Common Foot and Ankle Procedures
Physical Therapy Guidelines

- **Hallux Rigidus: Cheilectomy with and without concomitant osteotomies**.
  Hallux rigidus refers to the limitation of motion of the metatarsophalangeal joint of the great toe specifically loss of hallux dorsiflexion. Limitations occur in adults through degenerative arthritis, osteophyte proliferation and subchondral bone destruction of the first MTP joint. In adolescents hallux rigidus results from localized cartilage damage of the first MTP joint. As the disease progresses a dorsal osteophyte is formed on the metatarsal head presenting a mechanical abutment to hallux dorsiflexion. Indications for cheilectomy are relief of painful impingement and restoration of 70 degrees intra-operative hallux dorsiflexion. In grade III hallux rigidus concomitant osteotomies are often necessary to restore alignment and decrease articular compression of the first MTP joint (Moberg or Akin osteotomies). Moberg is a dorsal proximal phalanx closing osteotomy or an extension osteotomy of the proximal phalanx. Akin is a medial proximal phalanx closing osteotomy to correct hallux valgus. Both are most commonly stabilized with a staple fixation and rehabilitation needs to be less aggressive.
  Rehabilitation: Patients are in a compressive dressing, post-op shoe and WBAT. Once incision is healed the patient is progressed to a flexible soft soled shoe to promote hallux dorsiflexion. Physical therapy is initiated at 7 - 10 days s/p, 1 - 3x/week and anticipated suture removal 14 - 17 days.
  Protocol/Precautions: (see written protocol) Early aggressive ROM, edema control, desensitization, forefoot and FHL mobilization. Ensure restoration of normal mechanics through mobilization of seasmoids, first ray depression with hallux dorsiflexion. Avoid varus/valgus stress to protect the surgical approach and if osteotomy preformed protect proximal phalanx stresses 4 - 6 weeks. Instruct patient in self ROM techniques 5 - 10 minutes every 2 hours. Expectations are 60 degrees hallux dorsiflexion and restoration of normal functional activities up to 3 months.

- **Interdigital Neuroma/Ganglion/Exostectomy:**
  These procedures are straight excisions involving the affected area. Normally there are no ligamentous or tendinous structures requiring protection. Main areas to address are the hypersensitivity and edema of the affected sites.
  Rehabilitation: Patients are in a compressive dressing, post-op shoe and WBAT. Physical Therapy is initiated at 5 - 7 days s/p, 1 - 3x/week and anticipated suture removal 14 - 17 days.
  Protocol/Precautions: Emphasis is on desensitization, soft-tissue mobilization, reduction of scar formation and edema control to the entire forefoot. ROM to the toes is especially important, as they are susceptible to becoming very stiff early in post-operative period. Achilles tendon flexibility is monitored as a tight Achilles tendon increases forefoot stresses

during gait. Biomechanical assessment, orthosis and shoewear assessment is necessary to help prevent further stress reactions.

- **Arthroscopic Ankle Decompression:**

  These procedures may include but are not limited to debridement of the lateral "gutter" of the ankle, debridement of the sinus tarsi, debridement of anterior and posterior impingement syndromes or removal of loose bodies. Complicating factors that may alter your rehabilitation approaches are associated OCD lesions, tendon tears, tendon repairs or tendon sheath releases. These lesions most commonly occur through repetitive trauma and consequently the rehabilitation program must address the biomechanical inefficiencies and restoration of normal subtalar and talocrural mobility to have the greatest outcomes.

  Rehabilitation: Unless otherwise noted patients are WBAT, physical therapy is initiated 3 - 5 days s/p, 1 - 3x/week and anticipated suture removal 14 - 17 days.
  Protocol/Precautions: Full ankle rehabilitation without precautions excluding when concomitant procedures are preformed. Rehabilitation is to emphasize immediate ROM, decreasing effusion and restoration of normal biomechanics. Progression is based upon pain and effusion. Successful rehabilitation outcomes must not overlook addressing biomechanical inefficiencies, appropriate shoewear, and balance/proprioception deficiencies.

- **Weil osteotomy, lesser toe deformities, MP synovitis (no bunion surgeries):**

  A Weil osteotomy is a common lesser toe deformity procedure in which the head of the metatarsal is shortened in efforts to decompress the joint. The osteotomy is stabilized with a screw fixation.
  Rehabilitation: Patients are in a compressive dressing, post-op shoe with "heel" down weight bearing. Physical therapy is initiated at 3 - 5 days post-op, 1 - 3x/week and anticipated suture removal 14 - 17 days.
  Protocol/Rehabilitation: Emphasis is on desensitization; reduction of scar formation, soft tissue mobilization, edema control and ROM. Caution is needed if concomitant fusion or bunion procedures are performed at other joints. Lesser toe AROM only for the first 2 weeks to protect the fixation, then gentle PROM is progressed. Toe spacers are utilized for the first 4 weeks to maintain alignment. Full ankle and foot rehabilitation is commenced at 4 - 6 weeks post-op as tolerated. Shoe wear is resumed as tolerated and appropriately assessed (wide toe box).

- **Tarsal Tunnel Release/Plantar Fascia Release:**

Tarsal Tunnel Syndrome refers to inflammation of the posterior tibial nerve as it passes through a soft tissue tunnel behind the medial malleolus and enters the foot. Poor foot mechanics, primarily hyperpronation, or direct trauma to this area may cause increased pressure in and around the nerve. As a result, the patient usually will complain of radiating pain, numbness and/or tingling along the course of the nerve. Conservative management includes NSAID's, modalities, desensitization, soft tissue massage, ROM, stretching, strengthening, footwear modifications and orthotics. Surgical management involves release of the flexor retinaculum over the tarsal as well as release of the fascia to the abductor hallucis muscle. This allows for freedom of the nerve and loss of compression.
Plantar fascia release refers to the release of the medial fibers of the plantar aponeurosis and occasionally in non-athletic patients the entire aponeurosis. Even partial release may be associated with increased lateral column overload which must be addressed throughout the rehabilitation process. Not only are proper strengthening, balance and proprioception emphasized, but also shoewear and foot orthosis must be addressed.

Rehabilitation: Patients are in a posterior splint initially and then a walking boot or cast times 4 - 6 weeks, anticipated suture removal 14 - 17 days s/p. Physical therapy is initiated at 4 - 6 weeks s/p, 1 - 3x/week.
Protocol/Precautions: (see written protocol) Emphasis is on desensitization, soft-tissue mobilization - reduction of scar formation, edema control and restoration of normal ROM/biomechanics. Full ankle rehabilitation is initiated along with biomechanical assessment, orthosis assessment and shoe wear assessment.

- **Tenosynovitis (Peroneals, FHL, FDL, Posterior Tibialis) Release/Debridement:**

Tenosynovitis is an inflammatory reaction of the tendinous sheath surrounding the tendon. There is a wide variation to the involvement of the tendon ranging from clear fluid within the sheath and relatively normal appearing tendons to small linear tears in the tendon, to thickened, fibrotic tendon sheaths and grayish appearing but intact tendons. Consequently the extent of surgery ranges from simple tenosynovectomy to tendon repair and/or tendon augmentation. The protocol noted below is for simple tenosynovectomies without tendon tears or repairs.
Rehabilitation: Patients are initially in a posterior gutter splint and progressed to a walker boot NWB at 2 weeks, PWB at 4 weeks and FWB at 6 weeks. Physical Therapy is initiated at 10 - 14 days s/p and anticipated suture removal 14 - 17 days.
Protocol/Precautions: Early ROM is initiated 1x/week for the first 4 weeks and then 1 - 3x/week at 6 weeks with full ankle rehabilitation. Rehabilitation is to emphasize immediate ROM guarding against undue stress to the involved tendon, decreasing effusion and restoration of normal biomechanics. Progression is based upon pain and effusion. Tenosynovitis is an inflammatory condition and excessive irritants that lead to increased pain and/or effusion must be avoided. The progression out of the walking boot and into the appropriate shoe wear is approximately 8 weeks; based upon the patient's pain and effusion. Return to normal activities and sport once pain and effusion is resolved (10 - 12 weeks). Successful

rehabilitation outcomes must not overlook addressing biomechanical inefficiencies, appropriate shoewear, orthosis assessment and balance/proprioception deficiencies.

- **Lateral Ankle Reconstruction** (Brostrom, Modified Brostrom, Modified Brostrom-Evans)

  Although the above procedures are the preferred method of choice and are briefly reviewed within the written protocol one must also be familiar with other less common procedures; Modified Watson-Jones, Evans procedure, Chrisman-Snook.
  Rehabilitation: Patients may be sent for a pre-op visit to discuss rehabilitation, progression, and education of surgical technique. They may also be instructed in appropriate pre-operative strengthening, balance and proprioceptive training similar to our protocol for ACL reconstruction. Post operatively, anticipated suture removal 14 - 17 days and physical therapy is initiated at 6 weeks s/p.
  Protocol/Precautions: (see written protocol) The patient is in a walking boot or cast, NWB times 6 weeks. Initially (at 6 weeks) physical therapy is 1x/week x 4 weeks emphasizing active DF/PF only, edema control, soft tissue mobilization including scar mobilization and restoration of forefoot/toe mobility which becomes quickly restricted. At 10 weeks s/p, full ankle rehabilitation is initiated with emphasis on restricting inversion motion to 10 degrees and restoration of full strength, proprioception and balance. A full biomechanical evaluation is performed to address contributing factors.

- **Achilles Tendon Repair:**

  The preferred surgical method of choice for acute Achilles tendon repairs consists of using suture material to re-approximate the ends of the tendon and restore appropriate length-tension relationships of the gastroc/soleus complex. Due to the variations in surgical techniques (suture, graft augmentation, turn-down procedures) appropriate communication with the surgeon is essential in adjusting the rehabilitation protocol.

  Rehabilitation: Patients are initially in a posterior gutter splint (equinus position) and progressed to a cast or walker boot NWB until 4 weeks, physical therapy is initiated at 2 - 4 weeks, anticipated suture removal at 14 - 17 days.
  Protocol/Precautions: (see written protocol) PWB is initiated at 4 weeks if neutral DF is achieved. FWB is initiated at 6 weeks and the patient is progressed out of the boot with a heel lift in the shoe at 8 weeks. See the written protocol for specific goals and progression.

- **Ankle OCD (talar dome):**

OCD lesions of the talar dome are similar to OCD lesions of the knee and are treated very similarly with debridement, microfracture, pinning of the fragment or chondral transplant. The lesions are generally classified stages I-IV (Berndt and Harty); stage I – a small area of compression of subchondral bone; stage II – a partially detached osteochondral fragment; stage III – a completely detached osteochondral fragment remaining in the crater; and stage IV – a displaced osteochondral fragment.
It is an important part of rehabilitation to understand the position of the lesion as well as possible mechanism of injury. Berndt and Harty reported 43% of lesions were in the middle third of the lateral portion of the talus and 57% were in the medial portion of the talus, usually in the posterior one third. Cadaveric experiments concluded that the lateral lesion was produced by inversion and strong dorsiflexion; where as the medial lesion was produced with inversion, plantar flexion and lateral (external) rotation of the tibia on the talus.

Rehabilitation: The patient is in a posterior splint times 2 weeks and then progressed to a boot NWB; anticipated suture removal 14 - 17 days and initiation of physical therapy at 2 weeks, 1 - 3x/week.
Protocol/Precautions: The patient continues to be NWB until 4 weeks s/p, PWB until 6 weeks s/p and then WBAT at 6 weeks s/p. Initial physical therapy at 2 weeks is to emphasize edema/pain control, forefoot mobility, Achilles mobility, light ankle ROM avoiding compression to the lesion and light NWB strengthening. At 6 weeks s/p gradual progression to full ankle rehab is initiated while paying special attention to compression symptoms at the lesion site. Full unrestricted return to ADL's, work and sport at 4 - 6 months if the patient demonstrates full ROM, strength, no edema, no pain and normalization of biomechanics. A full biomechanical exam is necessary prior to discharge.

- **Ankle Fracture / Calcaneal Fracture:**

There is a wide variety of ankle and calcaneus fractures thus proper communication with the physician is essential. One should have a working knowledge of type of fracture, fixation type and strength, tissue/bone quality and healing restraints. See both the ankle fracture protocol and the calcaneus fracture protocol for general guidelines.

- **<u>Miscellaneous information</u>:**

Distal Chevron: (stable fixation) treatment of hallux valgus angle of less than 40 degrees and an intermetatarsal angle less than 20 degrees. The advantages of this osteotomy are that it is made through cancellous bone, does not shorten the metatarsal and is inherently stable. Most commonly the procedure is for younger patients (adolescents through the fourth decade) with a hallux valgus angle of 30 degrees or less and an intermetatarsal angle of less than 13 degrees. It narrows the

forefoot by reducing the metatarsal angle and when combined with a medial capsulorrhaphy reduces the hallux valgus, and maintains adequate dorsiflexion of the first metatarsophalangeal joint. Fixation is through K-wires, screw or pin.
Proximal Chevron: (unstable fixation) Hold physical therapy until at least 6 weeks s/p. Characteristics of this osteotomy are an obvious more proximal osteotomy at the base of the first metatarsal, less metaphyseal bony contact and an inherently unstable osteotomy. This metatarsal osteotomy is commonly used for more severe deformities and often with a combination osteotomy distally (Akin).

Lapidus Procedure: Arthrodesis of the first metatarsocuneiform articulation. This is a three part correction, first medial capsular release of the hallux, second release of the adductor hallucis from its attachment at the base of the proximal phalanx and fibular seasmoid, mobilization of the seasmoids, third is small wedge osteotomy at the first metatarsocuneiform joint to promote slight plantarflexion and adduction and correction of any rotation to the first metatarsal. Fixation is a cortical screw dorsal to plantar from the medial cuneiform to the proximal first metatarsal. A second cortical screw is placed transversely through the first metatarsal into the second and third. Following the metatarsocuneiform correction the distal realignment of the MTP joint is completed through capsular repair, and at times an Akin basal phalangeal osteotomy is used to further correct the hallux valgus.
Post-operatively patients are casted 2 - 6 weeks until osteotomies are well healed and then physical therapy is initiated emphasizing edema control, desensitization, and scar mobilization. Once this is obtained Achilles is assessed for contracture, hallux DF/PF mobility with no valgus stresses to protect hallux capsulorrhaphy, lesser toe ROM and gait training followed by biomechanical examination.

Dr. Craig Chike Akoh, MD
ACHILLES REPAIR GUIDELINES
REHABILITATION PROTOCOL

	WEIGHT BEARING	**BRACE**	**RANGE OF MOTION**	**STRENGTH/EXERCISES**	**Goals**
PHASE 1 *0-2 WEEKS*	NWB with crutches	Short Leg Splint	N/A	Leg elevation/edema control Upper body ergometer Curl toes down	Wound healing
PHASE 2 *4-6 WEEKS*	Progress to WBAT in CAM boot	CAM boot Worn at all times 2 heel lifts (2-4 wks) 1 heel lift (4-6 wks)	Active dorsiflexion to neutral Gentle passive ankle plantarflexion	SLR Knee ROM Ankle range of motion (ROM) with respect to precautions Pain-free isometric ankle inversion, eversion, dorsiflexion and sub-max plantarflexion Open chain hip and core strengthening	Normalize gait, wean out of crutches Protection of post-surgical repair May progress to phase 3 when pain-free active dorsiflexion to neutral and no wound complications
PHASE 3 *6-12 WEEKS*	WBAT in normal shoes (lift if needed)	Wean from brace	Full active ROM	Frontal and sagittal plane stepping drills (side step, cross-over step, grapevine step) Gentle gastroc/soleus stretching Static balance exercises (begin in 2 foot stand, then 2 foot stand on balance board or narrow base of	Normalize gait on level surfaces without boot or heel lift Single leg stand with good control for 10 seconds Active ROM between 5° of dorsiflexion and 40° of plantarflexion

				support and gradually progress to single leg stand) 2 foot standing nose touches **Ankle plantarflexion strengthening with resistive tubing** Low velocity and partial ROM for functional movements (mini-squat, step back, lunge) Hip and core strengthening Pool exercises if the wound is completely healed	
PHASE 4 *12-24 WEEKS*	WBAT in normal shoes	N/A	Full active ROM	Frontal and transverse plane agility drills (progress from low velocity to high, then gradually adding in sagittal plane drills) Multi-plane proprioceptive exercises – single leg stand 1 foot standing nose touches Ankle strengthening – concentric and eccentric gastroc strengthening Functional movements (squat, step back, lunge) Stationary bike Sports-specific drills (4 mo)	Normal gait mechanics without the boot on all surfaces Squat and lunge to 70° knee flexion without weight shift **Single leg stand with good control for 10 seconds (20 reps) before sports-specific exercises** Active ROM between 15° of dorsiflexion and 50° of plantarflexion **Dynamic neuromuscular control with multi-plane activities, without pain or swelling**

Dr. Craig Chike Akoh, MD
ACCELERATED ACHILLES REPAIR REHABILITATION PROTOCOL

	WEIGHT BEARING	ORTHOTIC DEVICES	RANGE OF MOTION	GOALS	EXERCISES
0-2 weeks	NWB in splint		None	Decrease pain and swelling	Curl toes downward only
2-4 weeks	WBAT in boot	Boot with 2.5 cm heel lift	Plantar flexion of the ankle only.	Working on active plantar flexion only	**No resistance** **No strengthening**
4-6 weeks	Weight bear as tolerated in boot	Progress to No heel lift (reduce to no lift by 6 weeks)	Full Active ankle ROM	Full Active ROM	**Gradual strengthening exercises in plantar flexion only**
6-12 weeks	FWB Wean out of the boot after 6 weeks	None (wean off boot in 1-2 weeks)	Full ROM	Advance strengthening	Advance strengthening exercises to include dorsiflexion. Advance to conditioning exercises such as elliptical, stationery biking and swimming. Advance to resisted strengthening.
12+ weeks	Ok to begin jogging	None	Full ROM	Sport specific activities	Return to sport usually by 4-6 months

Dr. Craig Chike Akoh, MD
MODIFIED BROSTROM/LATERAL ANKLE LIGAMENT RECONSTRUCTION REHABILITATION PROTOCOL

	WEIGHT BEARING	ORTHOTIC DEVICES	RANGE OF MOTION	GOALS	EXERCISES
0-2 weeks	NWB	SLS	None	Decrease pain and swelling	N/A
2-4 weeks	NWB	SLC	none	Decrease pain and swelling	**Core and UE exercises**
4-6 weeks	Progress WBAT (if brostom + peroneals_ NWB (if reconstruction)	CAM boot SLC	none	AROM	**Core and UE exercises** **AROM (plantarflexion and dorsiflexion only)**
6-10 weeks	WBAT	ASO brace	AROM No eversion/inversion	Pain-free ambulation	HEP-theraband (no eversion/inversion) Isometric strengthening in neutral
10-12 weeks	WBAT	ASO brace	AROM Begin eversion, no inversion		Dynamic balance and proprioceptive training Retro walking Stationary bicycle Stairmaster eliptical
12+ weeks	WBAT	Wean from ASO brace	Full ROM May begin inversion	Normalize strength Restore A/PROM Return to sport	Close kinetic chain drills Single leg balancing Plyometrics Jogging at 16 weeks (criteria-15 single leg toe raises) Sports specific drills

Dr. Craig Chike Akoh, MD
TARSAL TUNNEL AND PLANTAR FASCIA RELEASE REHABILITATION PROTOCOL

	WEIGHT BEARING	ORTHOTIC DEVICES	RANGE OF MOTION	GOALS	EXERCISES
0-2 weeks	NWB	SLS	None	Decrease pain and swelling	N/A
2-4 weeks	NWB	SLC	none	Decrease pain and swelling	**Core and UE exercises**
4-6 weeks	PWB	CAM boot	AROM	AROM desensitization	**Core and UE exercises** **AROM (plantarflexion and dorsiflexion only)**
6-10 weeks	WBAT	Normal shoe + compression socks	AROM Slow on inversion No eversion	Desensitization Normalize gait	Achilles stretching Theraband dorsiflexion/plantarflexion Balance training Close chain strengthening Stationary bicycling
10-12 weeks	WBAT	ASO brace	AROM Begin eversion	Independent ADLs	Dynamic balance and proprioceptive training Retro walking Stationary bicycle Stairmaster eliptical
12+ weeks	WBAT	Wean from ASO brace	Full ROM May begin inversion	Return to sport	Nonathlete- discharge Athlete- sports-specific training

Dr. Craig Chike Akoh, MD
LATERAL MALLEOLAR OR MEDIAL MALLEOLAR FRACTURE REHABILITATION PROTOCOL

	WEIGHT BEARING	ORTHOTIC DEVICES	RANGE OF MOTION	GOALS	EXERCISES
0-2 weeks	NWB	SLS	None	Decrease pain and swelling Wound healing	N/A
2-4 weeks	NWB	SLC	None	Decrease pain and swelling Wound healing	N/A
4-6 weeks	PWB	CAM Boot	AROM	Decrease pain and swelling Gait training	AROM AAROM Soft tissue mobilization Midfoot joint mobilization Stationary bike
6-8 weeks	WBAT	Wean out of boot. Start ASO brace	AROM		- Ankle isometrics progressing to open chain isotonics - Closed chain exercise including weight machines, weight shifts, seated BAPS - Proprioception exercise including SLB, diagonal doming and foot intrinsic strengthening - Joint mobilizations to increase talocrural and subtalar ROM
8-10 weeks	WBAT	ASO brace	Full		- Progress closed chain exercises – Sportcord, lunges, heel raises etc - Dynamic balance progression – mini tramp, SLB on uneven surfaces - Advanced proprioception exercises - Continue to advance weight machine exercises, stretching, ROM and joint mobilizations

12+ weeks	WBAT	Regular shoe +/- orthotic	Full ROM	Prevent equinus Gait training	- Progress walk/jogging program - Fit for orthotics if needed - Progress previous strengthening, stretching and propriception exercises - Sport and agility drills/tests

Dr. Craig Chike Akoh, MD
BIMALLEOLAR OR TRIMALLEOLAR ANKLE FRACTURE REHABILITATION PROTOCOL

	WEIGHT BEARING	ORTHOTIC DEVICES	RANGE OF MOTION	GOALS	EXERCISES
0-2 weeks	NWB	SLS	None	Decrease pain and swelling Wound healing	N/A
2-6 weeks	NWB	SLC	None	Decrease pain and swelling Fracture healing	N/A
6-10 weeks	PWB	CAM Boot	AROM	Decrease pain and swelling Gait training	AROM AAROM Soft tissue mobilization Midfoot joint mobilization Stationary bike
10-12 weeks	WBAT	Wean out of boot. Start ASO brace	AROM		- Ankle isometrics progressing to open chain isotonics - Closed chain exercise including weight machines, weight shifts, seated BAPS - Proprioception exercise including SLB, diagonal doming and foot intrinsic strengthening - Joint mobilizations to increase talocrural and subtalar ROM
12-14 weeks	WBAT	ASO brace	Full		- Progress closed chain exercises – Sportcord, lunges, heel raises etc - Dynamic balance progression – mini tramp, SLB on uneven surfaces - Advanced proprioception exercises - Continue to advance weight machine exercises,

					stretching, ROM and joint mobilizations
14+ weeks	WBAT	Regular shoe +/- orthotic	Full ROM	Prevent equinus Gait training	- Progress walk/jogging program - Fit for orthotics if needed - Progress previous strengthening, stretching and propriception exercises - Sport and agility drills/tests

Dr. Craig Chike Akoh, MD
DIABETIC/CONSERVATIVE ANKLE FRACTURE REHABILITATION PROTOCOL

	WEIGHT BEARING	ORTHOTIC DEVICES	RANGE OF MOTION	GOALS	EXERCISES
0-2 weeks	NWB	SLS	None	Decrease pain and swelling Wound healing	N/A
2-6 weeks	NWB	SLC	None	Decrease pain and swelling Fracture healing	N/A
6-12 weeks	NWB	CAM Boot	AROM	Decrease pain and swelling Gait training	AROM AAROM Soft tissue mobilization Midfoot joint mobilization No bicycling
12-14 weeks	PWB	CAM Boot	AROM	Improve ROM	- Ankle isometrics progressing to open chain isotonics - Closed chain exercise including weight machines, weight shifts, seated BAPS - Proprioception exercise including SLB, diagonal doming and foot intrinsic strengthening - Joint mobilizations to increase talocrural and subtalar ROM
14-16 weeks	WBAT	ASO brace	Full	Improve strength	- Progress closed chain exercises – Sportcord, lunges, heel raises etc - Dynamic balance progression – mini tramp, SLB on uneven surfaces - Advanced proprioception exercises - Continue to advance weight machine exercises, stretching, ROM and joint mobilizations

16+ weeks	WBAT	Regular shoe +/- orthotic	Full ROM	Prevent equinus Gait training	- Progress walk/jogging program - Fit for orthotics if needed - Progress previous strengthening, stretching and propriception exercises - Sport and agility drills/tests

Dr. Craig Chike Akoh, MD
CALCANEUS FRACTURE
REHABILITATION PROTOCOL

	WEIGHT BEARING	ORTHOTIC DEVICES	RANGE OF MOTION	GOALS	EXERCISES
0-10 weeks	NWB	SLS	None	Decrease pain and swelling	N/A
10-12 wks	PWB	SLC	AROM ankle	Restore ankle ROM Peroneal tendon soft tissue mobilization	HEP
12+ weeks	WBAT	Regular shoe =/- orthotic	AROM ankle	Prevent equinus Gait training	PROM Joint mobilization to subtalar joint Heel cord stretching Gait training Open chain strengthening Progress function based on ankle fracture protocol

Dr. Craig Chike Akoh, MD
FLATFOOT RECONSTRUCTION
REHABILITATION PROTOCOL

	WEIGHT BEARING	ORTHOTIC DEVICES	RANGE OF MOTION	GOALS	EXERCISES
0-2 weeks	NWB	SLS	None	Decrease pain and swelling Wound healing	-NWB gait training -Strict elevation -Hip/Knee AROM and stretching
2-6 weeks	NWB	SLC	None	Decrease pain and swelling Osteotomy healing	-straight leg raises -elevation -long arc quads -pelvic and core strengthening -toe AROM -4 way ankle isometrics in cast
6-10 weeks	PWB	CAM Boot	AROM, no PROM	Progressive weight bearing	-AROM -AAROM -Soft tissue mobilization -Midfoot joint mobilization -Stationary bike -Forefoot towel scrunches -Gentle Achilles stretching
10-12 weeks	WBAT	Wean out of boot. Start ASO brace	AROM	Caution with active inversion/eversion	- Ankle isometrics progressing to open chain isotonic - Closed chain exercise including weight machines, weight shifts, seated BAPS - Proprioception exercise including SLB, diagonal doming and foot intrinsic strengthening - Joint mobilizations to increase talocrural and subtalar ROM

12+ weeks	WBAT	ASO brace	Full AROM/PROM		- Progress closed chain exercises – Sportcord, lunges, heel raises etc - Dynamic balance progression – mini tramp, SLB on uneven surfaces - Advanced proprioception exercises - Continue to advance weight machine exercises, stretching, ROM and joint mobilizations

Dr. Craig Chike Akoh, MD
CAVOVARUS RECONSTRUCTION
REHABILITATION PROTOCOL

	WEIGHT BEARING	ORTHOTIC DEVICES	RANGE OF MOTION	GOALS	EXERCISES
0-2 weeks	NWB	SLS	None	Decrease pain and swelling Wound healing	-NWB gait training -Strict elevation -Hip/Knee AROM and stretching
2-6 weeks	NWB	SLC	None	Decrease pain and swelling Osteotomy healing	-straight leg raises -elevation -long arc quads -pelvic and core strengthening -toe AROM -4 way ankle isometrics in cast
6-10 weeks	PWB	CAM Boot	AROM, no PROM	Progressive weight bearing	-AROM -AAROM -Soft tissue mobilization -Midfoot joint mobilization -Stationary bike -Forefoot towel scrunches -Gentle Achilles stretching
10-12 weeks	WBAT	Wean out of boot. Start ASO brace	AROM	Caution with active inversion/eversion	- Ankle isometrics progressing to open chain isotonic - Closed chain exercise including weight machines, weight shifts, seated BAPS - Proprioception exercise including SLB, diagonal doming and foot intrinsic strengthening

					- Joint mobilizations to increase talocrural and subtalar ROM
12+ weeks	WBAT	ASO brace	Full AROM/PROM		- Progress closed chain exercises – Sportcord, lunges, heel raises etc - Dynamic balance progression – mini tramp, SLB on uneven surfaces - Advanced proprioception exercises - Continue to advance weight machine exercises, stretching, ROM and joint mobilizations

Dr. Craig Chike Akoh, MD
TOTAL ANKLE REPLACEMENT
REHABILITATION PROTOCOL

	WEIGHT BEARING	ORTHOTIC DEVICES	RANGE OF MOTION	GOALS	EXERCISES
0-2 weeks	NWB in SLS	SLS	None	Decrease pain and swelling Wound healing	Crutch training Frequent leg elevation
2-4 weeks	NWB SLC	SLC	none	Decrease pain and swelling Hip and knee ROM	**Frequent leg elevation** **Hip and ankle AROM**
4-6 weeks	PWB (TAR only) NWB (TAR + osteotomy or Brostrom)	CAM boot or SLC	none	Edema control Prevent equinus contracture Scar mobilization	**N/A**
6-8 weeks	FWB May begin PT	CAM boot Compression socks	Full ROM	Edema control Maintain hip and knee strength Scar mobilization Prevent equinus	- HEP (AROM, alphabet, ankle circles, intrinsics/towel scrunch) - Theraband - Gait training
8-12 weeks	FWB	CAM boot Compression socks	Full ROM	Gait training	Calf stretches Leg raises (no ankle weights) Hamstring curls (no ankle weights) biking (in CAM boot)
12+ weeks	FWB	ASO ankle brace	Full ROM	ADLs Normal gait, minimal effusion	Swimming Stationary bike Squats/steps Proprioception exercises Light jogging