Supplementary Materials

Table S1. Ovarian Tissue Cryopreservation.

Publication	Year	Country	Sample Size study	Number of patients	Average Age at procedure	Patients undergoing cryopreservation	Cancer/ Disease	Exposure	Average time to conception	Live births	Unsuccessful outcomes
Dunlop et al.	2016	Scotland	1	1	32	1	Wilms Tumor	Chemo	6.7 months	1	0
Dittrich et al.	2015	Germany	20	20	30.5	20	Variety NS	Chemo, Rad	NS	4	1 miscarriage
Sigismondi et al.	2015	Italy	96	67	27	20	Variety NS	Chemo	NA	NA (outcome was ovarian sufficiency)	0
Oktay et al.	2015	USA	2	2	23	2	Hemophagocytic Lymphocytosis, Non-Hodgkin Lymphoma	Chemo, Rad	120 months	1	2 unsuccessful IVFs
Babayev et al.	2013	USA	37	28	13.9	28	Variety NS	Chemo, Rad	NA	NA (outcome was non-cancer indications	0
Asadi Azarbaijani et al.	2015	Scandinavian Countries	34	34	18	34	General Hematologic Malignancies	Chemo	NA	NA (investigation of ovarian histopathological changes)	0
Rodriguez-Wallberg et al.	2016	Scandinavian Countries	1443	1443	28	46	Breast Cancer, Hodgkin Lymphoma	Chemo	NS	17	1 miscarriage
Rodriguez-Wallberg et al.	2015	Scandinavian Countries	1	1	23	1	Ewing's Sarcoma	Rad	168 months	1	0
Poirot et al.	2019	France	418	418	6.9	418	Variety NS	Chemo, Rad	NA	0 (none returned for pregnancy attempts)	84 deaths due to malignancy

Rodriguez-Wallberg et al.	2019	Sweden	1254	852	27.4	421	Variety NS	Chemo	78 months	1	3 miscarriages
Oktay et al.	2019	USA	3	3	NS	3	NS	Chemo	NA	NA (Outcome: successful follicle growth in 10-14 weeks post transplantation, and embryo development)	0
Peek et al.	2014	The Netherlands	1	1	10	1	Ewing's Sarcoma	Chemo, Rad	NA	NA (Outcome: high follicle viability and full ovarian function)	0
Dorez et al.	2013	France	1	1	30	1	Hodgkin Lymphoma	Chemo, Rad	NS	NS (Outcome: Success in single-site laporoscopy withour complications)	0
Lambertini et al.	2018	Belgium	156	156	31	72	Breast cancer	NS	55 months	1 (only 2 patients received transplantation)	0
Dolmans et. al	2021	Various European centers	285	285	29.3	285	Variety	Chemo, Rad	NS	95 live births	38 miscarriages
Mean			250.1	220.8	23.6	90.2					
Median			34	28	27.2	20					
Mode			NA	NA	23	NA					
Range			1442	1442	25.1	420					
Total			3752	3312		1353					

Key: Chemo = Chemotherapy; Rad = Radiation therapy, NS = Not Specified, NA = Not Applicable

Table S2. Oocyte Cryopreservation

Publication	Year	Country	Sample Size study	Number of patients	Average Age at procedure	Patients undergoing cryopreservation	Cancer/ Disease	Exposure	Average time to conception	Live births	Unsuccessful outcomes
Hashimoto et al.	2017	Japan	62	46	37	8	Breast Cancer	Chemo	NS	6 (Not specified to oocyte)	20% miscarriage rate
Perrin et al.	2016	France	1	1	29	1	Hodgkin Lymphoma	Chemo	22 months	1	0
Blumenfeld et al.	2015	Israel	474	217	27	188	Variety NS	Chemo	24 months	164	1 unsuccessful conception
Sigismondi et al.	2015	Italy	96	67	27	47	Variety NS	Chemo	NA	0 (NA, outcome was ovarian sufficiency)	5 patients unsuccessful conception
Moraes et al.	2019	Brazil	187	23	35.13	23	Variety NS	chemo	NS	2	2 miscarriages, 85% no pregnancy
Chien et al.	2017	USA	82	34	36.1	16	Breast Cancer	Chemo	NS	NS	NS
Rodriguez-Wallberg et al.	2019	Sweden	1254	852	27.4	335	Variety NS	Chemo	78 months	8	8 miscarriages (NS to oocyte or embryo implantation)
Lambertini et al.	2018	Belgium	156	156	31	29	Breast Cancer	NS	NA	NA (None returned for embryo transfer)	0
Mean			289	174.5	31.2	80.8					
Median			126	56.5	30	26					
Mode			NA	NA	27	NA					
Range			1253	851	10	334					
Total			2312	1396		647					

Key: Chemo = Chemotherapy; Rad = Radiation therapy, NS = Not Specified, NA = Not Applicable

Table S3. Embryonic Tissue Cryopreservation

Publication	Year	Country	Sample Size study	Number of patients	Average Age at procedure	Patients undergoing cryopreservation	Cancer/ Disease	Exposure	Average time to conception	Live births	Unsuccessful outcomes
Peyser et al.	2018	USA	1	1	33	1	Anaplastic Astrocytoma	Chemo, Rad	1 month	2	0
Hashimoto et al.	2017	Japan	62	46	37	26	Breast Cancer	Chemo, Horm	NS	6 (Not specified to embryo)	20% miscarriage rate
Chien et al.	2017	USA	82	34	36.1	20	Breast cancer	Chemo	32.8 months	2 (twins)	5 unsuccessful conceptions
Rodriguez-Wallberg et al.	2019	Sweden	1254	852	27.4	220	Variety NS	Chemo	78 months	8	8 miscarriages (NS to oocyte or embryo implantation)
Chambon et al.	2016	France	36	28	15.5	28	Variety NS	Chemo	NA	NA (none returned for pregnancy attempts)	0
Goeckenjan et al.	2013	Germany	1	1	37	1	Breast Cancer	Chemo	NA	NA (outcome: 92% of oocytes retrieved after OT transplantation were able to be fertilized)	8% of retrieved oocytes were not able to be fertilized
Mean			239.3	160.3	31	49.3					
Median			49	31	34.6	23					
Mode			NA	NA	37	NA					
Range			1253	851	21.5	219					
Total			1436	962		296					

Key: Chemo = Chemotherapy; Rad = Radiation therapy, Horm = Hormonal Therapy, NS = Not Specified, NA = Not Applicable

Note: All averages were taken. Procedures overlapped in some studies, but outcomes were only matched to those patients who were undergoing the specific procedure as indicated by the title of the table. All patients included in these tables are cancer patients (malignancies).

PRISMA 2020 Main Checklist

TITLE			
Title	1	Identify the report as a systematic review.	page 1
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist	
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	page 2
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	page 2
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	page 2-3
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	page 3
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	page 3
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	page 3

Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	page 3
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	page 3
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	page 3
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	page 3
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	page 4
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item 5)).	page 4

	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	n/a
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	page 4
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	page 4
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	n/a
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	n/a
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	n/a
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	page 3
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	page 4
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	page 4
Study characteristics	17	Cite each included study and present its characteristics.	supplement

Risk of bias in studies	18	Present assessments of risk of bias for each included study.	page 3
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	supplement
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	page 4-5
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	n/a
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	n/a
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	n/a
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	n/a
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	page 3
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	page 5-6
	23b	Discuss any limitations of the evidence included in the review.	page 6
	23c	Discuss any limitations of the review processes used.	page 6

	23d	Discuss implications of the results for practice, policy, and future research.	page 6-7
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	not registered
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	n/a
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	n/a
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	page 12
Competing interests	26	Declare any competing interests of review authors.	page 12
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	supplement

PRIMSA Abstract Checklist

TITLE			
Title	1	Identify the report as a systematic review.	Yes
BACKGROUND			
Objectives	2	Provide an explicit statement of the main objective(s) or question(s) the review addresses.	Yes
METHODS			
Eligibility criteria	3	Specify the inclusion and exclusion criteria for the review.	Yes
Information sources	4	Specify the information sources (e.g. databases, registers) used to identify studies and the date when each was last searched.	Yes
Risk of bias	5	Specify the methods used to assess risk of bias in the included studies.	Yes
Synthesis of results	6	Specify the methods used to present and synthesize results.	Yes
RESULTS			
Included studies	7	Give the total number of included studies and participants and summarise relevant characteristics of studies.	Yes
Synthesis of results	8	Present results for main outcomes, preferably indicating the number of included studies and participants for each. If meta-analysis was done, report the summary estimate and confidence/credible interval. If comparing groups, indicate the direction of the effect (i.e. which group is favoured).	Yes
DISCUSSION			
Limitations of evidence	9	Provide a brief summary of the limitations of the evidence included in the review (e.g. study risk of bias, inconsistency and imprecision).	No
Interpretation	10	Provide a general interpretation of the results and important implications.	Yes
OTHER			
Funding	11	Specify the primary source of funding for the review.	No
Registration	12	Provide the register name and registration number.	No