



Baseball New Zealand

**NATIONAL FITNESS TESTING METRICS &
BENCHMARKS**

National Performance Pathway



National Performance Pathway - Benchmarks & Metrics Testing

Testing or benchmarking of an athlete's level of fitness and conditioning is important in a national pathway and framework, to be able to track progression and monitor an athlete's physical ability and wellbeing.

Benchmarking & Metric Testing In Baseball

Undertaking standardised fitness and metric testing of baseball athletes is a key factor in Baseball NZ's ability to develop and progress athletes in the national pathway and beyond. The ability to set a baseline player profile along with tracking and monitoring an athlete's progress supports:

- Player selections & decision-making
- Strength & conditioning programming and enhancing player performances,
- Injury rehabilitation & return to play
- Identifies areas for improvement and sets the overall performance attitude.

Benchmark & Metric Testing Enables:

- The tracking and monitoring of players within the national player pathway, national squads and NZ teams aligned to the physical attributes of the game and benchmark metrics set out by Baseball NZ, to underpin the national player pathway programs.
- Clear transparency for athletes, coaches and management of a player's physical and conditioning expectations required to successfully progress through the national player pathway, national squad and NZ team selections.
- Player-specific and individualised programming, through the assessment, identification, and monitoring of physical strengths and weaknesses of all players.
- The monitoring and tracking of a player's progression before and after a specific training phase, to measure improvement and effectiveness of an implemented condition program or period.
- The assessment of a player's physical conditioning, or readiness to return to training or return to play following an injury and rehabilitation period or time away from baseball training and/or play.

Benchmark & Metric Testing Frequency & Considerations

Benchmark and metric testing should be undertaken several times throughout a season/cycle/training phase. However, testing should not be undertaken for just the sake of testing, all benchmarking should be followed with the next steps for improvement.

Baseline Metrics:

Baseline or initial benchmarking of athletes should occur at the entry or beginning of the training phase, squad induction. Baseline metrics sets the level for progression and improvement.

Ongoing Metrics:

Ongoing metrics and testing should be conducted aligned with the program and training phase and the athlete's age & stage, familiarisation to benchmark tests.

Conducting Benchmark & Metric Testing

All physical testing and benchmarking should be carried out consistently each time to ensure testing is reliable and valid, plus able to be comparable with previous testing data.



Baseball NZ Guidelines:

Benchmark and metric testing should occur under consistent conditions on which previous testing was undertaken and aligned to the nature of baseball and the baseball environment.

Considerations for Consistent Benchmarking & Metric Testing:

- Testing surface, grass/turf, indoor/outdoor - the surface the sport is played on and the surface previous benchmarking and metric testing was undertaken on.
- Temperature and time of day
- Closed environment - undertake testing in a closed environment to eliminate weather conditions
- Consider the order and number of physical parameter tests, including the number of tests appropriate per session for each age grade or level.
- Ideally it is best to test speed, power and Yo-Yo on one day, in that order and if

Baseball Benchmarking & Metric Tests

The benchmarking and metric tests outlined below have been identified as part of the national player pathway, player's profile for the National Development Squad, National Performance Squad and NZU15, NZU18, NZU23 and NZ Men's Diamondblacks teams.

Grade	ARM VELO *PULLDOWN				GRADING SCALE RATINGS												60Yrd				Hitting			
	U12	U15	U18	OPEN	U12	U15	U18	OPEN	U15	U18	OPEN	U15	U18	OPEN	U12	U15+	U12	U15	U18	OPEN	U12	U15	U18	OPEN
80 EXCELLENT	72+	84+	93+	95+	67+	80+	88+	95+	4.2	4.15	4.15	2	1.96	<1.90	<7.5	6.6	75+	85+	95+	100+	70-74	80-84	90-94	94-99
70 VERY GOOD	68-71	82-83	90-92	91-94	64-66	77-79	86-87	91-94	4.25	4.2	4.2	2.05	1.98	1.91-1.94	7.51-7.88	6.7	65-69	75-79	85-89	90-93	54-58	65-69	75-79	80-83
60 ABOVE AVG	64-67	80-81	87-89	88-90	61-63	74-76	84-85	88-90	4.3	4.25	4.25	2.1	2	1.95-1.97	7.89-8	6.9-7.00	59-64	70-74	80-84	84-89	49-53	60-64	70-74	75-79
50 SOLID AVG	60-63	77-79	84-86	85-87	58-60	70-73	82-83	85-87	4.35	4.3	4.3	2.15	2.02	1.98-2.0	8.01-8.25	7.1-7.3	54-58	65-69	75-79	80-83	44-48	55-59	65-69	70-74
40 AVERAGE	54-59	72-76	81-83	81-84	52-57	67-69	80-81	81-84	4.4	4.35	4.35	2.2	2.05	2.01-2.02	8.26-8.50	7.4-7.5	49-53	60-64	70-74	75-79	39-43	50-54	60-64	65-69
30 BELOW AVG	49-53	70-71	78-80	79-80	45-51	62-66	78-79	79-80	4.5	4.45	4.45	2.25	2.1	2.03-2.08	8.51-8.75	7.6-7.8	34-38	45-49	55-59	60-64	29-33	40-44	50-54	55-59
25 WELL BELOW	45-48	68-69	76-77	76-78	40-44	58-61	76-77	76-78	4.55	4.5	4.5	2.3	2.2	2.09-2.12	8.76-9.25	7.9-8	24-28	35-39	45-49	50-54	19-23	30-34	40-44	45-49
20 POOR	<45	<68	<76	<76	<40	<58	<76	<76	4.60+	4.55+	4.55+	2.35+	2.2+	>2.12+	>9.26	8+	<44	<55	<65	<70	<39	<50	<60	<65

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NATIONAL FITNESS TESTING METRICS & BENCHMARKS

National Performance Pathway



Grade	GRADING SCALERTINGS																				
	ARM VELO *PULLDOWN					Mound Velo			H - 1ST			C THROW DOWN			60Yrd			Hitting			
	U12	U15	U18	OPEN		U12	U15	U18	OPEN	U15	U18	OPEN	U15	U18	OPEN	U12	U15+	U12	U15	U18	OPEN
80	EXCELLENT	72+	84 +	93+	95+	67+	80+	88 +	95+	4.2	4.15	4.15	2	1.96	<1.90	<7.5	6.6	75 +	85 +	95 +	100+
70	VERY GOOD	68 - 71	82 - 83	90 - 92	91 - 94	64-66	77-79	86 - 87	91 - 94	4.25	4.2	4.2	2.05	1.98	1.91 - 1.94	7.51 - 7.88	6.7	70 - 74	80 - 84	90 - 94	94 - 99
60	ABOVE AVG	64 - 67	80 - 81	87 - 89	88 - 90	61-63	74 - 76	84 - 85	88 - 90	4.3	4.25	4.25	2.1	2	1.95 - 1.97	7.89 - 8	6.9 - 7.00	65 - 69	75 - 79	85 - 89	90 - 93
50	SOLID AVG	60 - 63	77 - 79	84 - 86	85 - 87	58 - 60	70 - 73	82 - 83	85 - 87	4.35	4.3	4.3	2.15	2.02	1.98 - 2.0	8.01 - 8.25	7.1 - 7.3	59 - 64	70 - 74	80 - 84	84 - 89
40	AVERAGE	54 - 59	72 - 76	81 - 83	81 - 84	52 - 57	67 - 69	80 - 81	81 - 84	4.4	4.35	4.35	2.2	2.05	2.01 - 2.02	8.26 - 8.50	7.4 - 7.5	54 - 58	65 - 69	75 - 79	80 - 83
30	BELOW AVG	49 - 53	70 - 71	78 - 80	79 - 80	45 - 51	62 - 66	78 - 79	79 - 80	4.5	4.45	4.45	2.25	2.1	2.03 - 2.08	8.51 - 8.75	7.6 - 7.8	49 - 53	60 - 64	70 - 74	75 - 79
25	WELL BELOW	45 - 48	68 - 69	76 - 77	76 - 78	40 - 44	58 - 61	76 - 77	76 - 78	4.55	4.5	4.5	2.3	2.2	2.09 - 2.12	8.76 - 9.25	7.9 - 8	44 - 48	55 - 59	65 - 69	70 - 74
20	POOR	<45	<68	<76	<76	<40	<58	<76	<76	4.60 +	4.55 +	4.55 +	2.35 +	2.2 +	>2.12 +	>9.26	8 +	<44	<55	<65	<70