

# A 6-stage model for teaching the (squat) clean in strength and conditioning

Kevin Watson<sup>1</sup>, Katrina Gibbon<sup>1</sup>,  
Gareth Walton<sup>2</sup> and Mark  
McKenna<sup>3</sup>.

Address for correspondence:  
kevin.watson@glasgowlife.org.uk



<sup>1</sup> Glasgow School of Sport, Glasgow, UK  
<sup>2</sup> Setanta College, Co. Kildare, Ireland  
<sup>3</sup> University of the West of Scotland, UK

## Rationale

Existing literature describes models used to teach the clean (Hedrick, 2004); the power clean (Burgener et al., 1988 and Graham, 2000) and hang or stop variations of the clean and power clean (Duba et al., 2007; Duba et al., 2007; Ebel & Rizzor, 2002; Graham, 2002 and Chiu & Schilling, 2004). Existing clean models use 12 progressive steps to teach the clean, where as clean variation models use between 3-6 stages in teaching the power clean or transition from hang clean to power clean. The proposed 6 stage model to teach the clean has been successful in teaching the exercise to athletes new to strength and conditioning as well as refining technique in athletes with 2 years plus experience in strength and conditioning lifting programmes.

Cleans may not be fully utilised within strength and conditioning programmes due to the athlete's lack of mobility in the squat clean position. However, the squat clean is ideal for developing mobility and stability in the ankle, knee, hip and wrist joints and thus is a suitable exercise to improve overall athletic ability in athletes, particularly youths who may undergo a reduction in muscular flexibility and joint mobility post peak height velocity.

The 6-stage model presented can be used separately, as independent exercises, or combined and used as technical progressions to teach the squat clean. This model is considered unique in comparison to others as it teaches the squat clean in only 6 stages.

## The Model

The 6-stage model that is presented (see Table 1) adopts a top down approach as previously utilised in other technical models (Waller et al., 2009).

## Key Technical Points

Providing an athlete can maintain the correct posture and has no biomechanical issues at each phase of the model, there is no reason why each stage needs to be mastered before progressing to the next. However key, technical points should be mastered (see table 2). This allows an integrated approach to learning. Any postural or biomechanical issues that are highlighted during individual stages can be corrected while the focus continues to be on learning the technique of the remaining stages. Once technical proficiency has been mastered in the snatch, the model can be used as a warm up for any clean derivative.

Stage of Model	Key technical points to master before moving to next stage of model
Stage 1: Front squat	Can squat to hips lower than knees with heels in contact and bar within base of support.
Stage 2: Hang power clean	Can maintain a neutral pelvis position and flat back with the bar just above knee height
Stage 3: Eccentric partial clean deadlift	Can maintain start position with a flat back and neutral pelvis, with hips rising at the same time as shoulders
Stage 4: Eccentric power clean	Can pull the bar to shoulders in one continuous movement maintaining back position, receiving the bar with heels in contact.
Stage 5: Eccentric power clean into front squat	Can pull the bar to shoulders and then squat, under control, to hips lower than knees with heels in contact.
Stage 6: (Squat) Clean	Can pull the bar and drop simultaneously into a full squat, receiving the bar on the shoulders.

Table 2: Key technical points to master before progressing to the next stage of the clean model

## Additional Technical Exercises

Once the technical model has been taught over a number of sessions and the snatch has been mastered to a reasonable degree of technical proficiency, other exercises can be used to help correct further technical flaws that will likely be evident (see Table 3).

Exercise	Technical description	When to use the exercise	Benefits of inclusion
Waist clean	Starting from the waist and rapidly shrugging the bar while simultaneously dropping under the bar into a full squat clean.	<ul style="list-style-type: none"> <li>Not dropping quickly into a full squat clean.</li> <li>Poor shoulder shrug and maximal upward extension.</li> </ul>	<ul style="list-style-type: none"> <li>Rapid shoulder shrug into maximum upward extension.</li> <li>Speed of dropping under the bar.</li> </ul>
Clean pulls	The bar is lifted in one movement from the floor to maximum upward extension.	<ul style="list-style-type: none"> <li>Not finishing the 2<sup>nd</sup> pull.</li> <li>Not coordinating hip drive and shoulder shrug.</li> <li>Acceleration from 1<sup>st</sup> to 2<sup>nd</sup> pull not quick enough.</li> </ul>	<ul style="list-style-type: none"> <li>Explosion from 1<sup>st</sup> pull into 2<sup>nd</sup> pull.</li> <li>Coordination of hip drive and maximum upward extension.</li> <li>Develops strong position from floor.</li> </ul>
Romanian deadlift (RDL)	The bar is lifted from the floor to the power position.  With soft knees (slight bend) the athlete maintains a flat back while lowering the bar until the back is parallel to the floor, the returns to the starting position.	<ul style="list-style-type: none"> <li>Not able to hold hang position.</li> <li>Poor lower back and hamstring strength.</li> </ul>	<ul style="list-style-type: none"> <li>Develops strength in the hang position.</li> </ul>
Deadlift	The bar is pulled in one continuous movement from the floor to upright standing with the arms straight.	<ul style="list-style-type: none"> <li>Poor hip drive after 1<sup>st</sup> pull.</li> <li>Weak position through 1<sup>st</sup> pull into 2<sup>nd</sup> pull.</li> <li>When the bar drifts out from shins (pulls athlete forward) during the 1<sup>st</sup> pull.</li> </ul>	<ul style="list-style-type: none"> <li>Develops hip drive after the 1<sup>st</sup> pull.</li> <li>Develops strength to hold position from 1<sup>st</sup> pull to 2<sup>nd</sup> pull.</li> <li>Teaches keeping the bar close during the 1<sup>st</sup> pull under load.</li> </ul>

## Conclusion

The purpose of this article is to share a 6-stage model for teaching the (squat) clean. The model presented provides coaches with a simplified sequence for teaching the (squat) clean. This model has been used successfully with 11-18 year old athletes with diverse training backgrounds and lifting history. The model should be progressed relatively quickly and time does not need to be spent perfecting each individual stage, providing the key technical points of each stage are mastered. Strength and conditioning professionals can successfully coach the (squat) clean from this model to enhance an athlete's ability to develop explosive strength as well as using the different derivatives to progressively and functionally challenge an athlete's motor ability as part of a warm up routine.

## References

- Burgener, M., Bielik, E. and Huegler, R. (1988). The power clean. *NSCA Journal*, 10(6): 50-55.
- Chiu, L. and Schilling, (2004). The stop clean and stop snatch: alternatives to the hang. *Strength and Conditioning Journal*, 26(3): 10-12.
- Duba, J., Kraemar, W. and Martin, G. (2007). A 6-step progression model for teaching the hang power clean. *Strength and Conditioning Journal*, 29(5): 26-35.
- Duba, J., Kraemar, W. and Martin, G. (2009). Progressing from the hang power clean to the power clean: a 4-step model. *Strength and Conditioning Journal*, 31(3): 58-66.
- Ebel, K and Rizzor, R. (2002). Teaching the hang clean and overcoming common obstacles. *Strength and Conditioning Journal*, 24(3): 32-36.
- Graham, J. (2000). Power clean. *Strength and Conditioning Journal*, 22(6): 63-65.
- Graham, J. (2002). Hang clean. *Strength and Conditioning Journal*, 24(2): 27-29.
- Hedrick, A. (2004). Teaching the clean. *Strength and Conditioning Journal*, 26(4): 70-72.
- Waller, M., Piper, T. and Miller, J. (2009). Coaching of the snatch/clean pulls with the high pull variation. *Strength and Conditioning Journal*, 31(3): 47-54.







<p><b>Stage 1: Front squat</b> With the elbows parallel to the floor the bar is squatted until the hips are below the line of the knees and returned to the starting position.</p> 	<p><b>Stage 2: Eccentric hang power clean</b> The bar is pulled from the floor to mid thigh and then controlled eccentrically into the hang position (see below). The bar is pulled in one continuous movement and received on the shoulders in a ¼ squat.</p> 
<p><b>Stage 3: Eccentric partial clean deadlift</b> The bar is pulled from the floor to mid thigh. The bar is then returned to the floor under control and pulled to the knee then returned to the floor under control and repeated.</p> 	<p><b>Stage 4: Eccentric power clean</b> The bar is pulled from the floor to mid thigh. The bar is then returned (under control) to briefly touch the floor and pulled in one continuous movement from the floor and received on the shoulders in a ¼ squat.</p> 
<p><b>Stage 5: Eccentric power clean into front squat</b> Combine the power clean and front squat (as above).</p> 	<p><b>Stage 6: (Squat) Clean</b> The bar is pulled in one continuous movement from the floor and received on the shoulders in a full squat.</p> 

Table 1: 6-stage model for teaching the (squat) clean