



QUEENSLAND RUGBY LEAGUE

PHYSICAL PERFORMANCE FRAMEWORK

VERSION 2 - 2023

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INTRODUCTION

Players begin to commence meaningful physical preparation for rugby league from the ages of 13 in both male and female programs. These programs may extend to school, junior club, junior representative and NRL development contracts. At any one-time players up to the age of 18 may be required to attend training sessions for all these programs.

Between the ages of 13 -18 players will all mature at a different pace and require different support in line with their stage of physical, psychological and socio emotional development. To support appropriate physical performance strategies, the QRL has developed a framework providing an evidence-based direction on what to train and how much to train based on competency level.

These recommendations are provided to allow all stakeholders (Coaches, Teachers, Parents, Players, Medical staff) an opportunity to discuss player training programs and importantly work together. The risks associated with over training can lead to the onset of injuries and burn out.

AGE GROUP CATEGORIES

The QRL Physical Development Framework aims to assist coaches, teachers, parents, players and medical staff in maintaining a training program appropriate for their age group and developmental level. The QRL has identified 3 distinct categories from 13 through to 18 years of age:

» DEVELOPING: 13 - 15 YEARS

» CLUB: 16 - 17 YEARS

» SEMI-PRO: 18+ YEARS

PHYSICAL TRAINING QUALITIES

To ensure players can optimise their individual potential it is important to outline the breakdown of physical training qualities and the recommended time allocated. For each age group category, session recommendations have been made for the following physical and skill qualities:

	STRENGTH	Injury prevention, hypertrophy, strength and power.
	SPEED	Technique, acceleration, change of direction/agility, maximum velocity.
	ENERGY SYSTEMS	Phosphagen, glycolytic and aerobic.
	MOBILITY / FLEXIBILITY	Various techniques.
	SKILLS	Rugby league contextual, decision making, kick, pass, catch and spatial awareness.
	CONTACT CONDITIONING	Technique, over and under ball tackles, leg tackles, carry into contact.
	GAMES	Full contact, structured and officiated as per the rules of rugby league.

WEEKLY RECOMMENDED SCHEDULES

To help achieve optimal exposure and proactively manage player training commitments the QRL has developed a weekly recommended training guide. The premise being all stakeholders work together using the guidelines to optimise the physical development of the player.

For each session type [across all age group categories], stakeholders can conduct an inventory of player weekly physical and skill commitments. After assessing the inventory make informed adjustments to the weekly schedule to ensure player health and wellbeing.

For example, a 15-year-old developing player may have the following weekly commitments during the junior representative season (March-April):

Day	School	Junior Reps	NRL Contract	Club
Monday	Gym Speed		Skills	N/A
Tuesday	Field session – conditioning/skills	Gym Field session – conditioning/skills	N/A	Field session – conditioning/skills
Wednesday	Game			
Thursday	Field session – conditioning/skills	Gym Field session – conditioning/skills		Field session – conditioning/skills
Friday	Cricket team Gym Basketball team			
Saturday		Game		
Sunday				

In this example this player may be doing 4 x gym, 6 x conditioning, 1 x speed. With the addition of other team-based sports this may add up to 20 sessions. For this reason, it is important that all stakeholders work together to ensure players are not overloaded. Ideally, at this time of year this player should focus on representative team commitments to ensure optimal training loads are achieved.

WEEKLY RECOMMENDED SCHEDULES CONTINUED

Working with stakeholders collaboratively the week could be reduced to 12 sessions (not including basketball and cricket), reducing chances of burn out and not effecting performance. The collaborative timetable may look like this:

Day	School	Junior Reps	NRL Contract	Club
Monday	Gym Speed		Skills	N/A
Tuesday		Field session – conditioning/skills	N/A	Field session – skills <i>*players not involved in Statewide Competitions</i>
Wednesday	Game			
Thursday	Cricket team Gym	Field session – conditioning/skills		Field session – skills <i>*players not involved in Statewide Competitions</i>
Friday	Basketball team			
Saturday		Game		
Sunday				

YEARLY PLANS

To ensure there is a strategic focus for the Physical Development Framework, periodised yearly plans for each age group category have been developed. These yearly plan guidelines primarily focus on the physical qualities of strength, speed, energy systems and flexibility/mobility. Recommendations are made for each training period of the yearly calendar to ensure appropriate exposure for each physical quality. The aim being to provide physically healthy players equipped to play rugby league. For each physical training quality there is a percentage-based recommendation outlining the requisite amount of time for each sub-quality to make up the session.

These yearly plans reflect the recommended physical development pathway across the rugby league season. It is the goal of the QRL to assist in ensuring each program works collaboratively with all stakeholders prioritising player development and to promote longevity in the game.

YEARLY PLANNER

MEN

	B4	TERM 1			B1	TERM 2			B2	TERM 3		B3	TERM 4	
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC		
Statewide Competitions Pre-Season														
Auswide Bank Mal Meninga Cup U18														
Cyril Connell Challenge U16														
NRL Schoolboy Cup														
QSSRL Camps & Selections														
Junior Club Pre-Season														
Junior Club														
NRL Contracted/Development														



SSC
School State Championships



SN 15-18
School Nationals 15-18

WOMEN

	B4	TERM 1			B1	TERM 2			B2	TERM 3		B3	TERM 4	
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC		
NRLW														
Statewide Competitions Pre-Season														
QRLW														
Harvey Norman U19														
School Selections														
School Competitions														
Junior Club Pre-Season														
Junior Club														
NRL Contracted/Development														



SSC
School State Championships



U19 N
U19's Nationals



WSOO
Women's State of Origin



WSOO U19s
Women's State of Origin U19s



DEVELOPING

13-15 YEAR OLDS

WEEKLY CONTENT EXPOSURES: 13 YEAR OLDS




























CLASSIFICATION	PRE-SEASON	IN-SEASON	TIMES
 Strength	 	 	
 Speed			
 Energy Systems	 		
 Mobility / Flexibility	 	 	
 Skills	 	 	
 Contact Conditioning			
 Games		 	
	 	 	

BENCHMARKING STANDARDS DEVELOPING - AT STANDARD

Backs Standards	Men	Women	Forwards Standards	Men	Women
Broad Jump Standards (m)	2.40 - 2.20	2.00 - 1.80	Broad Jump Standards (m)	2.30 - 2.10	1.90 - 1.70
Med Ball Chest Pass (m)	6.00 - 4.50	4.00 - 2.75	Med Ball Chest Pass (m)	6.50 - 5.00	4.50 - 3.25
1.2k TT (mins)	5.40 - 6.00	6.30 - 6.40	1.2k TT (mins)	<5.50 - 6.10	6.55 - 7.05

Refer to Appendices ([Page 32](#)) for Performance Testing Protocols.

WEEKLY CONTENT EXPOSURES: 14- 15 YEAR OLDS

CLASSIFICATION	PRE-SEASON	IN-SEASON	TIMES
 Strength	 	 	
 Speed			
 Energy Systems	 		
 Mobility / Flexibility	 	 	
 Skills	 	 	
 Contact Conditioning			
 Games		 	
	 	 	

BENCHMARKING STANDARDS DEVELOPING - AT STANDARD

Backs Standards	Men	Women	Forwards Standards	Men	Women
Broad Jump Standards (m)	2.40 - 2.20	2.00 - 1.80	Broad Jump Standards (m)	2.30 - 2.10	1.90 - 1.70
Med Ball Chest Pass (m)	6.00 - 4.50	4.00 - 2.75	Med Ball Chest Pass (m)	6.50 - 5.00	4.50 - 3.25
1.2k TT (mins)	5.40 - 6.00	6.30 - 6.40	1.2k TT (mins)	<5.50 - 6.10	6.55 - 7.05

Refer to Appendices ([Page 32](#)) for Performance Testing Protocols.

BENCHMARKING STANDARDS - DEVELOPING

Backs Standards - Men	Exceeding Standard	At Standard	Below Standard
Broad Jump Standards (m)	>2.40	2.40 - 2.20	<2.20
Med Ball Chest Pass (m)	>7.50	6.00 - 4.50	<6.00
20m Speed Standards (sec)	<3.35	3.35 - 3.45	<3.45
1.2k TT (mins)	<5.40	5.40 - 6.00	<6.00
Back Squat Standards (R/BW)	<1.25	1.25 - 1.00	<1.00
Bench Press Standards (R/BW)	<1.05	1.05 - 0.85	<0.85
Prone Chin Up Standards (R/BW)	<0.05	<0.05 - BW	<BW

Backs Standards - Women	Exceeding Standard	At Standard	Below Standard
Broad Jump Standards (m)	>2.00	2.00 - 1.80	<1.80
Med Ball Chest Pass (m)	>5.25	4.00 - 2.75	<4.00
20m Speed Standards (sec)	<3.90	3.90 - 4.00	>4.00
1.2k TT (mins)	<6.30	6.30 - 6.40	>6.40
Back Squat Standards (R/BW)	<1.05	1.05 - 0.95	<0.95
Bench Press Standards (R/BW)	<0.8	0.8 - 0.7	<0.7
Prone Chin Up Standards (R/BW)	<BW	BW - Red Band	Red Band+

Forwards Standards - Men	Exceeding Standard	At Standard	Below Standard
Broad Jump Standards (m)	>2.30	2.30 - 2.10	<2.10
Med Ball Chest Pass (m)	>7.50	6.50 - 5.00	<6.00
20m Speed Standards (sec)	<3.45	<3.45 - 3.55	>3.55
1.2k TT (mins)	<5.50	<5.50 - 6.10	>6.10
Back Squat Standards (R/BW)	>1.25	1.25 - 1.00	<1.00
Bench Press Standards (R/BW)	>1.05	1.05 - 0.85	<0.85
Prone Chin Up Standards (R/BW)	>0.05	<0.05 - BW	<BW

Forwards Standards - Women	Exceeding Standard	At Standard	Below Standard
Broad Jump Standards (m)	>2.10	1.90 - 1.70	<1.70
Med Ball Chest Pass (m)	>5.75	4.50 - 3.25	<4.50
20m Speed Standards (sec)	<4.00	4.00 - 4.10	>4.10
1.2k TT (mins)	<6.55	6.55 - 7.05	>7.05
Back Squat Standards (R/BW)	<1.05	1.05 - 0.95	<0.95
Bench Press Standards (R/BW)	<0.8	0.8 - 0.7	<0.7
Prone Chin Up Standards (R/BW)	<BW	BW - Red Band	Red Band+

Refer to Appendices ([Page 32](#)) for Performance Testing Protocols.

YEARLY PLAN - DEVELOPING

Use the percentages of each physical component to allocate content in each session.

Strength	Energy Systems	Speed/Agility	Other
1. Tech/ Injury Prev/ Hypertrophy	1. Oxidative - Volume running at 60-80%	1. Technique development	Unload Wk
2. Strength	2. Glycolitic - Lactate tolerance - 80-90%	2. Acceleration/COD	
3. Power	2. Glycolitic - Lactate tolerance - 80-90%	3. Max Velocity	

GENERAL PRE-SEASON

NOVEMBER	Phase 1A	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes	
	Test	ISC Testing						Technique in all areas. Accumulation of volume focus. ISC testing wk 1 establishing baselines. Testing include Height, Weight, MB Chest Throw, Broad Jump and 1.2kTT.
	Strength	1.60%, 2. 30%, 3.10%	2	2	2	2		
	Energy Systems	1.50%, 2. 35%, 3.15%	1	2	2	1		
	Speed/Agility	1.60%, 2. 20%, 3.20%	1	1	1	1		
	Flex/Mobility	Static/Band	2	2	2	1		
Number of Sessions		6	7	7	5			
DECEMBER	Phase 1B	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes	
	Test	MS = Movement Screen/foundational						Build Systems - particularly strength and energy systems base. Players should be familiar enough with programs to be able to continue working independently over the Holiday period.
	Strength	1.50%, 2. 40%, 3.10%	2	2	2	2		
	Energy Systems	1.40%, 2. 40%, 3.20%	1	2	2	1		
	Speed/Agility	1.50%, 2. 25%, 3.25%	1	1	1	1		
	Flex/Mobility	Static/Band - Intro Trig	2	2	2	2		
Number of Sessions		6	7	7	6			
JANUARY	Phase 1C	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes	
	Test	ISC Testing						Major training block - Strength and Glycolitic system focus. Accumulation of volume focus. Re-Test ISC .
	Strength	1.40%, 2. 50%, 3.10%	2	2	2	2		
	Energy Systems	1.35%, 2. 45%, 3.20%	1	2	2	1		
	Speed/Agility	1.40%, 2. 30%, 3.30%	1	1	1	1		
	Flex/Mobility	Static/Band/Trig	2	2	2	2		
Number of Sessions		6	7	7	6			

YEARLY PLAN - DEVELOPING

IN-SEASON REP PROGRAM

	Phase 2A	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes	
FEBRUARY	Test	ISC Testing						Trial Games.
	Strength	1.35%, 2. 50%, 3.15%	2	2	2	2		
	Energy Systems	1.30%, 2. 45%, 3.25%	1	1	1	0		
	Speed/Agility	1.30%, 2. 35%, 3.35%	1	1	1	1		
	Flex/Mobility	Static/Band/Trig	2	2	2	3		
	Number of Sessions		6	6	6	6		
MARCH	Test	ISC Testing						Re-Test ISC wk 1. CC/MM Games - commence wk 1. HN commence wk 2.
	Strength	1.35%, 2. 45%, 3.20%	2	2	2	2		
	Energy Systems	1.25%, 2. 40%, 3.35%	1	1	1	0		
	Speed/Agility	1.30%, 2. 35%, 3.35%	1	1	1	1		
	Flex/Mobility	Static/Band/Trig	2	2	2	3		
	Number of Sessions		6	6	6	6		
APRIL	Test							Final wk of CC wk 2. Final wk of HN wk 3.
	Strength	1.35%, 2. 45%, 3.20%	2	2	2	2		
	Energy Systems	1.20%, 2. 35%, 3.45%	1	1	1	0		
	Speed/Agility	1.30%, 2. 35%, 3.35%	1	1	1	1		
	Flex/Mobility	Static/Band/Trig	2	2	2	3		
	Number of Sessions		6	6	6	6		

YEARLY PLAN - DEVELOPING

IN-SEASON SCHOOL PROGRAM

	Phase 3A	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes	
MAY	Test	ISC Testing						Re-Test ISC wk 1. GF MM wk 1. Schools RL wk 2 & 4 (15-18yrs).
	Strength	1.30%, 2. 40%, 3.30%	2	2	2	2		
	Energy Systems	1.20%, 2. 35%, 3.45%	1	1	1	0		
	Speed/Agility	1.20%, 2. 40%, 3.40%	1	1	1	1		
	Flex/Mobility	Static/Band/Trig	2	2	2	3		
	Number of Sessions		6	6	6	6		
JUNE	Test	ISC Testing						Schools Langer/Payne Rounds 1-2 in June. Re-Test ISC wk 4.
	Strength	1.30%, 2. 40%, 3.30%	2	2	2	2		
	Energy Systems	1.20%, 2. 35%, 3.45%	1	1	1	0		
	Speed/Agility	1.20%, 2. 40%, 3.40%	1	1	1	1		
	Flex/Mobility	Static/Band/Trig	2	2	2	3		
	Number of Sessions		6	6	6	6		
JULY	Test	ISC Testing						Australian Schools Carnival wk 1. Schools Langer/Payne Rounds 3-4 in July - wk-2-4
	Strength	1.30%, 2. 40%, 3.30%	2	2	2	2		
	Energy Systems	1.20%, 2. 35%, 3.45%	1	1	1	0		
	Speed/Agility	1.20%, 2. 40%, 3.40%	1	1	1	1		
	Flex/Mobility	Static/Band/Trig	2	2	2	3		
	Number of Sessions		6	6	6	6		

YEARLY PLAN - DEVELOPING

IN-SEASON CLUB COMPETITION









































	Phase 4A	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes	
AUGUST	Test		ISC Testing					Schools Langer/Payne Rounds 3-4 in August - wk-1-2. NRL Schools knock out - wk 3-4. ISC Testing Wk 4.
	Strength	1.20%, 2. 50%, 3.30%	2	2	2	2		
	Energy Systems	1.10%, 2. 30%, 3.60%	1	1	1	0		
	Speed/Agility	1.20%, 2. 40%, 3.40%	1	1	1	1		
	Flex/Mobility	Static/Band/Trig	2	2	2	3		
		Number of Sessions		6	6	6	6	
SEPTEMBER	Test		ISC Testing					Re-Test ISC. NRL Schools knock out - wk 1-2.
	Strength	1.25%, 2. 45%, 3.30%	2	2	2	2		
	Energy Systems	1.25%, 2. 40%, 3.35%	1	1	1	0		
	Speed/Agility	1.20%, 2. 40%, 3.40%	1	1	1	1		
	Flex/Mobility	Static/Band/Trig	2	2	2	3		
		Number of Sessions		6	6	6	6	
OCTOBER	Phase 4C	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes	
	N/A						Leave Period	



CLUB

16-17 YEAR OLDS

WEEKLY CONTENT EXPOSURES: 16 YEAR OLDS














































CLASSIFICATION	PRE-SEASON	IN-SEASON	TIMES
 Strength	 	 	
 Speed	 		
 Energy Systems	 		
 Mobility / Flexibility	 	 	
 Skills	 	 	
 Contact Conditioning			
 Games		 	
	 	 	

BENCHMARKING STANDARDS CLUB - AT STANDARD

Backs Standards	Men	Women	Forwards Standards	Men	Women
Broad Jump Standards (m)	2.60 - 2.40	2.20 - 2.00	Broad Jump Standards (m)	2.50 - 2.30	2.10 - 1.90
Med Ball Chest Pass (m)	7.50 - 6.00	5.25 - 4.00	Med Ball Chest Pass (m)	7.50 - 6.00	5.75 - 4.50
1.2k TT (mins)	5.10 - 5.20	6.00 - 6.10	1.2k TT (mins)	5.25 - 5.35	6.35 - 6.45

Refer to Appendices [\(Page 32\)](#) for Performance Testing Protocols.

WEEKLY CONTENT EXPOSURES: 17 YEAR OLDS

CLASSIFICATION	PRE-SEASON	IN-SEASON	TIMES
 Strength	  	 	
 Speed	 		
 Energy Systems	 	 	
 Mobility / Flexibility	 	 	
 Skills	  	  	
 Contact Conditioning	 		
 Games		 	
	 	 	

BENCHMARKING STANDARDS CLUB - AT STANDARD

Backs Standards	Men	Women	Forwards Standards	Men	Women
Broad Jump Standards (m)	2.60 - 2.40	2.20 - 2.00	Broad Jump Standards (m)	2.50 - 2.30	2.10 - 1.90
Med Ball Chest Pass (m)	7.50 - 6.00	5.25 - 4.00	Med Ball Chest Pass (m)	7.50 - 6.00	5.75 - 4.50
1.2k TT (mins)	5.10 - 5.20	6.00 - 6.10	1.2k TT (mins)	5.25 - 5.35	6.35 - 6.45

Refer to Appendices [\(Page 32\)](#) for Performance Testing Protocols.

BENCHMARKING STANDARDS - CLUB

Backs Standards - Men	Exceeding Standard	At Standard	Below Standard
Broad Jump Standards (m)	>2.60	2.60 - 2.40	<2.40
Med Ball Chest Pass (m)	>9.00	7.50 - 6.00	<7.50
20m Speed Standards (sec)	<3.20	3.20 - 3.30	>3.30
1.2k TT (mins)	<5.10	5.10 - 5.20	>5.20
Back Squat Standards (R/BW)	<1.5	1.5 - 1.4	<1.4
Bench Press Standards (R/BW)	<1.20	1.20 - 1.10	<1.10
Prone Chin Up Standards (R/BW)	<0.20	0.20 - 0.10	<0.10

Backs Standards - Women	Exceeding Standard	At Standard	Below Standard
Broad Jump Standards (m)	>2.20	2.20 - 2.00	<2.00
Med Ball Chest Pass (m)	>6.50	5.25 - 4.00	<5.25
20m Speed Standards (sec)	<3.70	3.70 - 3.80	>3.80
1.2k TT (mins)	<6.00	6.00 - 6.10	>6.10
Back Squat Standards (R/BW)	<1.20	1.2 - 1.1	<1.1
Bench Press Standards (R/BW)	<0.9	0.9 - 0.8	<0.8
Prone Chin Up Standards (R/BW)	<0.05	0.5 - BW	<BW

Forwards Standards - Men	Exceeding Standard	At Standard	Below Standard
Broad Jump Standards (m)	>2.50	2.50 - 2.30	<2.30
Med Ball Chest Pass (m)	>9.50	7.50 - 6.00	<8.00
20m Speed Standards (sec)	<3.30	3.30 - 3.40	>3.40
1.2k TT (mins)	<5.25	5.25 - 5.35	>5.35
Back Squat Standards (R/BW)	<1.5	1.5 - 1.4	<1.4
Bench Press Standards (R/BW)	<1.20	1.20 - 1.10	<1.10
Prone Chin Up Standards (R/BW)	<0.20	0.20 - 0.10	<0.10

Forwards Standards - Women	Exceeding Standard	At Standard	Below Standard
Broad Jump Standards (m)	>2.10	2.10 - 1.90	<1.90
Med Ball Chest Pass (m)	>7.00	5.75 - 4.50	<5.75
20m Speed Standards (sec)	<3.75	3.75 - 3.85	>3.85
1.2k TT (mins)	<6.35	6.35 - 6.45	>6.45
Back Squat Standards (R/BW)	<1.20	1.2 - 1.1	<1.1
Bench Press Standards (R/BW)	<0.9	0.9 - 0.8	<0.8
Prone Chin Up Standards (R/BW)	<0.05	0.5 - BW	<BW

Refer to Appendices ([Page 32](#)) for Performance Testing Protocols.

YEARLY PLAN - CLUB

Use the percentages of each physical component to allocate content in each session.

Strength	Energy Systems	Speed/Agility	Other
1. Tech/ Injury Prev/ Hypertrophy	1. Oxidative - Volume running at 60-80%	1. Technique development	Unload Wk
2. Strength	2. Glycolitic - Lactate tolerance - 80-90%	2. Acceleration/COD	
3. Power	3. Phosphagen - O2 Power - Repeat Speed 90-100%	3. Max Velocity	

GENERAL PRE-SEASON

NOVEMBER	Phase 1A	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes	
	Test		ISC Testing 3rm Strength					Technique in all areas. Accumulation of volume focus. ISC testing wk 1 establishing baselines. Testing include Height, Weight, MB Chest Throw, Broad Jump and 1.2kTT. Strength test wk 3.
	Strength	1.60%, 2. 30%, 3.10%	2	2	2	2		
	Energy Systems	1.50%, 2. 35%, 3.15%	2	2	2	1		
	Speed/Agility	1.60%, 2. 20%, 3.20%	2	2	2	1		
	Flex/Mobility	Static/Band	2	2	2	1		
Number of Sessions		8	8	8	5			
DECEMBER	Phase 1B	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes	
	Test		MS = Movement Screen					Build Systems - particularly strength and energy systems base. Players should be familiar enough with programs to be able to continue working independently over the Holiday period.
	Strength	1.50%, 2. 40%, 3.10%	2	2	2	2		
	Energy Systems	1.40%, 2. 40%, 3.20%	2	2	2	1		
	Speed/Agility	1.50%, 2. 25%, 3.25%	2	2	2	1		
	Flex/Mobility	Static/Band - Intro Trig	2	2	2	2		
Number of Sessions		8	8	8	6			
JANUARY	Phase 1C	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes	
	Test		ISC Testing 3rm Strength					Major training block - Strength and Glycolitic system focus. Accumulation of volume focus. Re-Test ISC Strength test wk 3.
	Strength	1.40%, 2. 50%, 3.10%	3	3	3	2		
	Energy Systems	1.35%, 2. 45%, 3.20%	2	2	2	1		
	Speed/Agility	1.40%, 2. 30%, 3.30%	2	2	2	1		
	Flex/Mobility	Static/Band/Trig	2	2	2	2		
Number of Sessions		9	9	9	6			

YEARLY PLAN - CLUB

IN-SEASON REP PROGRAM

	Phase 2A	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes
FEBRUARY	Test						Trial Games - conditioning sessions decrease
	Strength	1.35%, 2. 50%, 3.15%	3	3	3	2	
	Energy Systems	1.30%, 2. 45%, 3.25%	2	1	1	0	
	Speed/Agility	1.30%, 2. 35%, 3.35%	2	2	2	1	
	Flex/Mobility	Static/Band/Trig	2	2	2	3	
	Number of Sessions		9	8	8	6	
MARCH	Phase 2B	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes
	Test		ISC Testing				Re-Test ISC wk 1. CC/MM Games - commence wk 1. HN commence wk 2
	Strength	1.35%, 2. 45%, 3.20%	2	2	2	2	
	Energy Systems	1.25%, 2. 40%, 3.35%	1	1	1	0	
	Speed/Agility	1.30%, 2. 35%, 3.35%	1	1	1	1	
	Flex/Mobility	Static/Band/Trig	2	2	2	3	
Number of Sessions		6	6	6	6		
APRIL	Phase 2C	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes
	Test						BHP and HDC commence wk 2, Final wk of CC wk 2. Final wk of HN wk 3. Strength test wk 3.
	Strength	1.35%, 2. 45%, 3.20%	2	2	2	2	
	Energy Systems	1.20%, 2. 35%, 3.45%	1	1	1	0	
	Speed/Agility	1.30%, 2. 35%, 3.35%	1	1	1	1	
	Flex/Mobility	Static/Band/Trig	2	2	2	3	
Number of Sessions		6	6	6	6		

YEARLY PLAN - CLUB

IN-SEASON SCHOOL PROGRAM

	Phase 3A	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes	
MAY	Test		ISC Testing					Re-Test ISC wk 1. GF MM wk 1. Schools RL wk 2 & 4 (15-18yrs)
	Strength	1.30%, 2. 40%, 3.30%	2	2	2	2		
	Energy Systems	1.20%, 2. 35%, 3.45%	1	1	1	0		
	Speed/Agility	1.20%, 2. 40%, 3.40%	1	1	1	1		
	Flex/Mobility	Static/Band/Trig	2	2	2	3		
	Number of Sessions		6	6	6	6		
	Phase 3B	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes	
JUNE	Test		ISC Testing					Schools Langer/Payne Rounds 1-2 in June. Re-Test ISC wk 4.
	Strength	1.30%, 2. 40%, 3.30%	2	2	2	2		
	Energy Systems	1.20%, 2. 35%, 3.45%	1	1	1	0		
	Speed/Agility	1.20%, 2. 40%, 3.40%	1	1	1	1		
	Flex/Mobility	Static/Band/Trig	2	2	2	3		
	Number of Sessions		6	6	6	6		
	Phase 3C	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes	
JULY	Test		3rm Strength					Australian Schools Carnival wk 1. Schools Langer/Payne Rounds 3-4 in July - wk-2-4 Strength test wk 3.
	Strength	1.30%, 2. 40%, 3.30%	2	2	2	2		
	Energy Systems	1.20%, 2. 35%, 3.45%	1	1	1	0		
	Speed/Agility	1.20%, 2. 40%, 3.40%	1	1	1	1		
	Flex/Mobility	Static/Band/Trig	2	2	2	3		
	Number of Sessions		6	6	6	6		

YEARLY PLAN - CLUB

IN-SEASON CLUB COMPETITION















































	Phase 4A	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes	
AUGUST	Test	ISC Testing						Schools Langer/Payne Rounds 3-4 in August - wk-1-2. NRL Schools knock out - wk 3-4. ISC Testing Wk 4
	Strength	1.20%, 2. 50%, 3.30%	2	2	2	2		
	Energy Systems	1.10%, 2. 30%, 3.60%	1	1	1	0		
	Speed/Agility	1.20%, 2. 40%, 3.40%	1	1	1	1		
	Flex/Mobility	Static/Band/Trig	2	2	2	3		
		Number of Sessions	6	6	6	6		
SEPTEMBER	Test	3rm Strength						Re-Test ISC. NRL Schools knock out - wk 1-2. Strength test wk 3.
	Strength	1.25%, 2. 45%, 3.30%	2	2	2	2		
	Energy Systems	1.25%, 2. 40%, 3.35%	1	1	1	0		
	Speed/Agility	1.20%, 2. 40%, 3.40%	1	1	1	1		
	Flex/Mobility	Static/Band/Trig	2	2	2	3		
		Number of Sessions	6	6	6	6		
OCTOBER	Phase 4C	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes	
	N/A						Leave Period	



SEMI-PRO

18+ YEAR OLDS

WEEKLY CONTENT EXPOSURES: 18+ YEARS

CLASSIFICATION	PRE-SEASON	IN-SEASON	TIMES
 Strength	  	 	
 Speed	 	 	
 Energy Systems	  		
 Mobility / Flexibility	 	 	
 Skills	  	  	
 Contact Conditioning	 		
 Games			
	 	 	

BENCHMARKING STANDARDS CLUB - AT STANDARD

Backs Standards	Men	Women	Forwards Standards	Men	Women
Broad Jump Standards (m)	2.80 - 2.60	2.40 - 2.20	Broad Jump Standards (m)	2.70 - 2.50	2.30 - 2.10
Med Ball Chest Pass (m)	9.00 - 7.50	6.50 - 5.25	Med Ball Chest Pass (m)	9.50 - 8.00	7.00 - 5.75
1.2k TT (mins)	4.45 - 4.55	5.40 - 5.50	1.2k TT (mins)	5.05 - 5.15	6.05 - 6.10

Refer to Appendices [\(Page 32\)](#) for Performance Testing Protocols.

BENCHMARKING STANDARDS - SEMI-PRO

Backs Standards - Men	Exceeding Standard	At Standard	Below Standard
Broad Jump Standards (m)	>2.80	2.80 - 2.60	<2.60
Med Ball Chest Pass (m)	>10.50	9.00 - 7.50	<9.00
20m Speed Standards (sec)	<3.05	3.05 - 3.15	>3.15
1.2k TT (mins)	<4.45	4.45 - 4.55	>4.55
Back Squat Standards (R/BW)	<1.75	1.75 - 1.65	<1.65
Bench Press Standards (R/BW)	<1.35	1.35 - 1.25	<1.25
Prone Chin Up Standards (R/BW)	<0.35	0.35 - 0.25	<0.25

Backs Standards - Women	Exceeding Standard	At Standard	Below Standard
Broad Jump Standards (m)	>2.40	2.40 - 2.20	<2.20
Med Ball Chest Pass (m)	>7.75	6.50 - 5.25	<6.50
20m Speed Standards (sec)	<3.45	3.45 - 3.55	>3.55
1.2k TT (mins)	<5.40	5.40 - 5.50	>5.50
Back Squat Standards (R/BW)	<1.35	1.35 - 1.25	<1.25
Bench Press Standards (R/BW)	<1.0	1.0 - 0.9	<0.9
Prone Chin Up Standards (R/BW)	<0.10	1.0 - 1.05	<1.05

Forwards Standards - Men	Exceeding Standard	At Standard	Below Standard
Broad Jump Standards (m)	>2.70	2.70 - 2.50	<2.50
Med Ball Chest Pass (m)	>11.00	9.50 - 8.00	<9.50
20m Speed Standards (sec)	<3.15	3.15 - 3.25	>3.25
1.2k TT (mins)	<5.05	5.05 - 5.15	>5.15
Back Squat Standards (R/BW)	<1.75	1.75 - 1.65	<1.65
Bench Press Standards (R/BW)	<1.35	1.35 - 1.25	<1.25
Prone Chin Up Standards (R/BW)	<0.35	0.35 - 0.25	<0.25

Forwards Standards - Women	Exceeding Standard	At Standard	Below Standard
Broad Jump Standards (m)	>2.30	2.30 - 2.10	<2.10
Med Ball Chest Pass (m)	>8.25	7.00 - 5.75	<7.00
20m Speed Standards (sec)	<3.55	3.55 - 3.55	>3.55
1.2k TT (mins)	<6.05	6.05 - 6.10	>6.10
Back Squat Standards (R/BW)	<1.35	1.35 - 1.25	<1.25
Bench Press Standards (R/BW)	<1.0	1.0 - 0.9	<0.9
Prone Chin Up Standards (R/BW)	<0.10	1.0 - 1.05	<1.05

Refer to Appendices ([Page 32](#)) for Performance Testing Protocols.

YEARLY PLAN - SEMI-PRO

Use the percentages of each physical component to allocate content in each session.

Strength	Energy Systems	Speed/Agility	Other
1. Tech/ Injury Prev/ Hypertrophy	1. Oxidative - Volume running at 60-80%	1. Technique development	Unload Wk
2. Strength	2. Glycolitic - Lactate tolerance - 80-90%	2. Acceleration/COD	
3. Power	3. Phosphagen - O2 Power - Repeat Speed 90-100%	3. Max Velocity	

GENERAL PRE-SEASON

NOVEMBER	Phase 1A	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes	
	Test		ISC Testing 3rm Strength					Technique in all areas. Accumulation of volume focus. ISC testing wk 1 establishing baselines. Testing include Height, Weight, MB Chest Throw, Broad Jump and 1.2kTT. Strength test wk 3.
	Strength	1.60%, 2. 30%, 3.10%	3	3	3	3		
	Energy Systems	1.50%, 2. 35%, 3.15%	2	2	2	1		
	Speed/Agility	1.60%, 2. 20%, 3.20%	2	2	2	1		
	Flex/Mobility	Static/Band	2	2	2	2		
Number of Sessions		9	9	9	7			
DECEMBER	Phase 1B	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes	
	Test		MS = Movement Screen					Build Systems - particularly strength and energy systems base. Players should be familiar enough with programs to be able to continue working independently over the Holiday period.
	Strength	1.50%, 2. 40%, 3.10%	3	3	3	3		
	Energy Systems	1.40%, 2. 40%, 3.20%	2	2	2	1		
	Speed/Agility	1.50%, 2. 25%, 3.25%	2	2	2	1		
	Flex/Mobility	Static/Band - Intro Trig	2	2	2	2		
Number of Sessions		9	9	9	7			
JANUARY	Phase 1C	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes	
	Test		ISC Testing 3rm Strength					Major training block - Strength and Glycolitic system focus. Accumulation of volume focus. Re-Test ISC. Strength test wk 3.
	Strength	1.40%, 2. 50%, 3.10%	3	3	3	3		
	Energy Systems	1.35%, 2. 45%, 3.20%	2	2	2	1		
	Speed/Agility	1.40%, 2. 30%, 3.30%	2	2	2	1		
	Flex/Mobility	Static/Band/Trig	2	2	2	2		
Number of Sessions		9	9	9	7			

YEARLY PLAN - SEMI-PRO

IN-SEASON REP PROGRAM

	Phase 2A	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes	
FEBRUARY	Test						Trial Games - conditioning sessions decrease	
	Strength	1.35%, 2. 50%, 3.15%	3	3	3	2		
	Energy Systems	1.30%, 2. 45%, 3.25%	2	1	1	0		
	Speed/Agility	1.30%, 2. 35%, 3.35%	2	2	2	1		
	Flex/Mobility	Static/Band/Trig	2	2	2	3		
	Number of Sessions		9	8	8	6		
MARCH	Phase 2B	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes	
	Test		ISC Testing					Re-Test ISC wk 1. MM Games - commence wk 1. HN commence wk 2
	Strength	1.35%, 2. 45%, 3.20%	2	2	2	2		
	Energy Systems	1.25%, 2. 40%, 3.35%	1	1	1	0		
	Speed/Agility	1.30%, 2. 35%, 3.35%	1	1	1	1		
	Flex/Mobility	Static/Band/Trig	2	2	2	3		
Number of Sessions		6	6	6	6			
APRIL	Phase 2C	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes	
	Test						BHP and HDC commence wk 2, Final wk of HN wk 3. Strength test wk 3.	
	Strength	1.35%, 2. 45%, 3.20%	2	2	2	2		
	Energy Systems	1.20%, 2. 35%, 3.45%	1	1	1	0		
	Speed/Agility	1.30%, 2. 35%, 3.35%	1	1	1	1		
	Flex/Mobility	Static/Band/Trig	2	2	2	3		
Number of Sessions		6	6	6	6			

YEARLY PLAN - SEMI-PRO

IN-SEASON SCHOOL PROGRAM

	Phase 3A	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes	
MAY	Test		ISC Testing					Re-Test ISC wk 1. GF MM wk 1. Schools RL wk 2 & 4 (15-18yrs)
	Strength	1.30%, 2. 40%, 3.30%	2	2	2	2		
	Energy Systems	1.20%, 2. 35%, 3.45%	1	1	1	0		
	Speed/Agility	1.20%, 2. 40%, 3.40%	1	1	1	1		
	Flex/Mobility	Static/Band/Trig	2	2	2	3		
	Number of Sessions		6	6	6	6		
	Phase 3B	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes	
JUNE	Test		ISC Testing					Schools Langer/Payne Rounds 1-2 in June. Re-Test ISC wk 4. Strength test wk 3.
	Strength	1.30%, 2. 40%, 3.30%	2	2	2	2		
	Energy Systems	1.20%, 2. 35%, 3.45%	1	1	1	0		
	Speed/Agility	1.20%, 2. 40%, 3.40%	1	1	1	1		
	Flex/Mobility	Static/Band/Trig	2	2	2	3		
	Number of Sessions		6	6	6	6		
	Phase 3C	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes	
JULY	Test		3rm Strength					Australian Schools Carnival wk 1. Schools Langer/Payne Rounds 3-4 in July - wk-2-4. Strength test wk 3.
	Strength	1.30%, 2. 40%, 3.30%	2	2	2	2		
	Energy Systems	1.20%, 2. 35%, 3.45%	1	1	1	0		
	Speed/Agility	1.20%, 2. 40%, 3.40%	1	1	1	1		
	Flex/Mobility	Static/Band/Trig	2	2	2	3		
	Number of Sessions		6	6	6	6		

YEARLY PLAN - SEMI-PRO

IN-SEASON CLUB COMPETITION

	Phase 4A	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes	
AUGUST	Test	ISC Testing						Schools Langer/Payne Rounds 3-4 in August - wk-1-2. NRL Schools knock out - wk 3-4. ISC Testing Wk 4
	Strength	1.20%, 2. 50%, 3.30%	2	2	2	2		
	Energy Systems	1.10%, 2. 30%, 3.60%	1	1	1	0		
	Speed/Agility	1.20%, 2. 40%, 3.40%	1	1	1	1		
	Flex/Mobility	Static/Band/Trig	2	2	2	3		
		Number of Sessions	6	6	6	6		
SEPTEMBER	Test	3rm Strength						Re-Test ISC. NRL Schools knock out - wk 1-2. Strength test wk 3.
	Strength	1.25%, 2. 45%, 3.30%	2	2	2	2		
	Energy Systems	1.25%, 2. 40%, 3.35%	1	1	1	0		
	Speed/Agility	1.20%, 2. 40%, 3.40%	1	1	1	1		
	Flex/Mobility	Static/Band/Trig	2	2	2	3		
		Number of Sessions	6	6	6	6		
OCTOBER	Phase 4C	Focus	Wk 1	Wk 2	Wk 3	Wk 4	Notes	
	N/A						Leave Period	



APPENDICES

APPENDIX A: PERFORMANCE TESTING TO INFORM TRAINING

Performance testing provides valuable information to performance staff relating to their players physical capabilities. This information is used to inform the physical training requirements of individual players and the wider team. In this way training becomes specific allowing players to improve training and game performance qualities whilst remaining robust in their quest to remain injury free.

QRL PERFORMANCE TESTING PROTOCOLS

The aim was to identify performance tests easily administered on-field, required minimal equipment and were likely to be used in various club environments as players moved through the statewide pathway.

To meet this aim the following tests have been identified for all mens and womens Statewide Programs.

Performance Test	Measures	Equipment	Metrics
1.2km Shuttle Time Trial	Aerobic Capacity	<ul style="list-style-type: none">Field with markings at 0, 20, 40, 60MStopwatchWhistle	Mins:secs
Broad Jump	Lower Body Power	<ul style="list-style-type: none">Marker/Agility Pole5m Measuring Tape	Metres:cm
Medicine Ball Chest Throw	Upper Body Power	<ul style="list-style-type: none">3kg Medicine BallTape Measure	Metres:cm
Height	Player Growth and Maturation	<ul style="list-style-type: none">Tape Measure	cm
Weight	Player Growth and Maturation	<ul style="list-style-type: none">Weight Scales	kg

To assist your understanding and implementation of the physical test battery the following information is provided over the following pages:

- Test Rationale and protocols
- Trouble shooting contact
- References for the testing
- S&C Advisory group details

1.2KM TIME TRIAL

This test is conducted to provide the S&C coach with an insight into the aerobic capacity of their athlete/s. Achieving optimal aerobic capacity results allows players to complete games with reduced fatigue (Watson 2017). Reduced levels of fatigue allow for greater skills execution with a reduced risk of injury (Knapik 2015). By comparing the results achieved against the QRL benchmarks coaches can then compare the data directly with the playing level required to determine the ongoing training requirements for each player. This time trial has also shown to be valid and reliable compared to the 30-15 Intermittent Fitness Test, as used by professional rugby league clubs (Brew 2014). This data can be used to systematically determine running speeds and volume to build capacity via MAS or other such aerobic training modalities.

PURPOSE

The 1.2km test is designed to measure an athlete's aerobic capacity.

EQUIPMENT

- Field with markers or agility poles at 0, 20, 40 and 60 metres
- Stopwatch
- Whistle

SETUP

1. Place a marker or agility pole at 0, 20, 40 and 60 metres on the field.

PROCEDURE

1. The athlete commences the test with their foot behind the start line at zero (0) metres
2. A whistle is blown which signals the athlete to run to the 20m line, make foot contact with the line and return to the starting line.
3. The athlete then turns and runs to the 40m line, makes foot contact with the line and returns to the start line. This process is repeated for the 60m line.
4. On return to start line from the 60m shuttle, the athlete commences the 2nd 20, 40m, 60 rotation and completes 5 repetitions totalling 1.2km in distance.
5. The test is complete when the athlete returns to the start line after the 5th 60m shuttle.
6. Record the time taken for the athlete to complete the test in minutes and seconds on SMARTABASE Athlete Management System

BROAD JUMP

Scan / Click to View
Video of Protocol »



This test is conducted to provide the S&C coach with an insight into the lower body power of their athlete/s. Players reported with superior leg power are reported to be more effective in both attacking and defensive plays (Ross 2015, Redman 2021). By comparing the results achieved against the QRL benchmarks coaches can then compare the data directly with playing level required and determine the ongoing training requirements of each player. This data can be used in conjunction with their training age to determine whether a training emphasis is focused on building strength (lower body capacity) or whether greater time is spent on developing power (the neuromuscular firing rate).

PURPOSE

The Broad Jump test is designed to measure explosive lower body power through both horizontal and vertical planes. The longer the jump, the greater potential the athlete has for producing force rapidly.

EQUIPMENT

- Marker/agility pole
- 5m measuring tape

SETUP

- Place a marker or agility pole on any line that you want as the starting point which will represent the zero (0) metre mark.
- Line up a measuring tape from this point and extend approximately 4m.

PROCEDURE

1. The athlete is to stand with feet hip width apart with front of both toes at the zero (0) metre mark.
2. They are instructed to jump as far as possible, ensuring they can stick the landing. Arm swing is encouraged.
3. Once the participant has jumped, measure the point at which the back of the heel is in line with the measuring tape. If feet are slightly out of line, take the measurement from the furthest foot back.
4. Measure the test in metres (e.g. 2.45 metres) The participant must complete a minimum of two attempts and the best attempt is recorded on SMARTABASE. This does not include any warm-up jumps or familiarisation with the test.
5. The participant must complete a minimum of two attempts and the best attempt is recorded on SMARTABASE. This does not include any warm-up jumps or familiarisation with the test.

FALSE READINGS

1. Both feet must push off at the same time. The test needs to be repeated if the participant uses a split stance to take off or pushes one foot prior to the other.
2. The participant must stick the landing. The test needs to be repeated if the participant falls forward onto their hands or falls in any direction onto their hands.
3. The participant must land facing forwards with feet approximately inline with each other. The test needs to be repeated if the participant lands in a lunge, side one, or not facing forward.

MEDICINE BALL CHEST THROW – (MBCT)

This test is conducted to provide the S&C coach with an insight into the upper body power of their athlete/s. Upper body power is a critical factor in determining the success of both over the ball and under the ball tackling techniques in rugby league (Speranza 2015). By comparing the results achieved against the QRL benchmarks coaches can then compare the data directly with the playing level required and determine the ongoing training requirements for each player. This data can be used in conjunction with their training age to determine whether a training emphasis is focused on building strength (lower body capacity) or whether greater time is spent on developing power (the neuromuscular firing rate).

PURPOSE

The MBCT is a quick, reliable and cost-effective measure of upper body power.

EQUIPMENT

- 3kg medicine ball
- Tape measure

SETUP

- Place a marker on any line that you want as the starting point which will represent the zero (0) metre mark.
- Line up a measuring tape from this point and extend approximately 4m.

PROCEDURE

1. The player will kneel on the line, with a straight back and hips fully extended. No hip hinge should be present, with a straight line between shoulders and knees.
2. A 3kg medicine ball is held against the chest, with elbows tucked into the player's side.
3. Players will be instructed to "throw as far as possible" by extending their arms, until forearms are parallel with the ground. Players may not rock back or conduct any movement which allows the body to gain momentum. The throw should only use the arms.
4. Record where the medicine ball lands along the tape measure. Ideally this can be into a sand pit for greater accuracy of measure.
5. The participant must complete a minimum of two attempts and the best attempt is recorded on SMARTABASE. This does not include any warm-up jumps or familiarisation with the test.

ADDITIONAL TESTING

The following speed and strength tests are available for programs where time, resources and facilities allow the tests to be completed. As for the three statewide tests there are benchmark standards associated with these tests.

Below the protocols for 4 tests are outlined:

- 1.** 20m Speed
- 2.** Squat - Lower body strength
- 3.** Bench Press – Upper body push strength
- 4.** Chin up – Upper body pull strength

ADDITIONAL TESTING: 20M SPEED

Speed is a critical component in the game of rugby league. The ability to accelerate off the line or chase down a defender in defence as well as accelerate through a defensive hole or provide support to a player in space during attacking raids is vital to team success. The knowledge of your players speed capabilities are important to understand in planning and executing your physical training plans.

PURPOSE

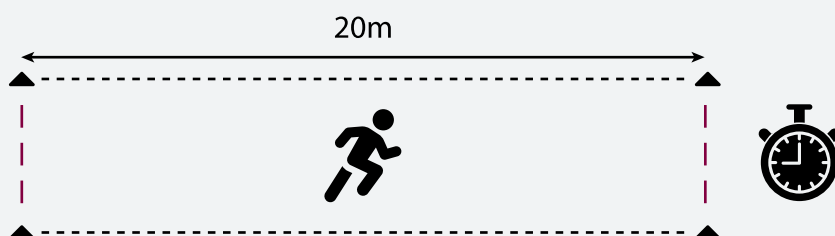
The 20m speed test is designed to test two key elements vital to success in rugby league:

- Acceleration
- Maximum speed over 20m

EQUIPMENT

- Marker/agility pole
- 20m measuring tape
- Stop watch – ideally a minimum of 2 up to 5. Ideally if timing gates are accessible these would be a more accurate option.

SETUP



PROCEDURE

1. Place a marker or agility pole on any line that you want as the starting point which will represent the zero (0) metre mark.
2. Timing commences at the first movement the player makes to initiate the 20m sprint. This alleviates the need to react to a coach's signal.
3. The player continues to sprint as fast as possible past the 20m mark.
4. When the player crosses the finish line with their chest the timer is stopped.
5. Measure the test in seconds to decimal points (e.g. 3.23sec) The participant should complete a minimum of two attempts and the best attempt is recorded on SMARTABASE.

ADDITIONAL TESTING: STRENGTH TESTING

Strength is a crucial quality for success in rugby league during both attack and defence. Absolute strength and power (regardless of body mass) is required to apply high forces quickly in all contact situations. Players running velocity and ability to change direction are also related to their strength and power relative to body mass. The back squat, bench press and prone grip chin up provide a useful index of whole body strength.

GENERAL TEST PROCEDURES

The strength tests used include repetition maximum (RM) back squat, bench press and prone grip chin up. Following are detailed descriptions of these strength tests. Warm-up and sub-maximal attempts of the bench press and squat should be performed in an appropriate rack with spotters present. The following general guidelines are recommended for all tests:

- Strength testing ideally should be performed on a separate day from the field tests - separated by 48 h.
- Ensure the player has performed an appropriate warm-up. As a minimum, perform a trial at ~ 90% of specified repetition maximum (RM) for each test. If it is the first time, he or she should perform an initial trial at ~ 90% of weight lifted in training.
- Lowering and lifting actions must be performed in a continuous manner. A single rest of no more than 2 s is allowed between repetitions.
- A maximum of 5 min recovery between trials is allowed.
- Ideally, specified repetition maximum (RM) test should be completed within four trials (not including the warm-up).
- It is recommended that a spotter, other than the supervising coach, be used where appropriate.

ADDITIONAL TESTING: SQUAT PROTOCOL

- The safety bars should be set at the highest possible point without affecting the athlete's range of motion.
- Heel blocks should not be used unless anatomical structures limit the athlete's range of motion or prevent the exercise from being performed with correct technique. Use of heel blocks should be consistent between tests.
- The use of a weight belt is optional but should be consistent between tests.
- Athlete should assume a natural stance with feet approximately shoulder width apart.
- Bar should be held on the trapezius during test. Hands should be held in a comfortable position as close to shoulders as possible.
- During the lowering action knees should track in line with the toes. Heels must always remain in contact with the floor during test.
- Players squat to a minimum depth whereby the crease of hips is level with the top of the knee.
- Record RM result on recording sheet.
- Recommended coach position – side on to athlete to facilitate observation of hip/knee angle, back posture and depth.
- A valid repetition is one in which the weight is lowered to required depth and then extended to full leg extension with trunk as upright as possible.

Technical Violations:

- Excessive forward or sideways movement during test
- Loss of controlled spinal position
- Lifting of heels off the floor
- Not lowering to required depth
- Raising of hips prior to shoulder elevation
- Having greater than 2 seconds rest between repetitions
- Failure to complete the lift.

ADDITIONAL TESTING: BENCH PRESS PROTOCOL

- Players may choose the width of grip that they prefer initially but this should remain consistent over consecutive attempts and tests.
- In the bottom position, the forearms should be perpendicular to the floor.
- Foot position should be recorded (either both feet on the floor or on the bench).
- Record RM result on recording sheet.
- Recommended assessor position – 45 degrees to front of athlete level with hips to facilitate observation of feet, shoulders and buttocks and bar contacting chest.
- A valid repetition is one in which the athlete lowers the bar to the highest point of the chest (above the bench) in a controlled movement prior to completing the lift to full elbow extension.

Technical Violations:

- Failing to make contact with or excessively bouncing the bar off the chest
- Lifting the shoulders or buttocks off the bench
- Raising either foot off the bench/ground
- Excessive deviation of bar from “normal” position (observed in warm-up)
- An uneven bar during the lift (shoulder elevation or uneven extension of arms during lift)
- Having greater than 2 seconds rest between repetitions.

ADDITIONAL TESTING: CHIN UPS

- Chin ups should be performed with a medium width pronated grip. The grip should be no wider than 1 hand width outside the shoulders whilst in the hang position. Athletes may choose the width of grip within limits but this must remain consistent over consecutive attempts and tests.
- Record RM result on recording sheet. Results should be recorded as body mass + external mass lifted.
- Recommended assessor position – side on to athlete at eye level with bar.
- Starting from a fully extended elbow position (hang position) the player is required to pull body up in one smooth action so that the chin touches the top of the bar with the head in a neutral position (head should remain in neutral position to point above the bar). Legs can be held in semiflexed position or extended, however they must not move during the exercise.

Technical Violations:

- Failing to get chin over the bar with head in neutral position
- Breaking of the hips and/or knees from start position during the lift
- Body swing during lift
- Not going to full elbow extension between repetitions
- Having greater than 2 seconds rest between repetitions.

CALCULATING 1RM FOR TRAINING LOAD PRESCRIPTION

The table below provides a guide to estimating a 1RM based off a RM, for example a player completes a bench press with 3 reps at 80kg. This equates to 94% of 1RM load. To calculate the estimated 1RM load you would multiply 80kg by the correction factor (CF) of 1.06. This would give you an estimated 1RM of 84.8kg for the player. You can then use the estimated 1RM to calculate load prescriptions relative to each player.

CALCULATING 1RM

	100	96	94	92	90	88	86	84	82	80
Reps	1	2	3	4	5	6	7	8	9	10
CF	1.0	1.04	1.06	1.08	1.11	1.13	1.16	1.19	1.22	1.25
%1-RM	78	76	74	72	70	68	66	64	62	60
Reps	11	12	13	14	15	16	17	18	19	20
CF	1.28	1.31	1.35	1.39	1.43	1.47	1.52	1.56	1.61	1.64

Alternatively, there are multiple 1RM estimation equation you can access via an internet search (e.g., Epley, Bryzcki).

Guide for determining 1-RM from varying repetitions performed to maximum effort in novice and younger less experienced resistance trainers performing standard strength exercises. An estimate of 1-RM is made when the weight lifted in multiplied by the conversion factor according to the number of repetitions that were performed with that weight (Table developed by Dr Daniel Baker) Abbreviations; %1-RM = percentage of one repetition maximum; Reps = repetitions; CF = conversion factor.

TROUBLE SHOOTING

All tests are available via the 'ISC Testing' form on Smartabase through desktop and tablet (e.g. iPad) for individual and/or group entry. Please contact Teale Pyne (QRL Performance Services & Network Coordinator – t.pyne@qrl.com.au or 0447357273) should you need assistance collecting or submitting your testing results into the platform.

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