Appendix A:

S1. Time distribution of the sports program

week	Day	Pke	Mbe	K&M flash	Group	Rest	
						BE	BG
1	Sunday	●			3	60 sec	2 min
	Tuesday	●			3	60 sec	2 min
	Wednesday		●		3	60 sec	2 min
	Thursday	●			3	60 sec	3 min
2	Sunday		●		3	60 sec	3 min
	Tuesday	●			3	60 sec	3 min
	Wednesday		●		3	60 sec	2 min
	Thursday		●		3	60 sec	2 min
3	Sunday	●			4	65 sec	3 min
	Tuesday	●			4	65 sec	2 min
	Wednesday	●	●		3	65 sec	3 min
	Thursday	●	●		3	65 sec	3 min
4	Sunday	●	●		4	70 sec	3 min
	Tuesday			●	3	70 sec	3 min
	Wednesday			●	3	70 sec	2 min
	Thursday			●	3	70 sec	2 min
5	Sunday			●	4	65 sec	2 min

	Tuesday				3	65 sec	3 min
	Wednesday				3	70 sec	2 min
	Thursday				4	60 sec	3 min
6	Sunday				4	60 sec	3 min
	Tuesday				3	70 sec	2 min
	Wednesday				3	70 sec	2 min
	Thursday				4	60 sec	3 min
7	Sunday				4	60 sec	3 min
	Tuesday				3	60 sec	3 min
	Wednesday				4	60 sec	3 min
	Thursday				4	65 sec	3 min
8	Sunday				3	65 sec	2 min
	Tuesday				3	65 sec	2 min
	Wednesday				4	65 sec	2 min
	Thursday				4	65 sec	2 min

Pke= perceptual-kinesthetic exercises; Mbe= motor balance exercises; K&M flash= perceptual-kinesthetic exercises& motor balance exercises; BE= Between Exercises; BG= Between Groups.

S2. The content, objectives and techniques used in the sports program

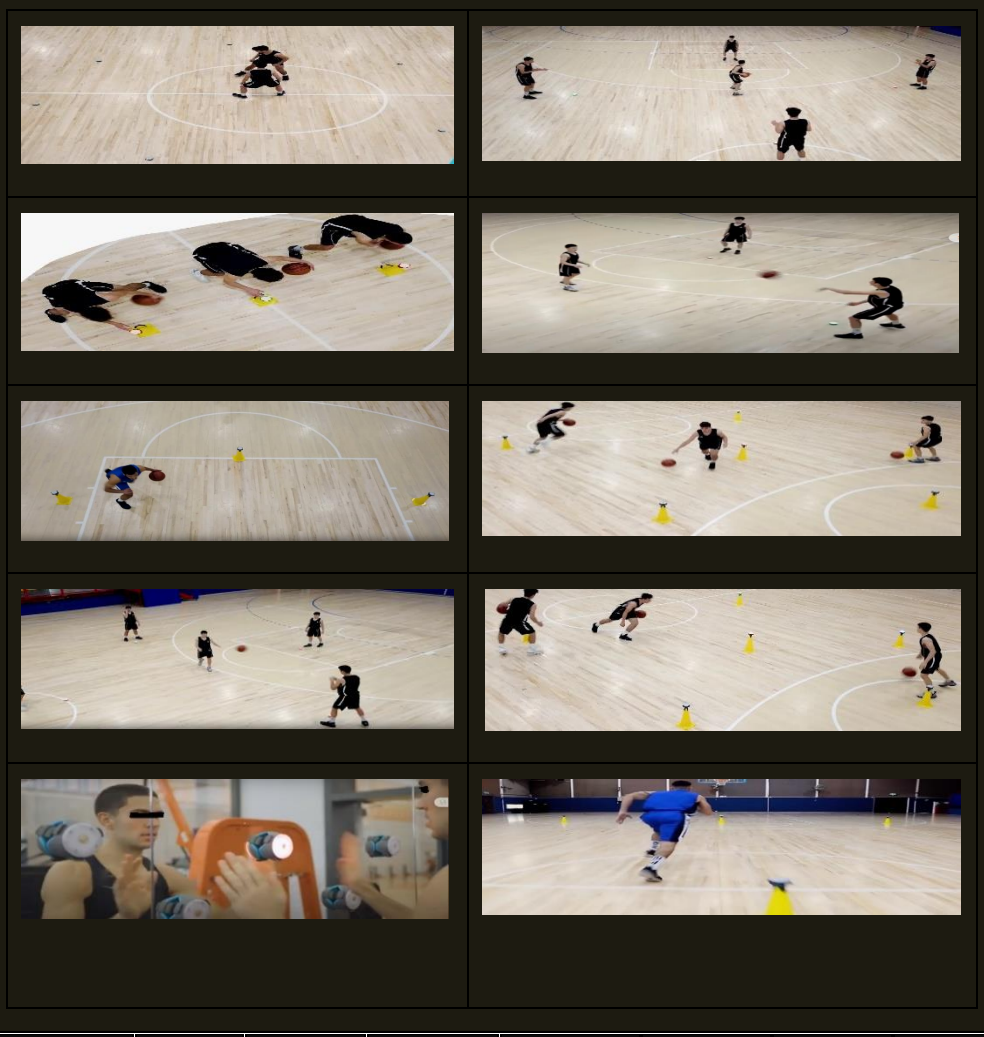
Weeks	1	2	3	4	5	6	7	8
Stages / Pregnancy	General Preparation Phase		Special Preparation Phase				Competition Preparation Phase	
Maximum			●			●	●	
High		●		●				●
minimum	●				●			
Weekly Time	320 min	400 min	480 min	400 min	320 min	480 min	480 min	400 min
Total Time	720 min		1680 min				880 min	
Total Programe Time	3280 min							

S3. The content, objectives and techniques used in the sports program

Weeks	Days	Warm Up	Flash Reflex Training				
Week 1	Sunday	Course of activity to warm up the body and the extensions	1	2	3	4	5
	Tuesday		11	12	13	14	11
	Wednesday		6	2	4	5	8
	Thursday		13	14	1	20	3
Week 2	Sunday		5	6	7	8	9
	Tuesday		7	8	9	10	1
	Wednesday		15	16	17	18	19
	Thursday		3	4	5	6	7
Week 3	Sunday		9	10	11	12	13
	Tuesday		1	2	3	4	5
	Wednesday		13	14	1	2	3
	Thursday		7	8	9	10	11
Week 4	Sunday		13	14	1	2	3
	Tuesday		5	6	7	8	9
	Wednesday		6	8	9	10	11
	Thursday		11	12	13	14	1
Week 5	Sunday		3	4	5	6	7
	Tuesday		9	10	11	12	13
	Wednesday		15	16	17	18	19
	Thursday		1	2	3	4	5
Week 6	Sunday		7	8	9	10	11
	Tuesday		10	20	1	2	3
	Wednesday		15	16	17	18	19
	Thursday		5	6	7	8	9
Week 7	Sunday		11	12	13	14	20
	Tuesday		3	4	5	6	7
	Wednesday		15	16	17	18	19
	Thursday		9	10	11	12	13
Week 8	Sunday		1	2	3	4	20
	Tuesday		15	16	13	14	19
	Wednesday		17	18	1	2	3
	Thursday		**7**	**8**	**9**	**13**	14

Between(B),

S4. shows Model of a Flash Reflex using the training program

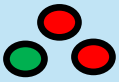
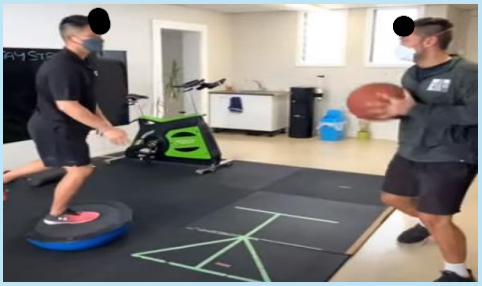
Illustration and formation of pregnancy cycle		
Training distance	**10/15/20 meters**	
The number of times the speed of direction change	**Once**	
direction change angle	**30 degrees**	
The number of straight lines for running	**1/2(lines)** **Multiple**	
Variations	 **/ a ball without ball**	

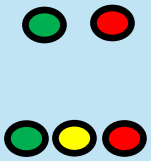
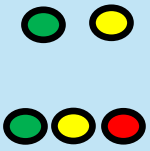
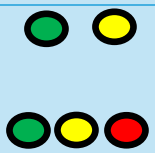
The aim of the training	Physical	skill	visual	mixed	complex	total	notes	
	*	*	*		*			

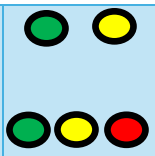
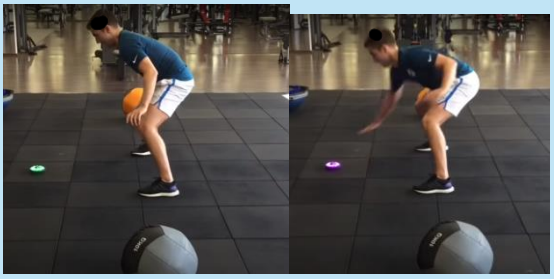
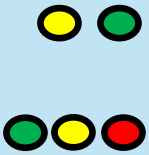
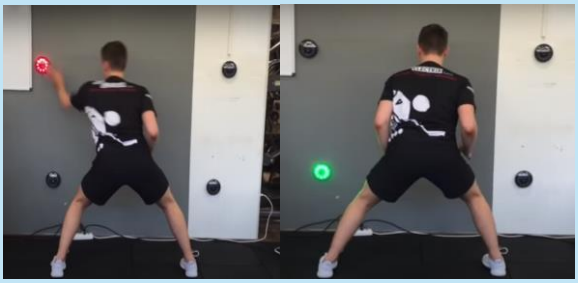
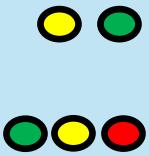
Pregnancy cycle formation	performance time	Repetition	Rest every now and then	number of groups	time for each group	Rest between groups	Total training time	Rest before starting a new training	notes
	3 min(max)	3 r	20 sec	3 r	50 sec	1 min	3.7 min	1 min	

Cognitive map of the performance sequence		R	B	G	M	O	K	Y
		1		2				
The number of colors	2	*		*				
Flash Reflex time and shape	Average	*						
	fast			*	*	*		
	Full	*			*	*	*	
	partial			*				*

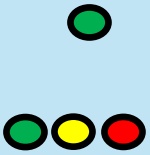
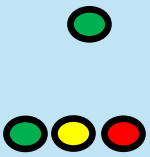
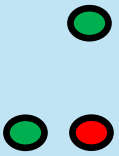
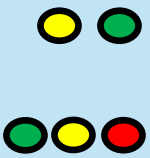
S5. Flash Reflex Exercise

No.	Exercise	repetition	Illuminations	Time	Comfort
1		3 3 3 2	without  	45 s 30 s 30 s 30 s	1 min
2		3 3	without 	40 s 30 s	1min
3		3 3	without 	40 s 30 s	1 min

4		3 3		30 s 30 s	1min
5		3		35 s	1 min
6		3	without 	30 s 30 s 30 s	1 min
7		3		40 s	1.5 min
8		3		30 s	1 min

9		3		35 s 30s	1 min
10		3		35 s	45 s
11		3 2		30 s 30 s	45 s 1 min
12		3 3		30 s 30 s	45 s 45 s

13				30 s 30 s	40 s 45 s
14		3 3		30 s 30 s	45 s 45 s
15		3 3		30 s 30 s	40 s 45 s
16		3 3		30 s 30 s	45 s 45 s

17		3 3		30 s 30 s	45 s 45 s
18		3 3		30 s 30 s	45 s 45 s
19		3 3		40 s 40 s	45 s 45 s
20		3 3		**60 s** **60 s**	45 s 45 s

Appendix B:

Skillful neuroplasticity tests :

Lay-up shooting:

The flash reflex was employed to evaluate the neuroplasticity test of the lay-up shooting skill. A series of bulbs are positioned along the three-point line, as illustrated in Figure 3. The player assumes a position beneath the basketball hoop, holding a ball, and upon the illumination of any of the five bulbs, they execute a dribbling maneuver towards the lit bulb. The player then presses the bulb to deactivate it before proceeding to perform a lay-up shot. This sequence is repeated until all the lights have been illuminated. The lamps are activated twice throughout the test. The player's performance time is recorded, along with the successful deactivation of 10 lights and the execution of 10 shots at the basket. Each successful shot is assigned a value of two points, resulting in the test score being determined by the player's performance time and the accumulated points.

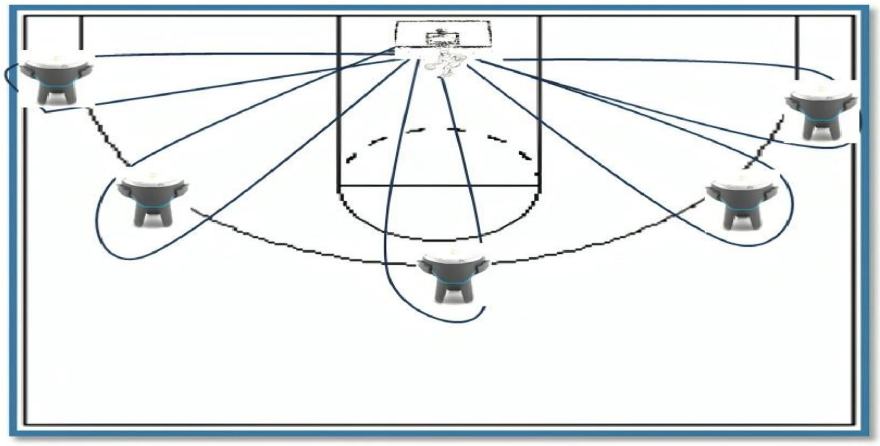


Figure 3. *Lay-up shooting test*

Shooting from both short and long distances :

The test involves a setup with a series of lights accompanied by a ball rack, as depicted in *Figure 4.* The player positions themselves beneath the basketball hoop, holding the ball. When any of the five lights illuminate, the player swiftly moves towards the lit bulb. They then press the bulb to deactivate it before proceeding to execute a double or triple shot, depending on the location of the illuminated bulb. This process is repeated until all the lights have been illuminated. The LEDs are activated twice during the test. The player's performance time is recorded, along with the successful deactivation of 10 lights and the execution of 10 shots at the basket. Each successful shot on the three-point line is awarded three points, while shots on the two-hander line earn two points, and shots on the free-throw line earn one point. The test time is calculated from the moment the first bulb is illuminated until the completion of lighting the last bulb and executing the final shot.

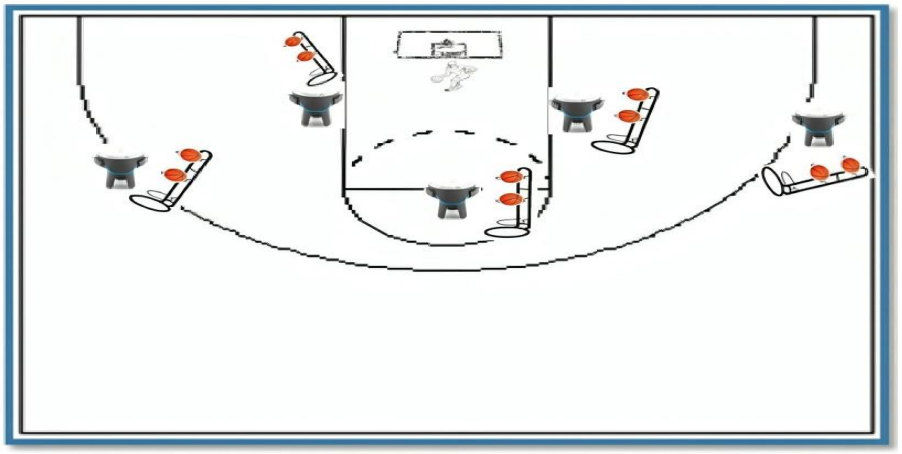


Figure 4. Shooting from both short and long distance test

Attention and dual motor perception:

As shown in *Figure 5,* the test consists of a series of lights placed at heights of 120 cm and 180 cm on ten stands. In the middle of the forbidden region is where the player is standing. The player must move quickly to the lit bulb and press it to deactivate it once any of the lights come on. Continue doing this until every light is illuminated. During the test, the LEDs are only turned on once. The test time is computed from the moment the first bulb is illuminated until the last bulb is lit, in addition to recording the player's performance time and deactivating all 10 lights.

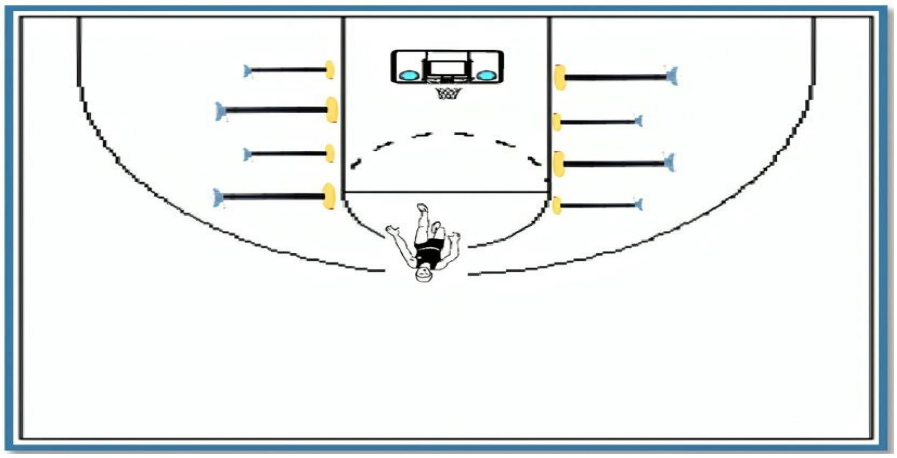


Figure 5. Attention and dual motor perception test