

What Do the French Do Better?*Horowitz, I¹; Zeller, L²; Liel-Cohen, N²; Ilija, R²; Kobal, S²**¹Ben Gurion University, Beer-Sheva, Israel; ²Soroka University Medical Center, Beer-Sheva, Israel*

Background: Cardiovascular remodeling is an expected phenomenon in professional soccer players, who are considered high dynamic athletes. However, national characteristics like genetics, race, frequency and intensity of training can influence the degree of cardiac adaptation. Using echocardiography we assessed professional Israeli soccer players (PISPs) who participate in the Premier League and compared our findings to data from professional French soccer players (PFSPs) from the same division.

Results: Eighteen active Israeli soccer players underwent an echocardiographic study. Echocardiographic values above the upper normal limits were absent in the all PISPs population except for one participant who had LV end-diastolic diameter of 58mm. The echocardiographic results comparing PISPs and PFSCs are presented in the table. Average LV mass and LV mass index were significantly higher among PFSPs. LV hypertrophy defined as an LV mass index $>116 \text{ g/m}^2$ was present in 1/18 (6%) of the PISPs and in 13/29 (44%) of the PFSPs.

Conclusions: Cardiac remodeling identified by echocardiographic values above the normal limits is rare among professional Israeli soccer players. The considerable differences between Israeli and non-Israeli players involved the same sport discipline may be explained, at least partially, by differences in the intensity of the training. This point must be proven in future studies.

Parameters	PIPS (mean \pm SD)	PFPS (mean \pm SD)	ρ
Age (years)	25.6 \pm 4.5	25.3 \pm 3.8	0.92
Posterior wall (mm)	9 \pm 1.3	10 \pm 1.6	0.59
Septal/posterior wall ratio	1.0 \pm 0.2	1.0 \pm 0.1	1
Left ventricular end-diastolic diameter (mm)	50.8 \pm 3.3	51.9 \pm 3.9	0.71
Left ventricular end-systolic diameter (mm)	30.4 \pm 2.8	35.7 \pm 4.5	0.09
Left ventricular mass (gr)	161.9 \pm 33.8	230.5 \pm 47.6	< 0.0001
LV mass/body surface area (gr/m ²)	84.6 \pm 16.7	119 \pm 22.7	< 0.0001