

Steroid Injections for Musculoskeletal Disease

Montana ACP Meeting

2015



Knee

Ankle

Shoulder

Disclosure

- The authors have no conflicts of interest to disclose



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Workshop Overview

- Introduction (30 minutes)
- 3 Rotating Stations (30 minutes each)
 - Knee
 - Shoulder
 - Ankle

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Introduction

- ◆ Contraindications and Risks
- ◆ Informed consent
- ◆ Injectate used: Local anesthetic and corticosteroids used
- ◆ Aseptic technique
- ◆ General aftercare



Contraindications to Injection

ABSOLUTE

- Broken skin or cellulitis over injection site, including psoriasis or eczema
- Evidence of systemic bacteremia or febrile illness
- Evidence of joint infection
- Prosthetic joint
- Hypersensitivity to local anesthetic or the steroid preservative



Contraindications to Injection

RELATIVE

- Major clotting disorder (correct before injection)
- Anticoagulation (consider correcting before injection of shoulder; knee and bursae, probably OK with INR below 1.8)
- Immunosuppressed (by disease or by drugs)
- Diabetic (blood sugars may rise for a few days, greater risk of infection)



Risks of joint and soft tissue injection

- Joint infection (1 in 17K-77K if done as an office procedure)
- Soft-tissue infection (1 in 10K)
- Bleeding (rare)
- Acceleration of a septic joint
- Subcutaneous fat atrophy and skin depigmentation (<1%); higher risk if injection is superficial to the skin surface or in dark-skinned individuals
- Steroid flair with pain 6-12 hours after injection (2%-5%)
- Exacerbation of diabetes (rare)
- Cartilage damage, particularly in weight-bearing joints (rare)

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Risks of joint and soft tissue injection..cont.

- Tendon rupture (<1%); very uncommon if injecting the joint capsule rather than injecting around or near a specific tendon.
- Facial flushing (1%-5%)—comes on within 24-48 hours and lasts 1-2 days
- Asymptomatic pericapsular calcifications (43%)
- Allergic or hypersensitivity reactions—ask the patient about history of allergies to local anesthetics
- Anaphylactic reaction—rare, usually will begin 5-10 minutes after exposure, have the patient wait for 20-30 minutes after injection to make sure this does not occur

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Informed Consent

What does the patient need to know?

- **Risks of procedure**
 - Infection, bleeding, allergic reaction, some pain
- **Benefits of procedure**
 - Relatively simple office procedure to relieve pain when conservative measures have failed
- **Realistic expectations**
 - Might not be efficacious
 - Effect may not be complete until 5-7 days
 - Usual duration of Aristospan effect is 3 months or less

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Which Steroid?

Short-acting Preparations (soluble)



- Hydrocortisone (hydrocortone phosphate) 25,50 mg/ml
- Hydeltrosol (prednisolone) 20 mg/ml

Long-acting Preparations (Depot or Time-Released)



- Kenalog (triamcinolone acetonide) 40 mg/ml
- Aristospan (triamcinolone hexacetonide) 20mg/ml
- Depo-Medrol (dexamethasone acetate) 20-40-80 mg/ml

Which Steroid?

Combination Preparations (Soluble and Depot)

- Celestone Soluspan (Betamethasone) 6mg/ml



Which Steroid?

Preparation changes based on site:

- Aristospan (T. Hexacetonide) for large joints/ trochanteric bursa
- Kenalog (T. Acetonide) for medium joints
- Kenalog (T. Acetonide) for soft tissues
- Hydrocortisone for fingers

How much steroid/ local anesthetic?

Commonly used dosages in our injection clinic at Mayo. Other references may suggest different dosage recommendations.



	Steroid type/ dose	2% lidocaine
Joint		
Shoulder	Aristospan 40mg or Kenalog 40mg or 80mg	2cc
Knee	Aristospan 40mg or Kenalog 40mg or 80mg	2cc
Ankle	Kenalog 40mg	2cc
Bursae/Soft Tissue		
Shoulder		
Subacromial Bursa	Kenalog 40mg	1cc
Bicipital Tendon AC Joint	Kenalog 20mg	0.5 - 1cc
Lower Extremity		
Plantar Fascia	Kenalog 20mg	1.5 - 2cc
Trochanteric Bursa	Aristospan 40mg or Kenalog 40mg-80mg	2cc

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Aseptic Injection Technique

- ▶ Wash and thoroughly dry hands.
- ▶ Use alcohol swab to clean the top of the vials before drawing into syringe.
- ▶ Change needles after drawing up solution into the syringe.
- ▶ Use non-sterile exam gloves—sterile gloves only necessary if you plan to re-examine the site after the skin is cleansed.
- ▶ Mark the area for injection.

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Aseptic Injection Technique cont.

- ▶ Use Betadine swabs, start at the center of the marked area and swab in a circular fashion. Repeat this step at least once. Allow Betadine to dry.
- ▶ Do not touch the skin after marking and cleansing the site.
- ▶ When injecting a joint, aspirate to confirm location and to check that the fluid does not look infected.

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General Aftercare

- Passive ROM after instillation
 - Remind the patient that the immediate effect is the local anesthetic. The steroid effect may take a few days.
 - Minimize use for 5-7 days, avoid exacerbating activities
 - Do not submerge injection site in tub or whirlpool for 2 days after injection
 - OK to use ice/ OTC non-aspirin containing pain relievers—do not use heating pad
-  Call if signs of infection/ allergic reaction

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