

## Orthopaedic Clinical Tool #2: Alternate Method for Determining Safe Lifting and Holding of Limbs with Casts

**Table 2.1. Predicted Weight for Different Types of Casts**

Limb	Limb Weight Factor	1-hand	2-hands	2-hands 1 min.	2-hands 2 min.	2-hands 3 min.
Leg	0.157	11.1 lbs.	22.2 lbs.	11.6 lbs.	7.8 lbs.	6.4 lbs.
Arm	0.051	(5.1 kg.)	(10.2 kg.)	(5.3 kg.)	(3.5 kg.)	(2.9 kg.)

Multiply the patients' weight times the limb factor (0.157 for leg and 0.051 for arm) and add the weight of the cast. Compare the calculated weight to the value in the appropriate task box. If the total limb weight exceeds the weight in the appropriate box, then the caregiver should not manually lift the limb alone, but should use an assistive device or more than one caregiver to perform the lift. On the other hand, if the calculated weight is less than the value in the appropriate box, then it is acceptable to manually lift and hold the limb and the caregiver should use clinical judgment and not hold longer than noted.

For example if the patient weighs 200 lbs. and has an arm cast weighing 5 lbs., then the total arm weight would be 200 lbs. x 0.051 plus 5 lbs., or 15.2 lbs. In this case, the arm should not be lifted with one hand (i.e., 15.2 lbs. > 11.1 lbs.) but could be lifted with two hands (i.e., 15.2 lbs. < 22.2 lbs.), but not held in that position less than a few seconds (15.2 lbs. > 11.6 lbs.). Similarly, if the patient weighs 75 lbs. and has a 5 lb. leg cast, then the total limb weight would be 75 lbs. x 0.157 plus 5 lbs., or 16.8 lbs. In this case, it would not be acceptable to lift the limb with one hand (i.e., 16.8 lbs. > 11.1 lbs.), but it would be acceptable to lift it with two hands (i.e., 16.8 lbs. < 22.1 lbs.), but should not be held more than a few seconds (16.8 lbs. > 11.6 lbs.).

**Table 2.2. Predicted Weights for a Fiberglass Cast**

The following Table 2.2 provides some predicted weights for a fiberglass cast.

Short Arm Cast (adult)	Long Arm Cast (adult)	Short Leg Walking Cast (150 lbs. adult)	Long Leg Cast (150 lbs. adult)	Infant Body Spica 20-30 lbs.	Child Body Spica 3-5 yr old 30-50 lbs.
0.5 lbs.	1 lbs.	2 lbs.	3.0 lbs.	2 lbs.	4lbs.
2 rolls 3"	1 roll 2"	4 rolls 4"	3 rolls 3"	2 rolls 2"	5 rolls 3"
	3 rolls 3"		3 rolls 4"	3 rolls 3"	5 rolls 4"
+ webril*	+ webril*	+ webril*	+ webril*	+ webril*	+ webril*

\*Weight of webril is 0.25 lb. per packet