ValleyOrtho Rehabilitation Playbook Series

Physician: Dr. Noel Armstrong **Physician Assistant:** Edlin Jara-Mollnar, Dawn Hershberger **Clinic Coordinator:** Cindy Davis-Thompson
Office Phone: 970-384-7140 **Office Fax:** 970-384-8133

Surgical Procedure: Bunionectomy: Lapidus, Minimal Incision/Chevron

The intent of this information is to inform the treating clinician on the evidence-based considerations to be used as a guideline regarding the surgery noted above. This is not a substitute for appropriate clinical decision making, but a supplement to that effect. If at any time a clinician feels uncertain about a given phase discrepancy or patient presentation they are strongly encouraged to discuss this with the referring physician and his/her team.

****It is the responsibility of the therapist to read the operative report before providing care to the patient to improve treatment communication***.*

Therapeutic Activity Progression Disclaimer: Progression to the next phase should be strongly based on meeting clinical criteria (not solely based on the post-operative timeframes) and in collaboration with the referring surgeon. Exercise prescription should be clinically directed by pain and performance absent of detrimental movement patterns with respect to proper biomechanics of the spine, hip, knee and ankle.

***Communication from Therapist to Surgical Team*:** When a treating therapist feels the need to reach out to Dr. Armstrong, or a member of his team, at any point for any reason they are strongly encouraged to do so. All concerns are not explicitly written and clinical judgement is paramount. Below is a handful of reasons and suggested methods of contact to promote communication:

Urgent Red Flag Communication: the patient is in clinic and an action is required as directed by referring staff office

- Uncontrollable and unremitting pain.
- Signs of infection at incision or treated limb.
- Severe palpation tenderness, swelling, tachycardia (UE or LE DVT).
- Labored breathing (PE).
- After a fall/trauma, or near fall/trauma, resulting in a clinical change.

Preferred Contact Method: Preferred Contact Method: Immediate phone call to speak with MD, PA, or Office staff at office phone. If no answer call Provider line at 970-384-7147

Administrative Needs

- Rehabilitation Prescription needed or prescription change requests
- Appointment needed with the physician office, or medication refill

Preferred Contact Method: Phone call to office staff

Other Patient Concerns During Clinic Hours M-TH 9-5pm F 9-3pm

- Abnormal pain, comorbidities or complications that may prevent attainment of established discharge criteria.
- Patient is noncompliant with rehabilitation process.
- Adverse work or home practices negatively impacting recovery.
- Patient expresses discontent or concerns with the current POC established by PT and/or by MD/PA

Contact Method: Office Phone call to MD &/or PA

Preferred Updates before checkup visits with MD/PA

During Clinic Hours M-TH 9-5pm F 9-3pm

- Info regarding adherence/participation in rehabilitation process.
- Progress and trending nature of the patient's rehab course.

Preferred Contact Method: Office Phone call to MD &/or PA. **Or** Fax update

Phase 0: Pre-Operative Preparation

Goals:

- Address proximal loading issues that may impact recovery
- Educate patient on post-surgical process and initial HEP

Phase 0 Therapeutic Activities:

- Address hip, knee and ankle mobility and strength for improved post-operative outcomes
- Screen for low back contributions to pain that can impact recovery
- Select and train patient on most appropriate post-operative AD
- Communicate with Dr. Armstrong's team about progress and surgical readiness

---

Phase 1: Protection, Edema Control & AROM (*wks 1 & 2*)

Goals:

- Minimize pain/swelling with elevation rest and cold therapy[5-9]
- Decrease movement inhibition around surgical foot. Initiate AROM program at ankle and big toe[5,9]
- Patient is proficient at initial HEP provided at time of surgery

Precautions/Restrictions:

- WB/Gait:
  - ☐ NWB with crutches for 7 days[9]
  - ☐ Short boot provided for WBAT at 1 wk f/u MD appointment
  - ☐ Heel TDWB only[9]
- Activity:
  - ☐ No formal Physical Therapy in this phase, delayed start to week 3[9]
  - ☐ No impact or RROM[5-9]

Phase 1 Therapeutic Activities:

- AROM:
  - ☐ AROM program at ankle and big toe as tolerated[5,9]

Phase 2: ROM, Total LE Strengthening & Balance (*wks 3 to 6*)

Goals:

- Start formal outpatient PT at week 3
- Consistent swelling resolution despite activity increases
- Increase mobility of surgical ankle/foot/toe without increasing swelling

Precautions:

- WB/Gait:
  - ☐ Short boot WBAT[9]
    - ▪May sleep in bandage but must be in boot for ambulation
- PROM:
  - ☐ Gentle Ankle/Foot/Toe ROM < significant pain increase[5-7,9]
- AAROM:
  - ☐ Delay until week 4 at 1st MTP[9]
- RROM:
  - ☐ No isolated RROM at 1st MTP in this phase[9]
- Activity:
  - ☐ No moderate to high impact [5-9]

Phase 2 Therapeutic Activities:

- Gait:
  - ☐ Ensure proper weight shifting over involved extremity with appropriate assistance based on repair type and WB in boot
- Incision Management:
  - ☐ **Day 21:** Remove dressing and check for dehiscence or signs infection. Communicate with MD team as needed[9]
  - ☐ Scar mobilizations on healed incisions to tolerance[6,7]
- ROM:
  - ☐ OKC Hip, knee and ankle, foot, great toe mobility as needed[9]
  - ☐ Stationary bike as tolerated weightbearing through heel only in boot[7,9]
  - ☐ Joint mobilizations as tolerated avoiding fused joints when present[6,7]
- Strengthening:
  - ☐ Total LE OKC strengthening/activities
- Balance:
  - ☐Proprioception within precautions

Criteria for Progression to Phase 3:

- Improving gait mechanics without AD
- Healed incisions and X-ray healing for footwear/WB changes

Phase 3: Total LE Strengthening & Balance (*wks 7 - 11*)

Goals:

- D/C boot and wean from crutches with x-ray confirmation from MD[9]
- 60-70% ROM return at 1st MTP[9]

Precautions:

- WB/Gait:
  - ☐ WBAT in sturdy shoe with MD approval from X-ray healing confirmation[9]
- Tissue Enlargement Not Uncommon
  - ☐ Foot may become more swollen or larger in this phase with increase in WB and activity. Manage slow progression of activity tolerance to target a gradual decrease in swelling towards the end of this phase
- Activity:
  - ☐ No moderate to high impact[5-9] until next phase

Phase 3 Therapeutic Activities:

- ROM:
  - ☐ Increase intensity of scar mobilizations and joint work with respect to any joint fusions[6,7,9] to attain best ROM potential
- Strengthening & Activity:
  - ☐ May use forefoot for pressure on stationary bike at week 10[5-9]
  - ☐ gradual progression of WB exercises that involve 1st MTP extension
  - ☐ Total LE strengthening as tolerated within precautions
- Balance:
  - ☐ Proprioception training progressions with variable surfaces and perturbations as tolerated

Criteria for Progression to Phase 4:

- Patient able to walk with minimal limp in post-op shoe
- Single leg stance of 5 seconds with eyes open and TUG of < 13.5 seconds
- 1st MPT ext ROM to 50 degrees
- DF ROM to 10 degrees with knee straight
- DF ROM to 30 degrees knee bent
- Pt able to perform 15 consecutive full ROM single leg heel raises

Phase 4: Single Leg Strength & Plyometrics (*wks 12+*)

Goals:

- Increasing strength to support desired activity
- Optimize biomechanics at the hip, knee and ankle
- Address remaining barriers to RTS
- Establish patient specific HEP relative to resources and goals.
- Post activity soreness resolves within 24 hours

Precautions:

- Ensure proper limb biomechanics with activity progressions to optimize force distribution across 1st MTP

Phase 4 Therapeutic Activities:

- Begin sport specific drills/patterns at 50% effort
- Single leg plyometric progressions
- Ladder drills and progressive agility at 50-75% effort as tolerated
- High level balance training
- Slow progressions of cutting/pivot & decelerating intensity as tolerated
- Continue total lower extremity strengthening based on remaining deficits

Abbreviation List:

AAROM: Active assisted range of motion
ABD: Abduction
AD: Assistive device
ADL: Activity of daily Living
AROM: Active range of motion
PE: Pulmonary embolism
BW: Body Weight
CKC: Closed kinetic chain
DVT: Deep vein thrombosis
ER: External rotation
EXT: Extension
FWB: Full weight bearing
GHJ: Gleno-humeral joint
HEP: Home exercise program
HS: Hamstring
IR: Internal rotation
WBAT: Weight bearing as tolerated
LE: Lower extremity
LSI: Limb Symmetry Index
MD: Medical doctor
NWB: Non weight bearing
OKC: Open kinetic chain
PA: Physician assistant
PROM: Passive range of motion
ROM: Range of motion
RROM: Resisted range of motion
RTS: Return to sport/activity
UE: Upper extremity
WB: Weight bearing
≠: Absent/Without
#: Pounds
≈: Approximately
≤: Less than or equal to
≥: Greater than or equal to

Bunionectomy References:

1. Katarzyna, K et al. Women after bilateral surgical correction of hallux valgus do not show improvement in spatiotemporal gait parameters at 18 weeks postoperatively. *Journal of Clinical Medicine.* 2021; 10: 608. DOI 10.3390/jcm10040608.
2. J. Klugarova et al. Hallux valgus surgery affects kinematic parameters during gait. *Clin biomech.* 2016 December; 40: 20-26. Doi: 10.1016/j.clinbiomech.2016.10.004.
3. Fleischer, A et al. Effects of hallux valgus surgery on balance and gait in middle aged and older adults. *J Foot Ankle Surg.* 2022; 61(4): 798-801. Doi: 10.1053/j.jfas.2021.11.019.
4. Dismore, L et al. A qualitative study to understand patients' experiences of their post-operative outcomes following forefoot surgery. *British journal of pain.* 2022, vol 16(3): 317-325. DOI 10.1177/20494637211060278.
5. Orthopaedic Specialists Foot and Ankle Service. Rehabilitation protocol bunion surgery. https://os.clinic/wp-content/uploads/2019/07/rehab-bunion-surgery-final-slb.pdf
6. Massachusetts General Hospital. Physical Therapy Guidelines for Hallux Valgus Correction (Bunion Reconstruction). https://www.massgeneral.org/assets/mgh/pdf/orthopaedics/foot-ankle/pt-guidelines-hallux-valgus-correction-final.pdf
7. Dr. Eric Caporusso, DPM Lapidus Bunionectomy Protocol https://www.northwoodstherapy.com/assets/files/2019/02/caporusso-foot-ankle-lapidus-bunionectomy.pdf
8. Anthony Yi, MD. Post-Surgical Rehabilitation Protocol for Minimally Invasive Hallux Valgus (Bunion) Surgery. https://www.anthonyyimd.com/pdf/postop-mis-buniion-surgery-rehab-protocol.pdf
9. Armstrong, N. M.D. Expert opinion and consultation.

Valley Ortho

VALLEY VIEW