



# Welcome!

FLS Bone Health ECHO® TeleECHO Clinic

We will be recording this TeleECHO Clinic for educational and quality improvement purposes.

**By participating in this clinic you are consenting to be recorded.**

If you do not wish to be recorded, please email [andrea.medeiros@nof.org](mailto:andrea.medeiros@nof.org) at least one week prior to the TeleECHO Clinic you wish to attend.

Please type in your name, location, and email address in the chat.

Clinic will start in less than 15 minutes

## **Some helpful tips:**

Please mute your microphone when not speaking

Position webcam effectively

Communicate clearly during clinic:

- ▶ Speak clearly
- ▶ Use chat function

# Project ECHO's goal is to protect patient privacy

To help Project ECHO accomplish that goal, please only display or say information that doesn't identify a patient or that cannot be linked to a patient.

## References:

For a complete list of protected information under HIPAA, please visit [www.hipaa.com](http://www.hipaa.com)

# Common HIPAA Identifier Slip-Ups and Easy Ways to Protect Patient Privacy

1st – **Names:** Please do not refer to a patient's *first/middle/last name* or use any *initials*, etc. Instead please use the *ECHO ID*.

2nd – **Locations:** Please do not identify a patient's *county, city or town*. Instead please use only the patient's *state* if you must or the *ECHO ID*.

3rd – **Dates:** Please do not use any dates (like *birthdates*, etc.) that are linked to a patient. Instead please use only the patient's *age* (unless > 89)

4th – **Employment:** Please do not identify a patient's *employer*, work *location* or *occupation*. Instead please use the *ECHO ID*.

5th – **Other Common Identifiers:** Do not identify patient's *family* members, *friends, co-workers, numbers, e-mails*, etc.

## **NOF Staff Disclosures**

**Andrea P. Medeiros, Director, Programs, Policy & Membership:**  
Nothing to Disclose

**Ami Patel, Director, Professional Education and Medical Affairs:**  
Nothing to Disclose

## **Planning Staff Disclosures**

**Linda Bowka:** Consultant-RPJ FLS

**Clayton LaBaume, PA-C:** Consultant-RPJ FLS; Speaker's  
Bureau/Committee/Stock: Radius

**Anne Lake, DNP:** Consultant-RPJ FLS; Speaker's Bureau: Radius

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# Stress Fracture

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HOSPITAL  
FOR  
SPECIAL  
SURGERY

WHERE THE  
WORLD COMES  
TO GET BACK  
IN THE GAME

# Disclosure

**Joseph M. Lane, MD**

**CollPlant, Inc.**

**Merck**

**Mesentech**

**On Foundation**

**Radius Health, Inc**

**NIH Study Section**

**Stock Options**

**Research Support**

**Consultant**

**Consultant/Board Member**

**Research Support**

**Research Grants**

# ***WHAT IS A STRESS FRACTURE?***

Small or moderate repetitive load  
→ bone failure



# **Stress Fracture**

**Overuse normal bone**

**Insufficiency**

**Normal use weak bone**

# **Spectrum**

**Bone bruise**

**Stress reaction**

**Stress fracture**

**Complete fracture**

# Stress Fractures

**1 – 20% Athletic injuries**

**80% Lower extremity**

**Women > Men**

# Activities

**Endurance**

**High load – bearing**

**Running**

**Military**

**Aerobic exercise**

**Repetitive**

**New Activity**

# Bones at Risk

**Metatarsals**

**Calcaneus**

**Navicular**

**Fibula**

**Femur**

**Pelvis**

**Ribs**

**Humerus**

# Bones at Risk

**Metatarsals**

**Calcaneus**

**Navicular**

**Tibia**

**Fibula**

**Femur**

**Pelvis**

**Sacrum**

**Ribs**

**Humerus**

# **SYMPTOMS**

**Pain - Recent Increase**

**Specific Point**

**Local Swelling**





# CLASSIFICATION

**Low Risk**

**Non-surgical**

**Compression Stress**

**Femoral Shaft**

**Medial Tibia**

**Fibula**

**Calcaneus**

**1-4 Metatarsal**

**High risk**

**Risk for complete fx**

**Tension side**

**require surgery**

**5<sup>th</sup> Metatarsal**

**Anterior tibia**

**Tarsal navicular**

**Femoral neck (lat)**

**Patella**

**1<sup>st</sup> sesmoid**

# MRI CLASSIFICATION

## GRADE:

1. Periosteal edema
2. Bone marrow edema T2
3. Bone marrow edema T1/T2
4. Intracortical abnormality

# Bone Consideration

Osteoporosis – Density (Quantify)

Osteogenesis Imperfecta

Bone Dimensions

Cortex

Bone Age    Microdamage

AFF (Bisphosphonates)

Osteopetrosis

**Vitamin D**

**Osteomalacia**

**Vitamin C**

**Scurvey**

**Hypophatemic**

**Rickets**

**Hypophosphatasia**

**Cushing's Disease**

**Diabetes**

**Collagen**

**Marfans/OI/**

**ED**

# Treatment

**Most stress fractures heal!**

**Reduce activity**

**Protective wear**

**Tension side fractures**

**delay > consider tension plate**

**IM device**

# Military Fractures

↑ Calcium                      750 – 1000mg

↑ Vitamin D                      > 20ng/ml

→ Prevents Fractures

→ Heals Fractures

# **Atypical Femoral Fractures**

**Stop Bisphosphonates**

**? Anabolic Agents??**





**Prior Stress Fracture**



**Risk Additional Fracture**

**New activity – slowly**

**Good equipment**

**Training**

**Cross Train**

**Pain – stop and evaluate**

# Teenage Women

**Control Weight Loss**

**Nutrition/Energy**

**Menstrual Competence**

# **WEIGHT DEPENDENT SPORTS**

**DANCE**

**Gymnastics**

**Rowing**

**Wrestling**

**CAUTION!**

# **SUMMARY**

## **Stress Fractures**

**Be alert for early symptoms**

**Identify risk issues**

**Adequate nutrition**

**Cross train**

**calcium/Vitamin D**

**Early recognition prevent complete  
fracture**