

## Exceptional genetic and clinical findings among sperm donors conceived offspring: A Single-Center Retrospective Study

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### INTRODUCTION

Sperm banks (SB) receive notifications regarding exceptional findings among sperm donors conceived offspring (DCO). These reports require careful investigation of possible inheritance from sperm donors (SD) and pose optional impact on other women and offspring from same donor. This study aimed to examine DCO exceptional notifications in single SB.

### METHODS

This retrospective observational study included exceptional findings' notifications between January 1, 2020, and December 31, 2024. Exceptional findings (detected either prenatally, neonatally, or during childhood) were divided to genetic vs clinical according to definite genetic diagnosis in DCO. Then we assessed the cases of genetic inheritance confirmation in SD.

### RESULTS

34 notifications were included during study period - six (17.6%) and 28 (82.4%) from Israeli and foreign SD, respectively. Genetic diagnosis was performed in 2 (33.3%) DCO from Israeli SD compared to 10 (35.7%) conceived from foreign SD. Confirmed SD inheritance was diagnosed in 1 Israeli SD and 4 foreign SDs. Clinical findings without a genetic diagnosis were reported in 4 DCO (66.6%) from Israeli SDs, compared to 18 cases (64.3%) in foreign SDs (table1).

### CONCLUSION

Genetic exceptional findings among DCO represent a third of total notifications, and SD inheritance was confirmed in 40-50% of cases. Clinical findings, which represent 2 thirds of findings, represent a challenge due to lack of definite genetic test to exclude SD related inheritance.

**TABLE 1** – Exceptional findings' notifications among DCO

DCO exceptional findings – 34				
	Israeli SD - 6		Foreign SD - 28	
	Genetic <sup>1</sup>	Clinical <sup>2</sup>	Genetic <sup>1</sup>	Clinical <sup>2</sup>
DCO <sup>3</sup>	2	4	10	18
SD <sup>4</sup>	1		4	

<sup>1</sup> Genetic - genetic diagnosis such as monogenic disease, CMA finding.

<sup>2</sup> Clinical - anatomical anomaly or clinical pathology without definite genetic diagnosis.

<sup>3</sup> DCO - donor conceived offspring.

<sup>4</sup> SD - sperm donor.

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