

# ***Assessment & Exercise for Knee Injury Recovery***



***with Rick Kaselj, MS***

# My Story

## Rick Kaselj

- Exercises and injuries
- BSc – 1997
- MS – 2008 / RC
- Work – physio, studio, gym, rec centre, rehab
- Courses – live, webinars, video presentations
- Writing – books, manuals
- Blog – [ExercisesForInjuries.com](http://ExercisesForInjuries.com)



**Rick Hiking 4300 km / 5 months  
from Mexico to Canada**

# Objectives



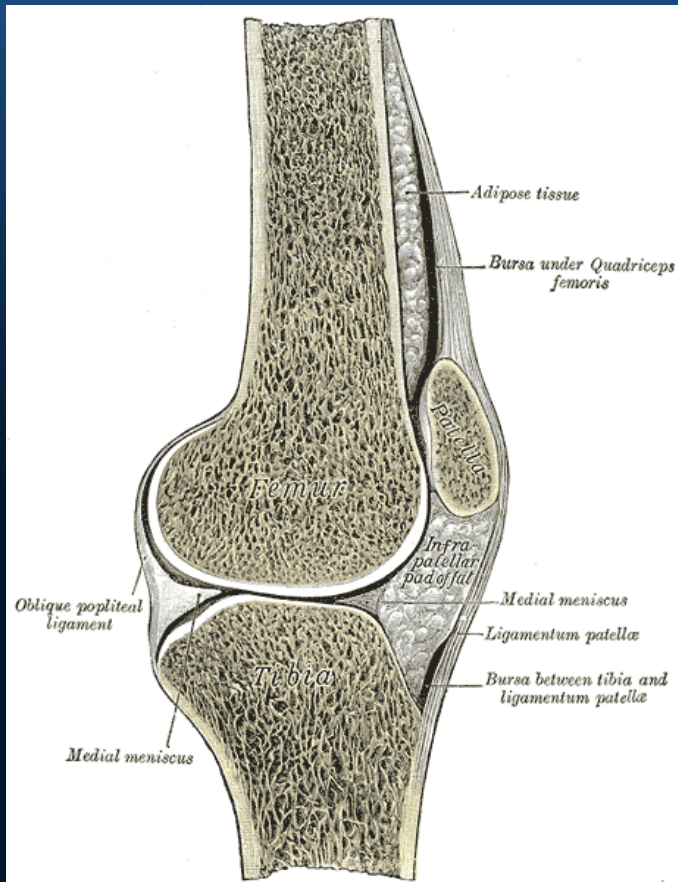
- Part 1 – Key Structures of the Knee
- Part 2 – Assessing the Knee
- Part 3 – Important Knee Injury Recovery Exercises

# Key Structures Involved in the Knee



- Overall Structure
  - Leg

# Key Structures Involved in the Knee



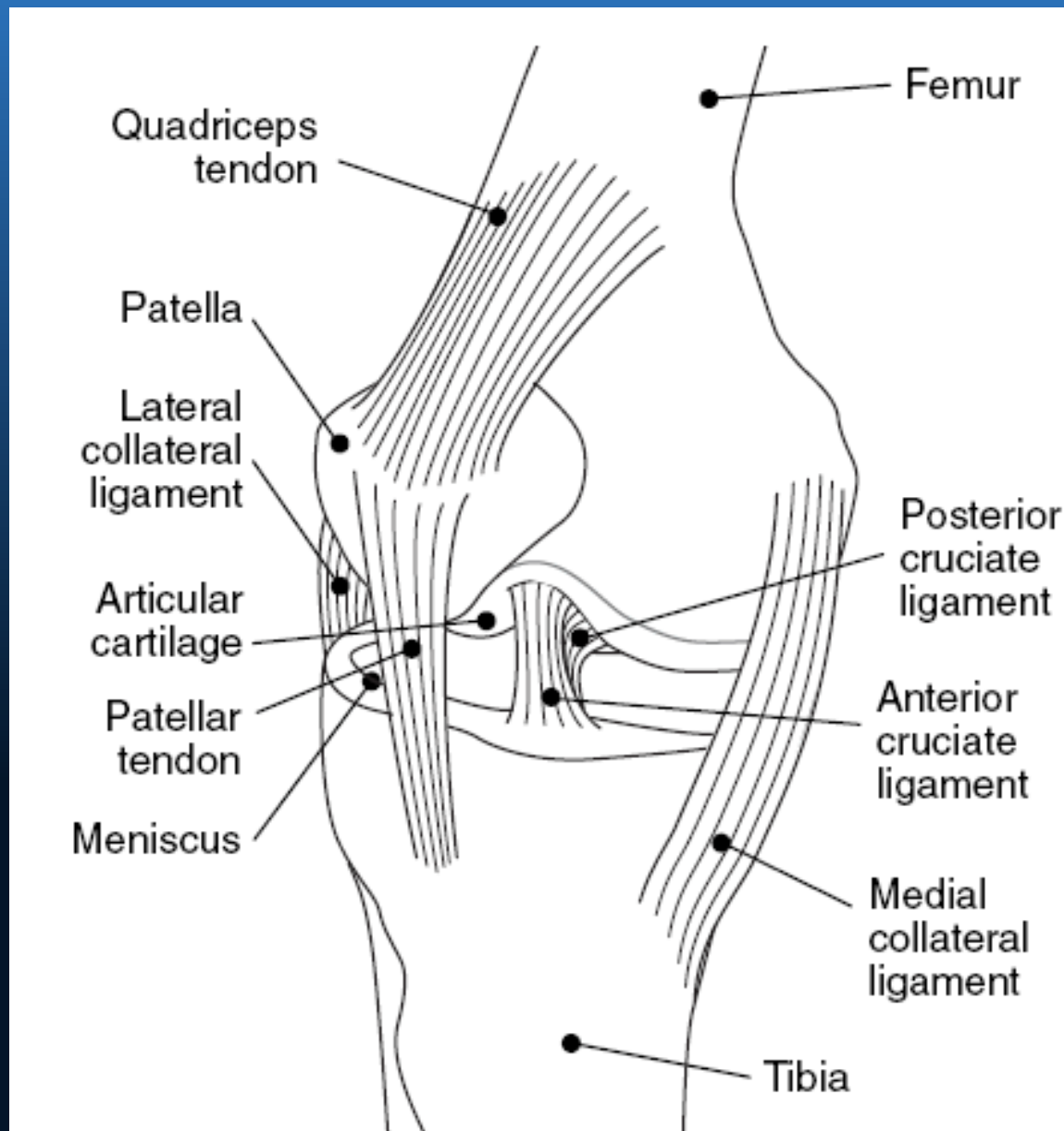
- Key Joint
  - Knee
- Key Knee Joint Structures
  - Bones
    - Femur
    - Patella
    - Tibia

# Key Structures Involved in the Knee

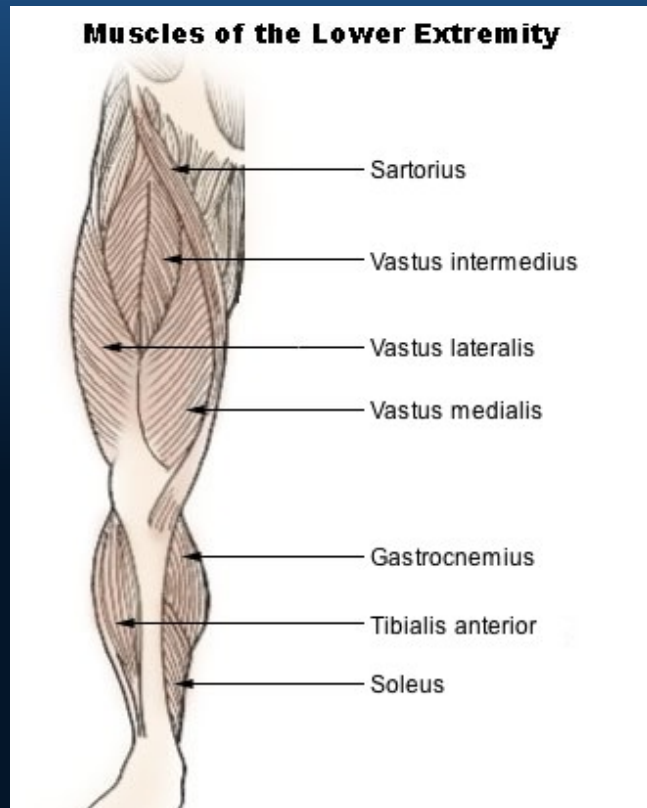
- Key Structures

- Ligaments

- Anterior Cruciate Ligament – ACL
    - Posterior Cruciate Ligament – PCL
    - Medial Collateral Ligament – MCL
    - Lateral Collateral Ligament - LCL

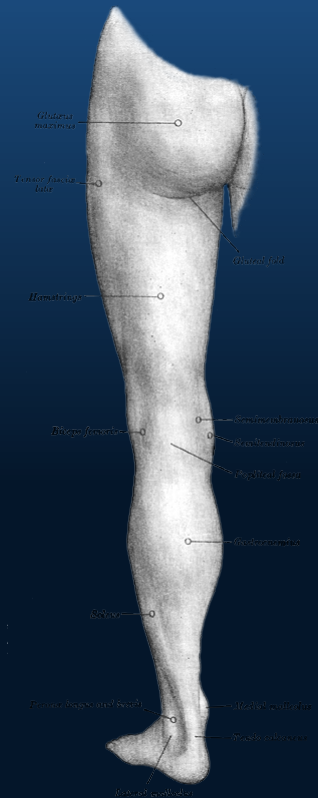


# Key Structures Involved in the Knee



- Key Muscles
  - Quadriceps
    - Knee Extension
  - Calf
    - Knee Flexion
  - Soleus

# Key Structures Involved in the Knee



- Key Muscles
  - Hamstring
    - Knee flexion
  - Calf
    - Knee flexion

# Assessing the Knee



- Range of Motion
  - Passive
  - Active
    - Unloaded
    - Partially loaded
    - Fully Loaded

# Assessing the Knee



- What is Normal Range of Motion?
  - Extension
    - minus 5 degrees
  - Situation
    - Unloaded
    - Partially loaded
    - Fully Loaded

# Assessing the Knee



- What is Normal Range of Motion?
  - Flexion
    - 140 degrees
  - Situation
    - Unloaded
    - Partially loaded
    - Fully Loaded

# Assessing the Knee

- Why is this important?
  - Walking – 2 to 70 degrees of flexion
  - Loss of greater than 10 degrees of extension will lead to a limp
  - If end range of extension is missing, it put greater strain on muscles and ligaments
  - 93 degrees of flexion to get out of a chair
  - 106 degrees of flexion to tie your shoes
  - 136 degrees to bath

# Where to Get More Information

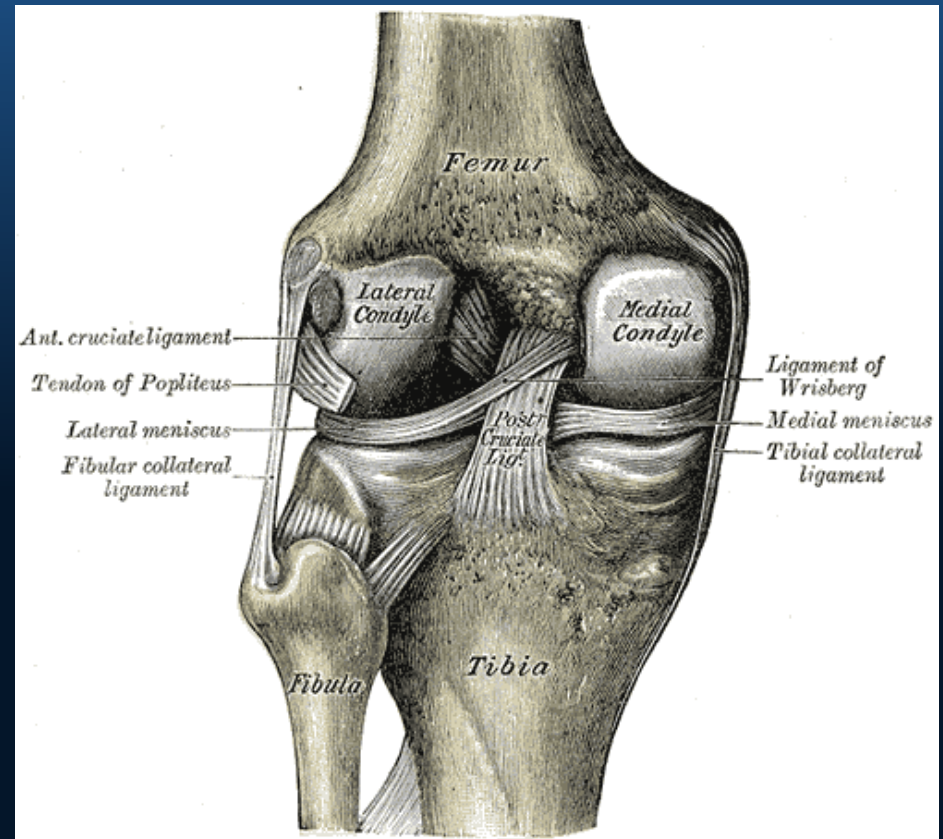
- Muscle Imbalances Revealed – Lower Body Edition

- Maximizing Strength & Stability of the Knee with Rick Kaselj
- Muscular Imbalances in the Hip & Pelvis with Mike Robertson



# Assessing the Knee

- Lack of Extension?
  - Affects the “**Screw Home Mechanism**” of the knee
    - Last little bit of extension
    - Purpose is to reduce quadriceps work during standing and put load on cartilage, menisci and bones
  - You try it



# Assessing the Knee

- Assessing Extension
  - Bilateral Calf Raise (24)



# Assessing the Knee

- Assessing Extension
  - Unilateral Calf Raise (25)



# Assessing the Knee

- Assessing Flexion
  - Knee Flexion on Stomach (13)



# Assessing the Knee

- Assessing Flexion
  - Finger Squat (22)



# Important Knee Injury Recovery Exercises

- Components

1. Warm up
2. Range of Motion - passive and active
3. Stretching
4. SMR
5. Balance
6. Strength
7. Squatting Pattern



# Important Knee Injury Recovery Exercises

- Components

8. Lunging Pattern
9. Stepping Pattern
10. Gluteus Medius
11. Neuromuscular Re-education
12. Core Stability
13. Activity Specific



# Where to Get More Information

- Knee Injury Solution

- Neuromuscular Re-education
- [KneeInjuryExercises.com](http://KneeInjuryExercises.com)



# Important Knee Injury Recovery Exercises

- Terminal Knee Extension - TKE
  - *Quad Kicks on Floor (349)*
  - *Terminal Knee Extension on the Floor (351)*
    - *1 set of 5 repetitions*
    - *Daily*
    - *2 to 3 times a day*



# Important Knee Injury Recovery Exercises

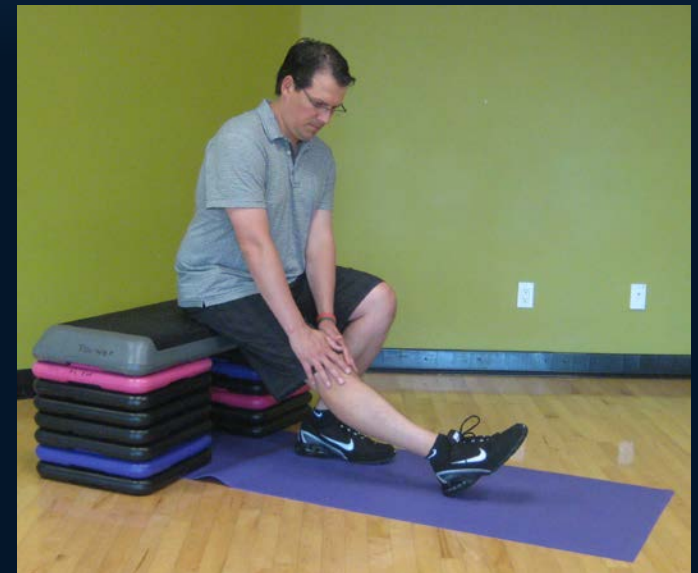
- TKE
  - *Terminal Knee Extension on Your Stomach (352)*



# Important Knee Injury Recovery Exercises

- TKE

- *Terminal Knee Extension on Floor with Heel Elevated(350)*
- *Sitting Terminal Knee Extension (359)*
  - *1 set of 5 repetitions*
  - *Daily*
  - *2 to 3 times a day*



# Important Knee Injury Recovery Exercises

- TKE
  - *Sitting Leg Extensions (378)*



# Important Knee Injury Recovery Exercises

- TKE
  - *Standing Terminal Knee Extension Non-weight Bearing(353)*



# Important Knee Exer

ery

- TKE

- *Standing Terminal Knee Extension (354)*
- *Standing Terminal Knee Extension Full Weight Bearing (355)*
  - *1 set of 5 repetitions*
  - *Daily*
  - *2 to 3 times a day*



# Important Knee Injury Recovery Exercises

- TKE

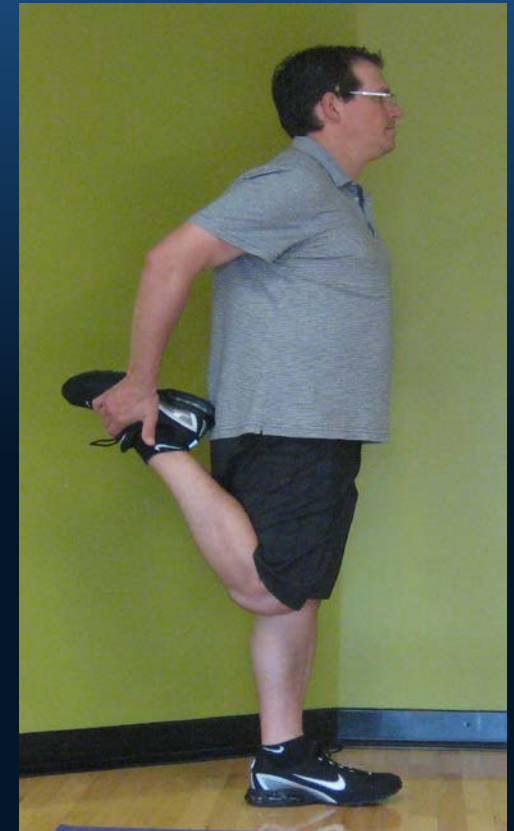
- *Standing Terminal Knee Extension Against Tubing (357)*
- *Standing Terminal Knee Extension Full Weight Bearing Against Tubing (358)*
  - *1 set of 5 repetitions*
  - *Daily*
  - *2 to 3 times a day*



# Important Knee Injury Recovery Exercises

- Terminal Knee Flexion (TKF)

- *Standing Heel to Seat Knee Forward (367)*
- *Standing Heel to Seat Knees Parallel (368)*
  - *1 set of 5 repetitions*
  - *Daily*
  - *2 to 3 times a day*



# Important Knee Injury Recovery Exercises

- TKF

- *Side Lying Heel to Seat Knee Forward (369)*



# Important Knee Injury Recovery Exercises

- TKF

- *Side Lying Heel to Seat Knees Parallel(370)*
- *Knee Flexion on Stomach (13)*



# Important Knee Injury Recovery Exercises

- TKF

- *Sitting Heel to Seat with Towel (14)*



# Important Knee Injury Recovery Exercises

- TKF

- *Supine Knee Flexion (362)*
- *Supine Knee to Chest for Knee Flexion (363)*



# Important Knee Injury Recovery Exercises

- TKF

- *Single Leg Ball to Seat (284)*



# Important Knee Injury Recovery Exercises

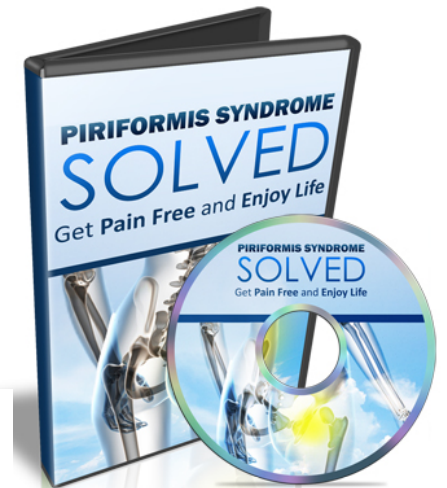
- TKF

- *Ball Squat (299)*
- *Supine Knee to Deep Squat (371)*



# Other Injuries

- Shin Splints
- Meniscus Tear
- Patellofemoral Pain Syndrome
- Sacroiliac Pain
- Plantar Fasciitis
- Piriformis Syndrome
- Lumbar Fusion
- Achilles Tendinitis
- Jumper's Knee
- Tennis Elbow



# Objectives



- Part 1 – Key Structures of the Knee
- Part 2 – Assessing the Knee
- Part 3 – Important Knee Injury Recovery Exercises

# More FREE Information on Exercise & Injuries

- \$299 Fitness Education
  - Returning the Shoulder Back to Optimal Function Seminar
  - Exercise Modification for the Sensitive Shoulder Seminar
  - Visit [www.ExercisesForInjuries.com](http://www.ExercisesForInjuries.com)

# Thank You

- Send me your questions!
- Rick Kaselj
  - support@ExercisesForInjuries.com
  - www.ExercisesForInjuries.com