

Table E-1: Physical Therapy Protocol

During the initial six weeks of the study:

- All subjects must employ touch-down weight-bearing on the affected hip.
- If both hips are painful, prescribe a wheelchair for subject to use for all mobility.
- If only one hip is painful, prescribe crutches, walker, or other appropriate equipment for all mobility.
- Order physical therapy once or twice per week to:
 1. Stretch hip adductors and other hip muscles as needed.
 2. Strengthen hip abductors without weights and other hip muscles as needed.
 3. Monitor home program of twice-daily stretching and strengthening of hip muscles.
- Do not have patient perform exercises when in sickle cell crisis.
- Subjects randomized to surgery need to be trained how to walk with crutches prior to surgery.

After the initial six weeks:

- Subject may bear weight as tolerated.
- Order physical therapy once or twice per month for three months to:
 1. Continue stretching hip adductors and other hip muscles as needed.
 2. Strengthen hip abductors with low-weight and high-repetition exercises as tolerated.
 3. Assess gait and gait train as indicated.
 4. Monitor home program of strengthening of hip muscles.

Some patients may not be able to tolerate any exercises because of pain and/or weakness; if this is the case, continue without weighted exercise and progress as indicated.

Decompression Coring Study for AVN in Sickle Cell Disease

(Part A: Physical Therapist)

Subscores are added separately for each hip.

1. PATIENT IDENTIFICATION DATA:

A. [____-____-____] STUDY ID # B. [_____] ACROSTIC
C. [____/____/____] EXAM DATE D. STUDY HIP: R / L

2. Name of Therapist conducting exam: [_____] Phone #: [_____]

Visit #(check one):

__Baseline __6wks __3mos __6mos __9mos __12mos __15mos __18mos __21mos __mos (fill in)

3. DEGREE OF HIP PAIN: During the past few weeks, how would you describe your hip pain?

Right Hip	Left Hip	(check one box for each hip):	
[0]	[0]	INCAPACITATING	Limitation of all activities (i.e. wheelchair dependent)
[10]	[10]	SEVERE	Major limitation of most activities (i.e. uses gait aid daily)
[20]	[20]	MODERATE	Some limitation of some activities (i.e. uses gait aid occasionally)
[30]	[30]	MILD	Minimal or no significant limitation (i.e. no use of gait aid)
[40]	[40]	NONE	No pain and NO limitation of any activity.

4. FUNCTION (Check highest level of function for each section)

A. DRESSING:

In the past few weeks, have you had any pain, discomfort, or difficulty with putting on or taking off socks or shoes? (Check one)

- [0] Most of the time
- [2] Occasionally
- [4] Never

B. GAIT:

1. Which types of gait aid have you used in the past few weeks? (Check all that apply)

- [8] None (skip to question 4-B3* below)
- [] Cane
- [] Crutches
- [] Walker
- [] Wheelchair

2. Using a gait aid, how far can you comfortably walk without stopping? (Check one)

- [8] Unlimited
- [7] Long distances but limited (max 6 blocks or full length of mall twice)
- [5] Short distances (2-3 blocks max)
- [3] Household only (100-200 feet max)
- [0] Transfers only; requires wheelchair

*3. Without a gait aid, how far can you comfortably walk without stopping? (Check one)

- [11] Unlimited
- [7] Long distances but limited (max 6 blocks or full length of mall twice)
- [5] Short distances (2-3 blocks max)
- [3] Household only (100-200 feet max)
- [0] Transfers only; requires wheelchair

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[__/__/__] EXAM DATE

4. C. SITTING: (check one)

- [5] Can sit comfortably in ANY position (i.e. have patient demonstrate ring sitting)
- [3] Can sit comfortably at a table or movies but can't tolerate other sitting positions
- [0] Unable to sit comfortably for more than a few minutes without changing positions

D. STAIR CLIMBING: How are you comfortably able to climb a flight of stairs?
(Check highest level of function)

- [4] Foot over foot without a railing
- [2] Foot over foot with a railing
- [1] Foot to foot stair climbing with or without railing
- [0] Unable to climb stairs or only with great difficulty

5. PASSIVE RANGE-OF-MOTION

	<u>RIGHT HIP</u>	<u>LEFT HIP</u>	<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>
A. HIP INT ROT (sitting, knee 90°)	[] °	[] °	<16	16-29	30-39	>39
B. HIP EXT ROT (sitting, knee 90°)	[] °	[] °	<16	16-29	30-39	>39
C. HIP FLEXION (supine)	[] °	[] °	<90	90-100	101-114	>114
D. HIP ABDUCTION (supine)	[] °	[] °	<20	20-29	30-39	>39

E. THOMAS TEST:

Hip Flexion Contracture present: [0] Yes [] °contracture [0] Yes [] °contracture
[1] No [1] No

6. MANUAL MUSCLE TESTING (through available ROM):

Score each as follows: 1 = Trace or No Movement 3 = Anti-Gravity 5 = Tolerates Normal Resistance
2 = Less than Anti-Gravity 4 = Anti-Gravity with Resistance

	<u>RIGHT (1-5):</u>	<u>0</u>	<u>1</u>	<u>2</u>	<u>LEFT (1-5):</u>
A. HIP FLEXION:	[]	1-2	3	4-5	[]
B. HIP EXTENSION:	[]	1-2	3	4-5	[]
C. HIP ABDUCTION:	[]	1-2	3	4-5	[]
D. HIP ADDUCTION:	[]	1-2	3	4-5	[]

7. A. BEST STEP HEIGHT

	<u>RIGHT HIP:</u>	<u>LEFT HIP:</u>
PERFORMANCE:	[0] Unable	[0] Unable
	[2] 15-20 cm (step)	[2] 15-20 cm (step)
	[6] > 50 cm (transportation)	[6] > 50 cm (transportation)

8. A. AMBULATION SPEED

NO GAIT AID: 25 m distance: [] seconds
GAIT AID: 25 m distance: [] seconds (N/A if 4-B = none)

B. LIMP (check one only):

- [1] No limp; no gait aid
- [0] No limp; with gait aid
- [0] Limp; no gait aid
- [0] Limp; with gait aid