

APPENDIX 1: Example of an off season strength program used to train rugby union players aged 15-16 developed by Roger Mandic**Phase 1: Hypertrophy (5 weeks)**

Frequency: 2 times/week
Intensity: 10-15 reps

Volume: 2-3 sets
Tempo: slow-medium

Rest: 1.5 mins

Wk 1**Monday, Wednesday and Friday**

Exercise	Sets	Reps
Squats	2-3	10-15
D/Bell Row	2-3	10-15
B/Bell Bench Press	2-3	10-15
Deadlift	2	10-15
Front Bridge	1	45 sec
Side Bridge	1	30 sec for L & R side

Wk 2**Monday, Wednesday and Friday**

Exercise	Sets	Reps
Walking Lunges	2-3	10-15
Seated Row	2-3	10-15
D/Bell Bench Press	2-3	10-15
Stiff Leg Deadlift	2	10-15
Front Bridge	1	45 sec
Side Bridge	1	30 sec for L & R side

Wk 3**Monday, Wednesday and Friday**

Exercise	Sets	Reps
Squats	2-3	10-15
Lat Pulldown	2-3	10-15
Push Ups	2-3	10-15
Deadlift	2	10-15
Front Bridge	1	1 min
Side Bridge	1	35 sec for L & R side

Wk 4**Monday, Wednesday and Friday**

Exercise	Sets	Reps
Side Lunge	2-3	10-15
Upright Row	2-3	10-15
Standing D/Bell Press	2-3	10-15
Stiff Leg Deadlift	2	10-15
Front Bridge	1	1 min
Side Bridge	1	35 sec for L & R side

Wk 5**Monday, Wednesday and Friday**

Exercise	Sets	Reps
Squats	2-3	10-15
Bent over Row	2-3	10-15
B/Bell Bench Press	2-3	10-15
Deadlift	2	10-15
Front Bridge	1	1 min 15
Side Bridge	1	40 sec for L & R side



Phase 2: Strength (2 weeks)

Frequency: 2 times/week
Intensity: 6-10 reps

Volume: 2-3 sets
Tempo: slow

Rest: 2.5 mins

Wk 6**Monday and Friday**

Exercise	Sets	Reps
1 Legged Squats	2-3	10
Dive bomber Push Ups	2-3	6-10
Chin Ups or Pull Ups	2-3	6-10
Tricep Dips	1-2	6-10
Front Bridge	1	1 min 15 sec
Side Bridge	2	40 sec for L & R side

Wk 7 Monday and Friday

Exercise	Sets	Reps
1 Legged Squats	2-3	10
Dive bomber Push Ups	2-3	6-10
Chin Ups or Pull Ups	2-3	6-10
Tricep Dips	1-2	6-10
Front Bridge	1	1 min 30 sec
Side Bridge	2	45 sec for L & R side

Phase 3: Power (2 weeks)

Frequency: 2 times/week
Intensity: 4-8 reps

Volume: 1-2 sets
Tempo: explosive/fast

Rest: 3 mins

Wk 8 - Lower and Upper Body Plyometrics**Monday and Friday**

Exercise	Sets	Reps
Overhead Medicine Ball Backward Throw	2	8
Multiple Box-to-Box Jumps		60
Front Toss	2	6
Push Up Claps	2	8-10
Medicine Ball Push-Up and Pass	1	8-10
Power Drop	1	8-10
Front Bridge	1	1 min 30
Side Bridge	2	45 sec for L & R side

Wk 9 Repeat week 8

APPENDIX 2: Example of an off season strength program used to train rugby union players aged 17-18 developed by Roger Mandic**Phase 1: Hypertrophy (5 weeks)**

Frequency: 3 times/week
Intensity: 8-12 reps

Volume: 3-4 sets
Tempo: slow-medium

Rest: 1.5 mins

Wk 1**Monday, Wednesday and Friday**

Exercise	Sets	Reps
Back Squat	3	8-12
B/Bell Bent Over Row	3	8-12
B/Bell Bench Press	3	8-12
Deadlift	2	8-12
Front Bridge	1	1 min
Side Bridge	1	30 sec for L & R side

WK 2**Monday, Wednesday and Friday**

Exercise	Sets	Reps
Front Lunge	3	8-12
Seated Row	3	8-12
D/Bell Bench Press	3	8-12
Stiff Leg Deadlift	2	8-12
Front Bridge	1	1 min
Side Bridge	1	30 sec for L & R side

Wk 3**Monday, Wednesday and Friday**

Exercise	Sets	Reps
Front Squat	3	8-12
Lat Pulldown	3	8-12
Incline Bench Press	3	8-12
Deadlift	2	8-12
Front Bridge	1	1 min 15 sec
Side Bridge	1	40 sec for L & R side

Wk 4**Monday, Wednesday and Friday**

Exercise	Sets	Reps
Side Lunge	3	8-12
Upright Row	3	8-12
Military Press	3	8-12
Stiff Leg Deadlift	2	8-12
Front Bridge	1	1 min 15 sec
Side Bridge	1	40 sec for L & R side

Wk 5**Monday, Wednesday and Friday**

Exercise	Sets	Reps
Step Ups	3	8-12
Cable Pulley Row	3	8-12
B/Bell Bench Press	3	8-12
Deadlift	2	8-12
Front Bridge	1	1 min 30 sec
Side Bridge	1	50 sec for L & R side



Phase 2: Strength (2 weeks)

Frequency: 2 times/week
Intensity: 6-8 reps

Volume: 2-3 sets
Tempo: slow

Rest: 2.5 mins

Wk 6**Monday and Friday**

Exercise	Sets	Reps
Squat or 1 Leg Squat	2-3	6-8
Chin Ups or Pull Ups	2-3	6-8
B/Bell Bench Press	2-3	6-8
Dips	1-2	6-8
Deadlift	2	8
Front Bridge	1	1 min 30 sec
Side Bridge	2	50 sec for L & R side

Wk 7 Monday and Friday

Exercise	Sets	Reps
Squat or 1 Leg Squat	2-3	6-8
Chin Ups or Pull Ups	2-3	6-8
B/Bell Bench Press	2-3	6-8
Dips	1-2	6-8
Deadlift	2	8
Front Bridge	1	1 min 45 sec
Side Bridge	2	1 min for L & R side

Phase 3: Power (2 weeks)

Frequency: 2 times/week
Intensity: 6-8 reps

Volume: 1-2 sets
Tempo: explosive/fast

Rest: 3 mins

Wk 8 - Olympic Lifts**Monday and Friday**

Exercise	Sets	Reps
Hang Jump Shrugs	1-2	6
Jump Shrugs	1-2	6
Hang Pull	1-2	6
High Pull	1-2	6
Hang Clean	1-2	6
Clean	1-2	6
Push Press	1-2	6
Front Bridge	1	1 min 45 sec
Side Bridge	2	1 min for L & R side

Wk 9 - Either repeat Wk 1 or perform Lower and Upper Body Plyometrics**Monday and Friday**

Exercise	Sets	Reps
Multiple Box-to-Box Jumps		60
Pyramiding Box Jumps		30
Front Toss	2	6
Push Up Claps	2	8-10
Medicine Ball Push-Up and Pass	2	8-10
Power Drop	1	8-10
Front Bridge	1	2 min
Side Bridge	2	1 min for L & R side



APPENDIX 3: Example of Junior Representative Rugby League program developed by Sean Burns

1 WEEK BLOCK - U/16 RUGBY LEAGUE OFF SEASON			
WEEK 1 - SESSION 1 - UNILATERAL/HIP/BACK DOMINANT			
EXERCISE	SET	REP	MOVEMENT
SINGLE LEG BOSU JUMP	2	6	STABILITY LANDING
SCAPULA HOLD PUSH UP POS	2	6	HUMERAL STABILITY
LYING HIP EXTENSION	3	8	SINGLE LEG
ONE ARM ROW	4	10	FULL RANGE
MED BALL LUNGE	4	10	STATIC LUNGE
DUMBBELL BENCH PRESS	4	10	FULL RANGE
SESSION 2 - BILATERAL/CHEST/QUAD DOMINANT			
BOSU SCAPULA HOLDS	2	6	STABILITY HOLD
BAND CUBAN PRESS	2	6	ROTATOR CUFF
HORIZONTAL PULL UP	4	8	
REVERSE HYPEREXTENSION	4	10	GLUT ACTIVATION
MED BALL BOX SQUAT	3	10	
STANDING SHOULDER PRESS	3	10	SAGITTAL PLANE
SESSION 3 - UNILATERAL/HIP/BACK DOMINANT			
BAND SCAP RETRACT/DEPRESS	2	6	GOOD QUALITY
BOSU STABILITY JUMPS	2	6	STABILITY LANDING
ONE ARM SEATED ROW	3	10	FULL RANGE
LEG CURL	3	8	CONTROL ECCENTRIC
FRONT SQUAT	3	10	NEUTRAL BACK
PUSH UP			CONTROLLED SPEED

The above program is an actual program developed by ASCA member Sean Burns for a Junior Representative Rugby League Player. The player had a limited training age of 1yr prior to this off season. He started the year weighing 70 kg and by seasons end he weighed 78 kg. Although at this age growth is expected. He also lost a considerable amount of body fat and gained lean body mass. My objective by seasons end was to have this player performing Squat Variations and Deadlift variations with consistently good technique.

By seasons end he could perform a front squat with a clean grip which set him up to be taught more complex lifts as he matured. Although he achieved the ability to complete squat, deadlift and both their variants he still performed these lifts with minimal loads. This took several months to achieve and at times progression was slow. In my experience close supervision is the key at this age the players are very inconsistent with their technique. It's best to remain positive and don't try to solve their problems in their first session. If you over teach early they may suffer an information overload which can make any progress seem to hard for athletes this age.

The biggest room for improvement in performance can be put down to two things, diet and hydration. Diet is the biggest problem in terms in improving performance. Nine times out of ten athletes this age are dehydrated at the start of a training session, Education needs to be in place to explain why eating poor foods and no hydrating will affect their ability to play better.



With athletes this age all the resistance, conditioning and skills training won't help the player who is having cookies and a soft drink for dinner. An information night with parents and players present to take advice from a qualified dietician is recommended. I have found that a food diary also works well with players. This age is the ideal time to ensure the young athletes understand gym conduct, always warm up, know when and how to spot their partner, how to cool down.

Why these exercises?

Med Ball Box Squat – Holding a med ball to the chest is an easy and safe way to get the young athletes to get used resisting weight from the front of their body as a lead into to developing their front squat. The use of a box is a great teaching tool to encourage the athlete to keep a neutral back and 'reach' back with their gluteals to find the box. This helps to teach them correct ankle, knee and hip alignment as opposed to dropping forward at the knees where the knees end up in front of the hips.

Lying Hip Extension – This exercise is a great for closed chain hamstring/gluteal development. To some degree it works the hamstring at the hip and knee and better prepares their hamstrings for heavier lifting and playing as opposed to a leg curl.

Horizontal Pull Up – This is a great exercise to gain a better understanding of where athletes this age stand in relation to midsection and lower back strength. If the player can't remain strong whilst completing a pull up because they buckle in the middle they need a lot of work so that they can remain strong from the feet all the way to their shoulder joint.

Standing Shoulder Press Sagittal Plane – This exercise performed in a split legged stance works the entire body, most of the athletes I have worked with have found that there feels to be less stress on the shoulder joint when a dumbbell is pressed in this plane.

Front Squat – A great progression to the clean variants down the track

Why this order?

Generally speaking the majority of male athletes this age are Chest over back dominant and Quad over Hip Dominant. They may also have a tendency to be stronger in one side of their body over the other. During the preseason I tried to iron out these problems before progressing to anything further. This was the split

SESSION 1 - UNILATERAL/HIP/BACK DOMINANT
SESSION 2 - BILATERAL/CHEST/QUAD DOMINANT
SESSION 3 - UNILATERAL/HIP/BACK DOMINANT

This unilateral. Hip and back dominance in training will begin to rectify any problems they may have had. In this athletes case we rectified this athlete's right sided superior strength over his left side in 4 weeks and Hamstring/Back improvement in 5 weeks.

Why these loads?

Athletes this age need to generally gain lean body mass. His loads were prescribed by the number of reps he could complete. If he needed to complete 4 x 10 bench he selected a weight where he could complete the 10th rep generally without to much help from his spotter. If he had to complete 4 x 8 on bench Press the next week he would know to increase his load by a small margin. I have found this to be the most efficient way to prescribe load to a large number of athletes at once.

Session Duration ?

To calculate the set loading, I worked backwards if we had those players in the gym for 35 mins I calculated how long each warm up, set/rest took then came up with a number of sets that I could realistically fit in that session. Athletes this age do not need as much stimulus to see results, their bodies are still growing so if in doubt of prescribing to much in the gym always program less to be safe.

