOCIETY OF
MUSCULOSKELETAL
MEDICINE**
putting theory into practice



**Middlesex
University
London**

A Survey to Explore the Current use of Injection Therapy as Part of a Conservative Treatment Plan for Degenerative Meniscal Lesions within UK Based, Injection Trained Physiotherapy Members of the Society of Musculoskeletal Medicine.

Instructions

Many thanks for taking time to complete this survey.

For each section please see if the questions apply to you.

If yes, please answer all questions within that section.

Each question will indicate how many answers are required.

Consent

Before answering any questions, do you give consent to complete the survey and allow your response to be used for data analysis knowing that at all times no personal identification will be used and all responses will be anonymous?

Yes

No

Part I: Demographics

All participants please answer all of this sections questions; selecting only one answer per question.

1) _____ **What is your profession?**

- Physiotherapist
- GP/ Doctor
- Other healthcare professional

2) _____ **How many years have you been qualified in your profession?**

- 0-5
- 6-10
- 11+

3) _____ **How many years have you been a member of SOMM?**

- 0-5
- 6-10
- 11+

4) _____ **Where in the UK do you practice?**

- South West
- South East
- Midlands
- North West
- North East
- Scotland
- Northern Ireland
- Wales

5) _____ **How many years have you been qualified as an injection therapist?**

- 0-1
- 2-5
- 6-10
- 11+

6) _____ **On average how many steroid injections do you administer in one month?**

- 0
- 1-2
- 3-5
- 6-10
- 11+

7) _____ **On average how many knee joint steroid injections do you administer in one month?**

- 0
- 1-2
- 3-5

-
- 6-10
 - 11+

Part II: Treatment

All participants please answer this section's questions.

When diagnosing a degenerative meniscal lesion, which option(s) do you utilize?

8) _____ (Select as many answers which apply to you)

- - Conservative eg: subjective and objective assessments.
- - Refer for Magnetic Resonance Imaging (MRI).
- - Refer to orthopaedics for arthroscopy solely to diagnose.

Once a degenerative meniscal lesion has been diagnosed, treatment is patient specific but which option do you most commonly utilise?

9) _____ (Select one answer only)

- Always treat conservatively first no matter what, but if unsuccessful refer to orthopaedics.
- Treat conservatively first unless the knee is clinically locked and cannot be unlocked manually therefore refer to orthopaedics.
- Refer to orthopaedics straight away but try conservative treatment whilst they wait for an appointment.
- Always refer to orthopaedics straight away without trying any conservative treatment.

You decide conservative treatment is indicated, which of the following modalities do you utilise?

10) _____ (Select as many answers which apply to you)

- Injection therapy.
- Grade A mobilisations.
- Grade B mobilisations.
- Grade C mobilisations.
- Transverse frictions of the joint line(s).
- Electrotherapy.

-
- Acupuncture.
 - Taping.
 - Manual distractions of the knee joint (SOMM technique).
 - Manual distractions of the knee joint (not SOMM technique).
 - Exercises.
 - Advice.
 - Advise patient to see GP to discuss NSAID's and analgesia.
 - Other:
Please specify_____
 - I do not use conservative treatment.

As a qualified injection therapist, if you do not currently use injection therapy as part of your conservative treatment plan for degenerative meniscal lesions, please state why?

11) _____ **(Select as many answers which apply to you)**

- Unable to inject in my place of work due to current polices and guidelines, including the departments current practice to not inject for this pathology.
- Unable to inject in my place of work due to lack of specialist equipment eg: adrenaline.
- Do not feel confident injecting as a whole.
- Do not feel confident injecting for this pathology.
- Not enough training on the area.
- Do not feel injection therapy works for this pathology.
- Not enough evidence/ research to show that injection therapy is beneficial for this pathology.
- Already use a combination of other conservative treatments which work well therefore no need to inject.
- Do not use any conservative treatment for this pathology and refer straight to orthopaedics.
- Other:
Please specify_____
- N/A because I already use injection therapy for degenerative meniscal lesions.

12) _____ **If you do not currently use injection therapy for degenerative meniscal lesions, would you consider it?**

_____ (Select one answer only).

- Yes, if the answer(s) identified in question 11 were resolved.
- No.
- N/A because I already use injection therapy for this pathology.

Part III: Injection Therapy

Please answer the following questions in this section ONLY if you currently use injection therapy for degenerative meniscal lesions; if you do not please move onto the surgical and conclusion sections.

What type of steroid do you use the most when injecting a degenerative meniscal lesion?

13) _____ (Select one answer only).

- Depomedrone.
- Adcortyl.
- Kenalog.
- Prednisolone.
- Other:

Please specify _____

For the steroid you chose in question 13, what dosage do you administer, per injection for this pathology?

14) _____ (Select one answer only)

- 10mg.
- 20mg.
- 30mg.
- 40mg.
- 50mg.
- More than 50mg.

Under your Patient Specific/Group Directive (PSD/ PGD), do you combine the steroid with local anaesthetic?

15) _____ (Select one answer only)

- Yes, I mix in same syringe.
- Yes, but I inject the steroid and local anaesthetic separately.

-
- Yes, I use a pre mix solution.
 - No, I just inject steroid.

What needle insertion approach do you take?

16) _____ (Select as many answers which apply to you)

- Lateral aspect of patella.
- Medial aspect of patella.
- Anterior portals of the knee.
- Through actual joint line of the knee.

Do you currently find injection therapy to be beneficial for degenerative meniscal lesions?

17)

_____ (Select one answer only)

- Yes: all the time.
- Yes: most of the time.
- Yes: sometimes.
- No.

When injecting for a degenerative meniscal lesion, which of the following benefits do you feel you are achieving?

18) _____ (Select as many answers which apply to you)

- Pain relief.
- Inflammation reduction.
- Increase range of movement.
- Improve function of patient.
- Settling a flare of an already degenerative structure.
- Delays further degeneration of meniscus.
- Needle insertion causes traumatic bleeding of knee (intra-articular) leading to increased healing secondary to increased blood flow.
- Needle insertion causes traumatic bleeding of meniscus (trephination) leading to increased healing secondary to increased blood flow.
- Resolving symptoms of an arthritic knee joint which is causing the pain not the meniscus.

• Other:

Please specify _____

After injection, how long do you leave before you review?

19) _____ (Select one answer only)

- Less than 1 week.
- 1-2 weeks.
- 3-4 weeks.
- 5-6 weeks.
- More than 6 weeks.
- I do not review.

At your review appointment the patient is better than before but not back to pre-lesion level of pain and function, do you re-inject?

20) _____ (Select one answer only)

- Yes I would re-inject at that time because I got some benefit from the first injection therefore they could further improve with a second.
- If the patients improvements were enough that they could self-manage I would not re-inject at the time but wait until their symptoms potentially worsened then inject.
- If the patients improvements were enough that they could self-manage I would not re-inject at the time but continue with other conservative treatment until their symptoms potentially worsened then inject.
- No, I would use other conservative options.
- No because my PSD/ PGD does not allow it.
- No, I would refer to orthopaedics.

If at your review appointment the patient has had no benefit, do you re-inject?

21) _____ (Select one answer only)

- Yes, because I would want to make sure an injection was not beneficial and two attempts would give me a better understanding than one.
- No, I would consider other conservative options.
- No because my PSD/ PGD does not allow it.
- No, I would refer on to orthopaedics.

Would you inject the same knee more than 3 times a year?

22) _____ (Select one answer only)

-
- Yes, I would inject the knee as many times as needed, whenever needed, no matter what.
 - Yes, but only if it was beneficial to the patient and they were not fit for surgical intervention.
 - No I would consider other conservative options after 3 injections.
 - No, I would refer to orthopaedics after 3 injections.

All participants please answer the following questions.

Part IV: Surgical

When referring a patient with a degenerative meniscus to orthopedics for surgical intervention what are your criteria?

23) _____ (Select as many answers which apply to you)

- Any patient with a clinically locked knee that cannot be unlocked manually.
- Any patient that has attempted conservative treatment including injection therapy but has been unsuccessful.
- If there is a degenerative meniscal lesion on imaging I refer on, no matter what.
- Patient asks to be referred on.
- All degenerative meniscal lesions no matter what are referred on.

If you selected the unsuccessful conservative treatment option from question 23, how long do you use conservative treatment for degenerative meniscal lesions before you deem it unsuccessful?

24) _____ (Select one answer only)

- Less than 6 weeks.
- 6 weeks to 3 months.
- 4 to 6 months.
- 7 to 12 months.
- Greater than 12 months.
- I did not select the unsuccessful conservative option in question 22.

Part V: Conclusion

Do you feel degenerative meniscal lesions can be treated with conservative treatment as part of routine physiotherapy practice?

25) _____ (Select one answer only)

-
- Yes, always.
 - Yes, unless surgical criteria is indicated.
 - No.

Do you feel injection therapy can be a regular part of the conservative treatment for degenerative meniscal lesions?

26) _____ (Select one answer only)

- Yes, always.
- Sometimes.
- No.

Many thanks for taking time out of your busy day to complete this survey, your response will directly help address the research and is thoroughly appreciated.