

## **Podium Result Track**

The Podium Result Track is a tool implemented by Archery Canada to assess the progress of recurve athletes as they develop. The tool provides benchmark scores for athletes from age 14 to 27, at age appropriate outdoor distances.

Athletes shooting scores at or above the PRT score for their age, are on a pathway that would indicate strong potential for future success at an international level.

For the purpose of guiding athletes, Archery Canada has added additional pathways titled PRT(-1) and PRT(-2). The PRT(-1 ) pathway is used by Archery Canada as a minimum for entry in to some high-performance programs and national level youth teams. PRT(-2) is used in some instance to identify athletes for further development.

The PRT charts should only be used with athletes that are in a competitive stream with a regular training program. Athletes falling below PRT(-2) may still have significant long-term potential but are trending below the typical path for recurve archers. Archers with high performance goals and shooting scores below PRT(-2) should look for further opportunities for improvement including technical changes, increased training volume and improvements in general fitness.

Men's 720 Score										
Age	PRT Score			Score -1			Score -2			Distance
	50M	60M	70M	50M	60M	70M	50M	60M	70M	
14	626			612			598			50
15		618			604			592		60
16		640	616		624	596		604	572	60
17		642	618		624	596		604	572	60
18			636			618			596	70
19			646			626			604	70
20			654			636			614	70
21			658			642			624	70
22			664			650			634	70
23			668			656			642	70
24			670			658			646	70
25			674			662			650	70
26			676			664			652	70
27+			678			664			652	70

Men's Average Arrow Value										
Age	PRT Score			Score -1			Score -2			Distance
	50M	60M	70M	50M	60M	70M	50M	60M	70M	
14	8.69			8.50			8.31			50
15		8.58			8.39			8.22		60
16		8.89	8.56		8.67	8.28		8.39	7.94	60
17		8.92	8.58		8.67	8.28		8.39	7.94	60
18			8.83			8.58			8.28	70
19			8.97			8.69			8.39	70
20			9.08			8.83			8.53	70
21			9.14			8.92			8.67	70
22			9.22			9.03			8.81	70
23			9.28			9.11			8.92	70
24			9.31			9.14			8.97	70
25			9.36			9.19			9.03	70
26			9.39			9.22			9.06	70
27+			9.42			9.22			9.06	70

Women's 720 Score										
Age	PRT Score			Score -1			Score -2			Distance
	50M	60M	70M	50M	60M	70M	50M	60M	70M	
14	648			620			578			50
15		624			598			566		60
16		628	602		608	576		584	548	60
17		646	622		622	594		594	558	60
18			630			608			588	70
19			635			614			596	70
20			640			620			596	70
21			642			624			602	70
22			644			628			608	70
23			645			630			612	70
24			646			632			616	70
25			648			634			620	70
26			650			637			622	70
27			652			638			626	70

Women's Average Arrow Value										
Age	PRT Score			Score -1			Score -2			Distance
	50M	60M	70M	50M	60M	70M	50M	60M	70M	
14	9.00			8.61			8.03			50
15		8.67			8.31			7.86		60
16		8.72	8.36		8.44	8.00		8.11	7.61	60
17		8.97	8.64		8.64	8.25		8.25	7.75	60
18			8.75			8.44			8.17	70
19			8.82			8.53			8.28	70
20			8.89			8.61			8.28	70
21			8.92			8.67			8.36	70
22			8.94			8.72			8.44	70
23			8.96			8.75			8.50	70
24			8.97			8.78			8.56	70
25			9.00			8.81			8.61	70
26			9.03			8.85			8.64	70
27			9.06			8.86			8.69	70

## **Methodology**

The Archery Canada Technical Leadership was interested in understanding age appropriate scores for athletes that went on to be successful at the World Championship and Olympic level in recurve competition.

Several changes made by World Archery to both age categories and competition rounds made comparing historical scores challenging. However, Australian James Park, developed a table that allows for the comparison of different competitions rounds. The table assigns a universal value (ISV) for scores shot at several distances and target sizes. The ISV value can then be used to compare scores shot in different competition formats. This provided the opportunity to compare historical scores shot by elite archers at a variety of ages.

Initially historical scores for the top 4 male finishers from both the 2012 London and 2016 Rio Olympics were converted to ISV values and plotted against the athlete age. Korean archers were removed from the data as they appear sporadically in international competition until late in their careers. Results from Crispin Duenas, Zach Garrett and Colin Klimitchek were added. These athletes were used as they have demonstrated success at an international level, the scores were readily available, and the training methodologies are aligned to what is available in Canada. After reviewing over 600 data points, 160 were used to create the men's PRT.

In July of 2017 Archery Canada did a comparison of the PRT with the Performance Funnel (PF) in use by the Netherlands. The approach taken in the PF utilized athlete development age, rather

than chronological age and assumed a first podium result at age 22.3. The PF referenced a set of data that was different from that used to construct the PRT, with only 40% of the data points overlapping. Despite a moderately different approach significant similarity existed between the performance funnel and the PRT which appears to validate the work done by both parties.

In the fall of 2017 Archery Canada started work on PRT 2.0. The primary goal was to develop a PRT for women. Due to the strong correlation between the Netherlands PF and the Canadian PRT, the data used in the Netherlands PF was leveraged to construct the women's PRT. To provide enough data for female athletes age 14-16, US archers Miranda Leek and Mackenzie Brown were added.

In addition to constructing the women's PRT, alterations were made to the men's PRT to remove an anomalous dip in score at age 24. PRT(-1) and PRT(-2) were also added to both the women's and men's PRT. PRT (-1) and PRT( -2) are approximately one and two standard deviations from the PRT, with some adjustments made to provide a logical development path. In principle PRT (-1) still represents scores shot by elite athletes as they progressed. PRT(-2 ) was added to provide a reference for development level athletes. The women's score at later ages was also increased, as the wide range of scores in the data produced a value below what is competitive at an elite level.