

# TRUE FITNESS COMPOSITE FULL BODY PRESS: Superior Workloads Superior Strength

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A Case Study Review of The True Composite Full Body Press as  
Superior in Producing Greater Workloads Compared to a  
Traditional Full Body Press

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## Background

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Cross Fit and fitness facilities focused on functional training have changed the landscape of weight lifting. While Olympic Weightlifting was once prisoner to collegiate and professional workout environments, the Snatch, the Clean and the Jerk have become central and essential to the conversation on reasonable weight lifting goals (Sprey, Ferreira, Lima, Duarte, Jr, Jorge and Santili (2016))

The benefits of this type of weight lifting are numerous and should not be ignored. Behm, Young, Whitten, Reid, Quigley, Low, Li, Lima, Hodgson, Chaouachi and Prieske (2017) found that Olympic Weightlifting has no equal for developing speed, flexibility and coordinated, total-body strength and muscle. The speed of movement requires fast twitch muscle fiber recruitment. These type of muscle fibers, which fire anaerobically, are also associated higher sprinting speeds. For the Olympic lifter, these adaptations result in some of the highest vertical leaps of all athletes on record to date. For the non-athlete, these adaptations are associated with a greater maintenance of muscle (that is normally lost) as we age, better physical appearance, even reductions in joint pain (Todde, Melis, Mura, Pau, Fois, Magnani, Ibba, Crisafull and Tocco (2016)).



While one can perhaps instinctively walk into a gym and perform a deadlift (one of the core movements on the road to developing Olympic Weight Lifting chops), it takes a long time to master the intricate technical aspects of Olympic Weight Lifting; All of the lifts demand coordination, flexibility and complete concentration. The technical aspects of the sport go a lot further in developing mental and motor skills than regular free-weight lifting (Maté-Muñoz, Lougedo, Barba, García-Fernández, Garnacho-Castaño and Domínguez (2017)).



The technical, mental and motor skill development aspects of the sport coupled with a variety of compressive and secondary torque challenges can limit absolute workloads, or the force produced by the user, at relative intensities using traditional Olympic Weights in Olympic Lifts. These restraints limit the effectiveness of these lifts for the lifter (DeBeliso, Sevens, and Adams (2016)).

The True Fitness Composite Full Body Press places the user in a more predictable movement pattern and repositions the body in relation to gravity. By changing the dynamic of the joint mechanics and placing the user in a more predictable, fixed movement pattern, technique is easier to acquire. Mental and motor skill development are also enhanced. Based on these assumptions, this study seeks to answer if users are able to produce higher workloads while using the True Fitness Full Body Composite Press versus workloads while doing a traditional Full Body Press. Additionally this study seeks to answer if users are able recruit more fast twitch muscle fiber as evidenced in a greater overall contribution from the anaerobic system (CHO contribution).

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## Study Design

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It was important in this study to ensure a wide variety of experience levels and therefore comfortability with Olympic Weight Lifting. Participants expressing interest in Cross Fit type workouts as well as semi-professional athletes, were asked to participate in the study. A questionnaire was completed by each of the studies 30 participants in order to assess the level of experience and comfortability with Olympic Weight Lifting. Users with more than one semester or 6-months of collegiate or team Olympic Lifting experience were initially placed into the Expert User group. Users with less than a semester or 6-months of collegiate or team Olympic Lifting experience were initially placed into the Novice User group. A USAW certified Olympic Lifting Coach further evaluated all potential participants for form while performing a Full Body Press.

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A USAW certified Olympic Lifting Coach evaluated participants for form while performing a Full Body Press. The final study included 30 participants in two equal groups. 15 participants in the Expert User group and 15 in the Novice User group.

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Two on-site certified USAW coaches with college-level research experience were recruited to implement the study. Both coaches participated in a three-hour accredited on-boarding course. In the course, details of the study design were reviewed, including the study standards for executing a strength test, the exercise protocol as well as the difference in running a study versus coaching an exercise session. The importance of maintaining absolute confidentiality until the end of the study was reviewed, including the data analysis phase and presentation of this white paper.

The final study enrolled 30 participants in two equal groups; 15 participants in the Expert User group and 15 in the Novice User group. The initial benchmark of the study required a strength assessment for all 30 Participants during a Full Body Press. Participants were instructed in a highly supervised (2:1, Coach: Participant environment) to perform one set of a Full Body Press to maximal volitional fatigue within 8-10 repetitions. Participants were instructed to perform as many repetitions as possible, to fatigue, during one set. Any participant not achieving maximal volitional fatigue within 8-10 repetitions was asked to return on a different day to re-take the strength assessment. Participants VO<sub>2</sub> was measured and confirmed to be at rest prior to the test to control for confounding factors.



After setting the strength benchmark, the study protocol began. In a highly supervised (2:1, Coach: Participant environment) all participants performed three sets of 8-10 repetitions of a Full Body Press during which metabolic rate and contribution from Carbohydrate (CHO) and Fat (FAT) during the activity, were measured using a portable, medical-grade PNOE device (seen left). A Registered Clinical Exercise Physiologist was on site during all tests to ensure consistency of measurement with the metabolic device. Participants VO<sub>2</sub> was measured and confirmed to be at rest prior to the test to control for confounding factors.

On a different day, all participants returned and in a highly supervised (2:1, Coach: Participant environment) performed three sets of 8-10 repetitions using the True Fitness Composite Full Body Press during which metabolic rate and contribution from Carbohydrate (CHO) and Fat (FAT) during the activity, were measured using the same portable medical-grade PNOE device. USAW coaches instructed on form to ensure the same degree of comfortability as in the traditional Full Body Press. A Registered Clinical Exercise Physiologist was on site during all tests to ensure consistency of measurement with the metabolic device. Participants VO<sub>2</sub> was measured and confirmed to be at rest prior to the test to control for confounding factors.

The final part of the study required each participant to complete two workout protocols on different days. The workout protocols echoed Workout of the Day (WOD) type of Cross Fit experiences and were exactly the same, except that one incorporated a traditional full body press and the other the True Fitness Composite Full Body Press. Metabolic rate and contribution from Carbohydrate (CHO) and Fat (FAT) was measured for the duration of the workout using the same portable medical-grade PNOE device. USAW coaches instructed on form to ensure the same degree of oversight. A Registered Clinical Exercise Physiologist was on site during all tests to ensure consistency of measurement with the metabolic device. Participants VO<sub>2</sub> was measured and confirmed to be at rest prior to the test to control for confounding factors.

### The Workout Protocol

4 rounds for time, alternating arms each round

Full Body Press or the True Fitness Composite Full Body Press	8-10 RM
single-arm rows	8
single-arm push presses	6
single-arm Turkish get-ups	4

## Research Questions

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Data was collected and analyzed for statistical significance to try to answer the following questions:

- (1) Are there acute differences in submaximal workload in Novice and Expert User groups as evidenced through VO2 analysis between a single traditional full body press and composite full body press?
- (2) Are there acute differences in contribution from fast twitch muscle fibers in Novice and Expert User groups as evidenced through greater percent contribution from carbohydrate (CHO) between a single traditional full body press and composite full body press?
- (3) Is there improved caloric expenditure in a workout protocol when replacing a traditional full body press with a composite full body press as evidenced in acute VO2 analysis?
- (4) Are there acute differences in contribution from fast twitch muscle fibers in Novice and Expert User groups as evidenced through greater percent contribution from carbohydrate (CHO) between a workout protocol using a traditional full body press and workout protocol using composite full body press?

## Findings

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### DIFFERENCE BETWEEN A TRADITIONAL FULL BODY PRESS AND THE TRUE FITNESS COMPOSITE PRESS IN A SINGLE SET

Testing was administered during the 8-10RM of the single set of the traditional Full Body Press and during the 8-10RM of the single set of the True Fitness Composite Full Body Press in order to determine if there were statistical differences within user performance in the overall caloric output (VO<sub>2</sub>) and/or metabolic profile (contribution of Carbohydrate (CHO) and Fat (FAT)). Statistical significance was set at  $p > 0.05$  and was considered for both Expert and Novice Users.

### OVERALL CALORIC OUTPUT (VO<sub>2</sub>) NOVICE USER

Final p-value for the Novice User group between the initial situation of the single set using a Traditional Full Body Press versus the final situation of the single set using the True Fitness Composite Press was less than 0.05 (5%) (value = 0.0002), so the overall caloric output for the Novice User group was significantly higher when using the True Fitness Composite Press during a single set.

### OVERALL CALORIC OUTPUT (VO<sub>2</sub>) EXPERT USER

Final p-value for the Expert User group between the initial situation of the single set using a Traditional Full Body Press versus the final situation of the single set using the True Fitness Composite Press was less than 0.05 (5%) (value = 0.0035), so the overall caloric output for the Expert User group was significantly higher when using the True Fitness Composite Press during a single set.

### CONTRIBUTION FROM CARBOHYDRATE (CHO) NOVICE USER

Final p-value for the Novice User group between the initial situation of the single set using a Traditional Full Body Press versus the final situation of the single set using the True Fitness Composite Press was less than 0.05 (5%) (value = 0.032), so the contribution from Carbohydrate (CHO) for the Novice User



group was significantly higher when using the True Fitness Composite Press during a single set.

#### CONTRIBUTION FROM CARBOHYDRATE (CHO) EXPERT USER

Final p-value for the Expert User group between the initial situation of the single set using a Traditional Full Body Press versus the final situation of the single set using the True Fitness Composite Press was less than 0.05 (5%) (value = 0.043), so the contribution from Carbohydrate (CHO) for the Expert User group was significantly higher when using the True Fitness Composite Press during a single set.

#### DIFFERENCE IN A WORKOUT PROTOCOL THAT INCLUDES A TRADITIONAL FULL BODY PRESS VERSUS THE TRUE FITNESS COMPOSITE PRESS

Testing was administered during the exercise protocol using the traditional Full Body Press and during the exercise protocol using the True Fitness Composite Full Body Press in order to determine if there were statistical differences ( $p > 0.05$ ) within user performance in the overall caloric output ( $VO_2$ ) and/or metabolic profile (contribution of Carbohydrate (CHO) and Fat (FAT)). Statistical significance was set at  $p > 0.05$  and was considered for both Expert and Novice Users.

#### OVERALL CALORIC OUTPUT ( $VO_2$ ) NOVICE USER

Final p-value for the Novice User group between the initial situation of the workout protocol using a Traditional Full Body Press versus the final situation of the workout protocol using the True Fitness Composite Press was less than 0.05 (5%) (value = 0.003), so the overall caloric output for the Novice User group was significantly higher when using the True Fitness Composite Press during a workout.

#### OVERALL CALORIC OUTPUT (VO<sub>2</sub>) EXPERT USER

Final p-value for the Expert User group between the initial situation of the workout protocol using a Traditional Full Body Press versus the final situation of the workout protocol using the True Fitness Composite Press was less than 0.05 (5%) (value = 0.032), so the overall caloric output for the Expert User group was significantly higher when using the True Fitness Composite Press during a workout.

#### CONTRIBUTION FROM CARBOHYDRATE (CHO) NOVICE USER

Final p-value for the Novice User group between the initial situation of the workout protocol using a Traditional Full Body Press versus the final situation of the workout protocol using the True Fitness Composite Press was less than 0.05 (5%) (value = 0.023), so the contribution from Carbohydrate (CHO) for the Novice User group was significantly higher when using the True Fitness Composite Press during a workout.

#### CONTRIBUTION FROM CARBOHYDRATE (CHO) EXPERT USER

Final p-value for the Expert User group between the initial situation of the workout protocol using a Traditional Full Body Press versus the final situation of the workout protocol using the True Fitness Composite Press was less than 0.05 (5%) (value = 0.03), so the contribution from Carbohydrate (CHO) for the Expert User group was significantly higher when using the True Fitness Composite Press during a workout.

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SUMMARY OF FINDINGS

Single-Set VO2			Work-Out Protocol VO2		
Novice	p=0.0002	Significant	Novice	p=0.003	Significant
VO2			VO2		
Expert	p=0.0035	Significant	Expert	p=0.032	Significant
VO2			VO2		

Single-Set CHO			Work-Out Protocol CHO		
Novice	p=0.032	Significant	Novice	p=0.023	Significant
CHO			CHO		
Expert	p=0.043	Significant	Expert	p=0.03	Significant
CHO			CHO		

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## Discussion and Conclusion

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These findings suggest that the True Fitness Full Body Composite Press is superior at eliciting greater workloads in both novice and expert users in a single set versus a traditional full body press. Additionally, when incorporating the True Fitness Full Body Composite Press into a one hour workout protocol, both novice and expert users experienced greater caloric output as compared to incorporating a traditional full body press.

The shift to carbohydrate (CHO) during both the single set as well as the workout routine may indicate a greater utilization of fast twitch fibers. This greater utilization of fast twitch fibers would have implications on the maintenance and improvement of strength as well as improvements in power and speed.

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