

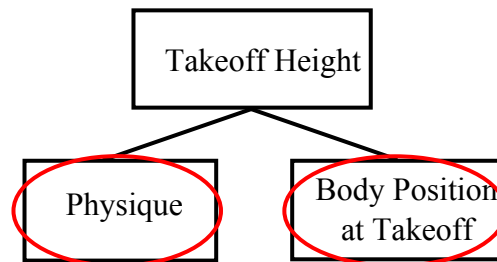
Contributions to overall jump and reach height

	One-legged Jump	Two-legged Jump	Attack Jump	Attack jump
Overall Height	100%	100%	100%	8'10"
Takeoff Height	44%	40%	47%	4'2" ★
Flight Height	14%	18%	14%	1'3"
Reach Height	42%	42%	39%	3'5" ★
Loss Height	0%	0%	0%	-0'8"

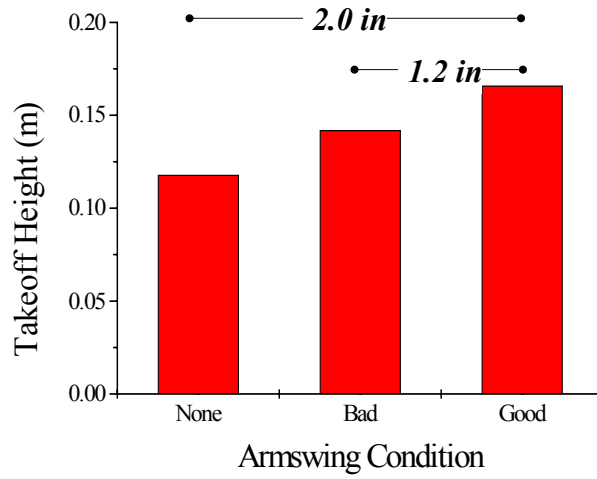
Physique and Sub-Height Correlations

	Mass	Standing	Takeoff	Flight	Reach	Contact
Mass	-					
Standing	.68	-				
Takeoff	.82	.92	-			
Flight	-.88	-.83	-.87	-		
Reach	.27	.35	.41	-.34	-	
Contact	-.23	-.04	.04	.29	.70	-

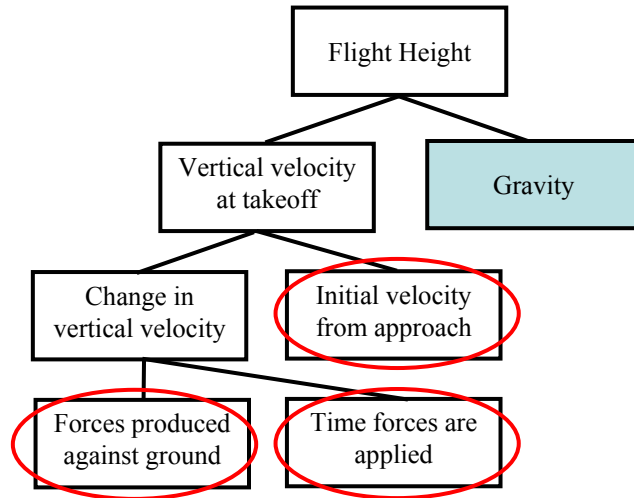
Things Affecting Takeoff Height



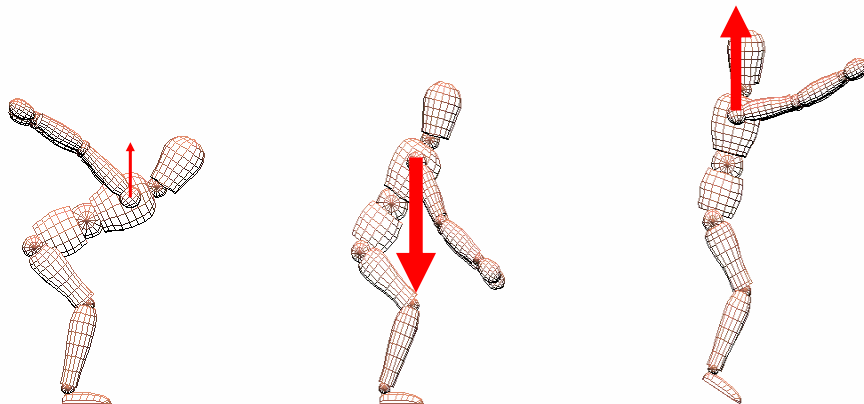
Takeoff Height Results



Things Affecting Flight Height



Effects of the Armswing

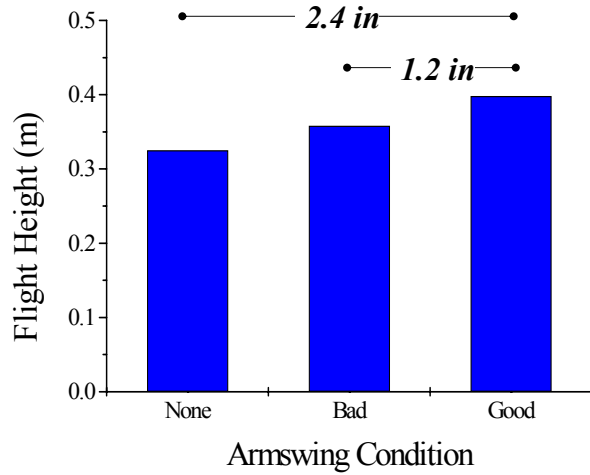


Lift effect

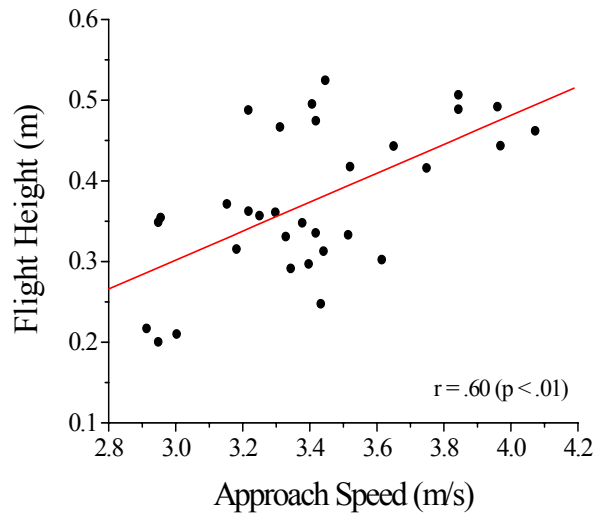
Compression effect

Lift effect

Flight Height Results

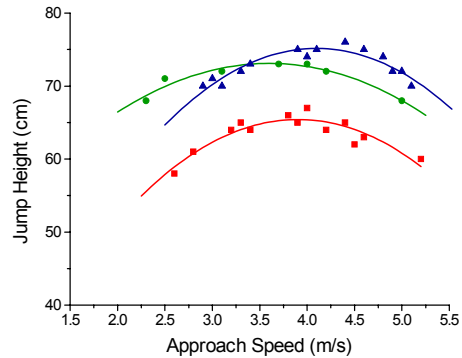


Approach Speed vs. Flight Height

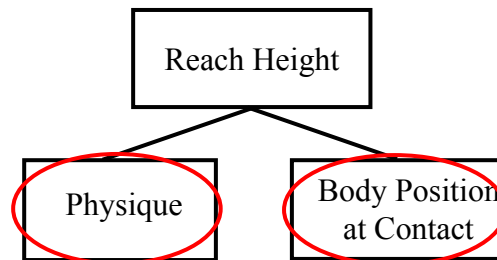


Effects of Approach and Armswing

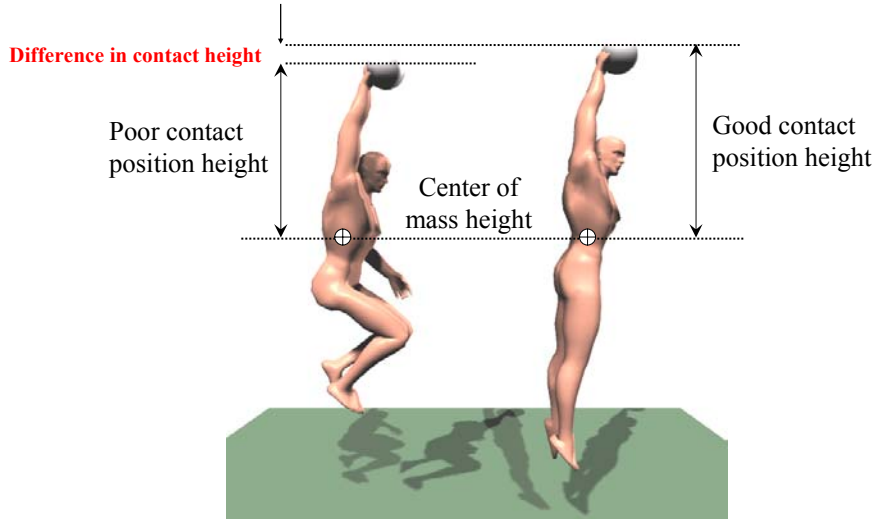
- CM elevation without armswing: **30 cm**
- CM elevation with armswing: **36 cm**
- CM elevation with armswing & approach: **54 cm**
- An optimal approach speed may exist



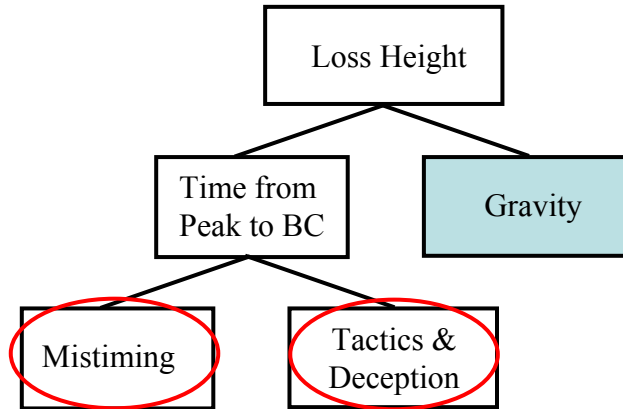
Things Affecting Reach Height



Reach Height vs. Ball Contact Height



Things Affecting Loss Height



Approach, Takeoff, and Flight Results

- **Approach:**
 - Velocity: 3.4 ± 0.3 m/s (7.6 mph)
 - Crosscourt angle: $26.8 \pm 10.5^\circ$
- **Flight:**
 - Time of flight: 0.58 ± 0.06 s
 - Time to contact: 0.32 ± 0.03 s
- **Takeoff:**
 - Velocity: 3.3 ± 0.3 m/s (7.4 mph)
 - Elevation angle: $58.6 \pm 6.4^\circ$
 - Crosscourt angle: $15.3 \pm 15.4^\circ$
 - Hip/shoulder orientation: 68.8°
 - Left foot orientation: 81.7°
 - Right foot orientation : 60.7°
 - Distance between feet: 0.7 ft



Approach, Takeoff Velocity vs. Flight

