

Additional file 1. Search strategies

SEARCH STRATEGY: 18 AND 19 AUGUST 2026

TITLE: Iron Therapy for Heavy Menstrual Bleeding Related Iron Deficiency Anaemia: Efficacy, Tolerability and Evidence Gaps for Women with Diabetes Mellitus. A Systematic Review

Searches were run under the registered protocol (PROSPERO CRD420261449093). Each strategy combines heavy menstrual bleeding (line 1), iron deficiency and iron deficiency anaemia (line 2), iron therapy (line 4) and a filter for randomised and controlled trials (line 6), limited to records from 2000 onwards, with no language restriction. Sources searched: MEDLINE and Embase (Ovid), Scopus (Elsevier), Web of Science Core Collection (Clarivate), CINAHL Ultimate (EBSCOhost), Cochrane CENTRAL (Cochrane Library) and Google Scholar.

DATABASE / DATE OF SEARCH	PLATFORM	SEARCH TERMS
MEDLINE: 1946 to 14 August 2026 / 18 August 2026	OVID	
1		exp Menorrhagia/ OR exp Uterine Hemorrhage/ OR (hypermenorrh* OR AUB OR menorrhagia OR menometrorrhagia OR metrorrhagia OR menorrhagic OR HMB) OR ("heavy menstrual bleeding" OR "heavy menstrual loss" OR "heavy periods" OR "heavy menses" OR "heavy menstrual flow" OR "prolonged menstruation" OR "profuse menstruation" OR "excessive menstruation" OR "uterine haemorrhage" OR "menstrual blood loss") OR (excessive adj3 menstrual adj3 bleed*) OR (excessive adj3 menstrual adj3 loss) OR (excessive adj3 uterine adj3 bleed*) OR (abnormal adj3 uterine adj3 bleed*) OR (abnormal adj3 menstrual adj3 bleed*) OR (prolonged adj3 menstru*) OR (profuse adj3 menstru*) OR (uterine bleed*).mp.
2		exp Iron Deficiencies/ OR exp Anemia, Iron-Deficiency/ OR ("iron deficiency anaemia" OR "iron deficiency anemia" OR "iron deficient anaemia" OR "iron deficient anemia" OR "iron-deficiency anaemia" OR "iron-deficiency anemia" OR "iron depletion anaemia" OR "iron depletion anemia" OR "sideropenic anaemia" OR "sideropenic anemia" OR IDA OR "anaemia due to iron deficiency" OR "anemia due to iron deficiency" OR ((iron adj2 deficien* adj2 an?emi*) OR (iron adj2 depletion adj2 an?emi*) OR (sideropenic adj3 an?emi*) OR (iron adj3 deficien* OR "iron deficiency " OR "iron deficiency" OR "iron deficiencies" OR "iron deficient" OR "iron depletion" OR "iron depletion syndrome" OR "heavy menstrual bleeding-related iron deficiency anaemia"))).mp.
3		1 AND 2
4		exp Iron/ or exp Iron Compounds/ or ((IV adj2 iron) or IVIS or (intravenous adj2 iron) or (parenteral adj2 iron) or (iron adj2 infusion*) or (ferric adj2 carboxymaltose) or (iron adj2 sucrose) or (ferric adj2 derisomaltose) or (iron adj2 isomaltoside) or (iron adj2 dextran) or (ferric adj2 gluconate) or ferumoxytol or "ferric citrate" or "ferric pyrophosphate" or "sodium ferric gluconate").mp. or (oral adj2 iron).mp. or (iron adj2 supplement*).mp. or (iron adj2 replacement adj2 therap*).mp. or (ferrous adj2 sulfate).mp. or (ferrous adj2 sulphate).mp. or (ferrous adj2 fumarate).mp. or (ferrous adj2 gluconate).mp. or (iron adj2 polymaltose).mp.
5		3 AND 4
6		(randomi?ed OR randomly OR randomised OR randomization OR randomisation OR "random allocation" OR "random allocation" OR "randomly allocated" OR "allocated randomly" OR "assigned randomly" OR "random assignment" OR

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		"randomly assigned" OR quasi-randomi?ed OR "controlled trial*" OR "clinical trial*" OR parallel-group OR "parallel group" OR cluster-randomi?ed OR "cluster randomised" OR "cluster trial*" OR cross-over OR crossover OR multi-arm OR multiarm OR multi-arm OR factorial).mp.
7		5 AND 6
8		Limit 7 to 2000 to date
EMBASE: 1974 to 13 August 2026 / 18 August 2026	OVID	
1		exp Menorrhagia/ OR exp Uterine Hemorrhage/ OR (hypermenorrh* OR AUB OR menorrhagia OR menometrorrhagia OR metrorrhagia OR menorrhagic OR HMB) OR ("heavy menstrual bleeding" OR "heavy menstrual loss" OR "heavy periods" OR "heavy menses" OR "heavy menstrual flow" OR "prolonged menstruation" OR "profuse menstruation" OR "excessive menstruation" OR "uterine haemorrhage" OR "menstrual blood loss") OR (excessive adj3 menstrual adj3 bleed*) OR (excessive adj3 menstrual adj3 loss) OR (excessive adj3 uterine adj3 bleed*) OR (abnormal adj3 uterine adj3 bleed*) OR (abnormal adj3 menstrual adj3 bleed*) OR (prolonged adj3 menstru*) OR (profuse adj3 menstru*) OR (uterine bleed*).mp.
2		exp Iron Deficiencies/ OR exp Anemia, Iron-Deficiency/ OR ("iron deficiency anaemia" OR "iron deficiency anemia" OR "iron deficient anaemia" OR "iron deficient anemia" OR "iron-deficiency anaemia" OR "iron-deficiency anemia" OR "iron depletion anaemia" OR "iron depletion anemia" OR "sideropenic anaemia" OR "sideropenic anemia" OR IDA OR "anaemia due to iron deficiency" OR "anemia due to iron deficiency" OR (iron adj2 deficien* adj2 (anaemia OR anemia)) OR (iron adj2 depletion adj2 (anaemia OR anemia)) OR (sideropenic adj3 (anaemia OR anemia)) OR "iron deficiency" OR "iron deficiencies" OR "iron deficient" OR "iron depletion" OR "iron depletion syndrome" OR "heavy menstrual bleeding-related iron deficiency anaemia").mp.
3		1 AND 2
4		exp Iron/ or exp Iron Compounds/ or ((IV adj2 iron) or IVIS or (intravenous adj2 iron) or (parenteral adj2 iron) or (iron adj2 infusion*) or (ferric adj2 carboxymaltose) or (iron adj2 sucrose) or (ferric adj2 derisomaltose) or (iron adj2 isomaltoside) or (iron adj2 dextran) or (ferric adj2 gluconate) or ferumoxytol or "ferric citrate" or "ferric pyrophosphate" or "sodium ferric gluconate").mp. or (oral adj2 iron).mp. or (iron adj2 supplement*).mp. or (iron adj2 replacement adj2 therap*).mp. or (ferrous adj2 sulfate).mp. or (ferrous adj2 sulphate).mp. or (ferrous adj2 fumarate).mp. or (ferrous adj2 gluconate).mp. or (iron adj2 polymaltose).mp.
5		3 AND 4
6		(randomi?ed OR randomly OR randomised OR randomization OR randomisation OR "random allocation" OR "random allocation" OR "randomly allocated" OR "allocated randomly" OR "assigned randomly" OR "random assignment" OR "randomly assigned" OR quasi-randomi?ed OR "controlled trial*" OR "clinical trial*" OR parallel-group OR "parallel group" OR cluster-randomi?ed OR "cluster randomised" OR "cluster trial*" OR cross-over OR crossover OR multi-arm OR multiarm OR multi-arm OR factorial).mp.
7		5 AND 6
8		Limit 7 to 2000 to date

DATABASE / DATE OF SEARCH	PLATFORM	SEARCH TERMS
SCOPUS / 18 August 2026	ELSEVIER	
1		TITLE-ABS-KEY(hypermenorrh* OR AUB OR menorrhagia OR menometrorrhagia OR metrorrhagia OR menorrhagic OR HMB OR "heavy menstrual bleeding" OR "heavy menstrual loss" OR "heavy periods" OR "heavy menses" OR "heavy menstrual flow" OR "prolonged menstruation" OR "profuse menstruation" OR "excessive menstruation" OR "uterine haemorrhage" OR "menstrual blood loss" OR (excessive W/3 menstrual W/3 bleed*) OR (excessive W/3 menstrual W/3 loss) OR (excessive W/3 uterine W/3 bleed*) OR (abnormal W/3 uterine W/3 bleed*) OR (abnormal W/3 menstrual W/3 bleed*) OR (prolonged W/3 menstru*) OR (profuse W/3 menstru*) OR (uterine W/1 bleed*))
2		TITLE-ABS-KEY("iron deficiency anaemia" OR "iron deficiency anemia" OR "iron deficient anaemia" OR "iron deficient anemia" OR "iron-deficiency anaemia" OR "iron-deficiency anemia" OR "iron depletion anaemia" OR "iron depletion anemia" OR "sideropenic anaemia" OR "sideropenic anemia" OR IDA OR "anaemia due to iron deficiency" OR "anemia due to iron deficiency" OR (iron W/2 deficien* W/2 an?emi*) OR (iron W/2 depletion W/2 an?emi*) OR (sideropenic W/3 an?emi*) OR (iron W/3 deficien*) OR "iron deficiency" OR "iron deficiencies" OR "iron deficient" OR "iron depletion" OR "iron depletion syndrome" OR "heavy menstrual bleeding-related iron deficiency anaemia")
3		1 AND 2
4		TITLE-ABS-KEY((IV W/2 iron) OR IVIS OR (intravenous W/2 iron) OR (parenteral W/2 iron) OR (iron W/2 infusion*) OR (ferric W/2 carboxymaltose) OR (iron W/2 sucrose) OR (ferric W/2 derisomaltose) OR (iron W/2 isomaltoside) OR (iron W/2 dextran) OR (ferric W/2 gluconate) OR ferumoxytol OR "ferric citrate" OR "ferric pyrophosphate" OR "sodium ferric gluconate" OR (oral W/2 iron) OR (iron W/2 supplement*) OR (iron W/2 replacement W/2 therap*) OR (ferrous W/2 sulfate) OR (ferrous W/2 sulphate) OR (ferrous W/2 fumarate) OR (ferrous W/2 gluconate) OR (iron W/2 polymaltose))
5		3 AND 4
6		TITLE-ABS-KEY(randomi?ed OR randomly OR randomised OR randomization OR randomisation OR "random allocation" OR "randomly allocated" OR "allocated randomly" OR "assigned randomly" OR "random assignment" OR "randomly assigned" OR quasi-randomi?ed OR "controlled trial*" OR "clinical trial*" OR "parallel-group" OR "parallel group" OR cluster-randomi?ed OR "cluster randomised" OR "cluster trial*" OR cross-over OR crossover OR multi-arm OR multiarm OR factorial)
7		5 AND 6
8		Limit 7 to 2000 to date
WEB OF SCIENCE CORE COLLECTION / 18 August 2026	CLARIVATE	
1		TS=(hypermenorrh* OR AUB OR menorrhagia OR menometrorrhagia OR metrorrhagia OR menorrhagic OR HMB OR "heavy menstrual bleeding" OR "heavy menstrual loss" OR "heavy periods" OR "heavy menses" OR "heavy menstrual flow" OR "prolonged menstruation" OR "profuse menstruation" OR "excessive menstruation" OR "uterine haemorrhage" OR "uterine hemorrhage" OR "menstrual blood loss" OR (excessive NEAR/3 menstrual NEAR/3 bleed*) OR (excessive NEAR/3 menstrual NEAR/3 loss) OR (excessive NEAR/3 uterine NEAR/3 bleed*) OR (abnormal NEAR/3 uterine

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		NEAR/3 bleed*) OR (abnormal NEAR/3 menstrual NEAR/3 bleed*) OR (prolonged NEAR/3 menstru*) OR (profuse NEAR/3 menstru*) OR (uterine NEAR/1 bleed*))
2		TS=(("iron deficiency anaemia" OR "iron deficiency anemia" OR "iron deficient anaemia" OR "iron deficient anemia" OR "iron-deficiency anaemia" OR "iron-deficiency anemia" OR "iron depletion anaemia" OR "iron depletion anemia" OR "sideropenic anaemia" OR "sideropenic anemia" OR IDA OR "anaemia due to iron deficiency" OR "anemia due to iron deficiency" OR (iron NEAR/2 deficien* NEAR/2 an?emi*) OR (iron NEAR/2 depletion NEAR/2 an?emi*) OR (sideropenic NEAR/3 an?emi*) OR (iron NEAR/3 deficien*) OR "iron deficiency" OR "iron deficiencies" OR "iron deficient" OR "iron depletion" OR "iron depletion syndrome" OR "heavy menstrual bleeding-related iron deficiency anaemia"))
3		1 AND 2
4		TS=((IV NEAR/2 iron) OR IVIS OR (intravenous NEAR/2 iron) OR (parenteral NEAR/2 iron) OR (iron NEAR/2 infusion*) OR (ferric NEAR/2 carboxymaltose) OR (iron NEAR/2 sucrose) OR (ferric NEAR/2 derisomaltose) OR (iron NEAR/2 isomaltoside) OR (iron NEAR/2 dextran) OR (ferric NEAR/2 gluconate) OR ferumoxytol OR "ferric citrate" OR "ferric pyrophosphate" OR "sodium ferric gluconate" OR (oral NEAR/2 iron) OR (iron NEAR/2 supplement*) OR (iron NEAR/2 replacement NEAR/2 therap*) OR (ferrous NEAR/2 sulfate) OR (ferrous NEAR/2 sulphate) OR (ferrous NEAR/2 fumarate) OR (ferrous NEAR/2 gluconate) OR (iron NEAR/2 polymaltose))
5		3 AND 4
6		TS=(randomi?ed OR randomly OR randomised OR randomization OR randomisation OR "random allocation" OR "randomly allocated" OR "allocated randomly" OR "assigned randomly" OR "random assignment" OR "randomly assigned" OR quasi-randomi?ed OR "controlled trial*" OR "clinical trial*" OR parallel-group OR "parallel group" OR cluster-randomi?ed OR "cluster randomised" OR "cluster trial*" OR cross-over OR crossover OR multi-arm OR multiarm OR factorial)
7		5 AND 6
8		Limit 7 to 2000 to date
CINAHL ULTIMATE / 18 August 2026	EBSCOHOST	
1		XB (MH "Menorrhagia+" OR MH "Uterine Hemorrhage+" OR TX (hypermenorrh* OR AUB OR menorrhagia OR menometrorrhagia OR metrorrhagia OR menorrhagic OR HMB OR "heavy menstrual bleeding" OR "heavy menstrual loss" OR "heavy periods" OR "heavy menses" OR "heavy menstrual flow" OR "prolonged menstruation" OR "profuse menstruation" OR "excessive menstruation" OR "uterine haemorrhage" OR "uterine hemorrhage" OR "menstrual blood loss" OR (excessive N3 menstrual N3 bleed*) OR (excessive N3 menstrual N3 loss) OR (excessive N3 uterine N3 bleed*) OR (abnormal N3 uterine N3 bleed*) OR (abnormal N3 menstrual N3 bleed*) OR (prolonged N3 menstru*) OR (profuse N3 menstru*) OR (uterine N1 bleed*)))
2		(MH "Iron Deficiencies+" OR MH "Anemia, Iron-Deficiency+" OR TX ("iron deficiency anaemia" OR "iron deficiency anemia" OR "iron deficient anaemia" OR "iron deficient anemia" OR "iron-deficiency anaemia" OR "iron-deficiency anemia" OR "iron depletion anaemia" OR "iron depletion anemia" OR "sideropenic anaemia" OR "sideropenic anemia"

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		OR IDA OR "anaemia due to iron deficiency" OR "anemia due to iron deficiency" OR (iron N2 deficien* N2 an?emi*) OR (iron N2 depletion N2 an?emi*) OR (sideropenic N3 an?emi*) OR (iron N3 deficien*) OR "iron deficiency" OR "iron deficiencies" OR "iron deficient" OR "iron depletion" OR "iron depletion syndrome" OR "heavy menstrual bleeding-related iron deficiency anaemia" OR "heavy menstrual bleeding-related iron deficiency anemia"))
3		1 AND 2
4		(MH "Iron+" OR MH "Iron Compounds+" OR TX ((IV N2 iron) OR IVIS OR (intravenous N2 iron) OR (parenteral N2 iron) OR (iron N2 infusion*) OR (ferric N2 carboxymaltose) OR (iron N2 sucrose) OR (ferric N2 derisomaltose) OR (iron N2 isomaltoside) OR (iron N2 dextran) OR (ferric N2 gluconate) OR ferumoxytol OR "ferric citrate" OR "ferric pyrophosphate" OR "sodium ferric gluconate" OR (oral N2 iron) OR (iron N2 supplement*) OR (iron N2 replacement N2 therap*) OR (ferrous N2 sulfate) OR (ferrous N2 sulphate) OR (ferrous N2 fumarate) OR (ferrous N2 gluconate) OR (iron N2 polymaltose)))
5		3 AND 4
6		TX (randomi?ed OR randomly OR randomised OR randomization OR randomisation OR "random allocation" OR "randomly allocated" OR "allocated randomly" OR "assigned randomly" OR "random assignment" OR "randomly assigned" OR quasi-randomi?ed OR "controlled trial*" OR "clinical trial*" OR parallel-group OR "parallel group" OR cluster-randomi?ed OR "cluster randomised" OR "cluster trial*" OR cross-over OR crossover OR multi-arm OR multiarm OR factorial)
7		5 AND 6
8		Limit 7 to 2000 to date
COCHRANE CENTRAL / 19 August 2026	COCHRANE LIBRARY	
1		(Menorrhagia OR Uterine Hemorrhage OR hypermenorrh* OR AUB OR menorrhagia OR menometrorrhagia OR metrorrhagia OR menorrhagic OR HMB) OR ("heavy menstrual bleeding" OR "heavy menstrual loss" OR "heavy periods" OR "heavy menses" OR "heavy menstrual flow" OR "prolonged menstruation" OR "profuse menstruation" OR "excessive menstruation" OR "uterine haemorrhage" OR "menstrual blood loss") OR ((excessive near/3 menstrual near/3 bleed*) OR (excessive near/3 menstrual near/3 loss)) OR ((excessive near/3 uterine near/3 bleed*) OR (abnormal near/3 uterine near/3 bleed*)) OR ((abnormal near/3 menstrual near/3 bleed*) OR (prolonged near/3 menstru*) OR (profuse near/3 menstru*)) OR (uterine bleed*)
2		[mh "Iron-Deficiency Anemia"] OR (iron deficiency anaemia OR iron deficiency anemia OR iron deficient anaemia OR iron deficient anemia OR iron-deficiency anaemia OR iron-deficiency anemia OR iron depletion anaemia OR iron depletion anemia OR sideropenic anaemia OR sideropenic anemia OR IDA OR anaemia due to iron deficiency OR anemia due to iron deficiency) OR (iron NEAR/2 deficien* NEAR/2 an?emi*) OR (iron NEAR/2 depletion NEAR/2 an?emi*) OR (sideropenic NEAR/3 an?emi*) OR (iron NEAR/3 deficien*) OR ("iron deficiency" OR "iron deficiencies" OR "iron deficient" OR "iron depletion" OR "iron depletion syndrome" OR "heavy menstrual bleeding-related iron deficiency anaemia");ti,ab,kw
3		1 AND 2

DATABASE / DATE OF SEARCH	PLATFORM	SEARCH TERMS
4		[mh "Iron"] OR [mh "Iron Compounds"] OR ((IV NEAR/2 iron) OR IVIS OR (intravenous NEAR/2 iron) OR (parenteral NEAR/2 iron) OR (iron NEAR/2 infusion*) OR (ferric NEAR/2 carboxymaltose) OR (iron NEAR/2 sucrose) OR (ferric NEAR/2 derisomaltose) OR (iron NEAR/2 isomaltoside) OR (iron NEAR/2 dextran) OR (ferric NEAR/2 gluconate) OR ferumoxytol OR "ferric citrate" OR "ferric pyrophosphate" OR "sodium ferric gluconate" OR (oral NEAR/2 iron) OR (iron NEAR/2 supplement*) OR (iron NEAR/2 replacement NEAR/2 therap*) OR (ferrous NEAR/2 sulfate) OR (ferrous NEAR/2 sulphate) OR (ferrous NEAR/2 fumarate) OR (ferrous NEAR/2 gluconate) OR (iron NEAR/2 polymaltose)):ti,ab,kw
5		3 AND 4
6		(randomi* OR randomly OR randomised OR randomization OR randomisation OR "random allocation" OR "randomly allocated" OR "allocated randomly" OR "assigned randomly" OR "random assignment" OR "randomly assigned" OR quasi-randomi* OR "controlled trial*" OR "clinical trial*" OR "parallel-group" OR "parallel group" OR "cluster-randomi*" OR "cluster randomised" OR "cluster trial*" OR cross-over OR crossover OR multi-arm OR multiarm OR factorial):ti,ab,kw
7		5 AND 6
8		Limit 7 to 2000 to date

DATABASE / DATE OF SEARCH	PLATFORM	SEARCH TERMS
GOOGLE SCHOLAR / 19 August 2026	GOOGLE	
1		("heavy menstrual bleeding" OR "heavy menstrual loss" OR "heavy periods" OR "heavy menses" OR "heavy menstrual flow" OR menorrhagia OR menometrorrhagia OR metrorrhagia OR hyper menorrhagia OR "abnormal uterine bleeding" OR "uterine haemorrhage" OR "uterine hemorrhage" OR "menstrual blood loss" OR "prolonged menstruation" OR "profuse menstruation" OR "excessive menstruation") AND ("iron deficient* anaemia" OR "iron deficient* anemia" OR "iron deficient* anaemia" OR "iron deficient* anemia" OR "iron-deficiency anaemia" OR "iron-deficiency anemia" OR "iron depletion anaemia" OR "iron depletion anemia" OR "sideropenic anaemia" OR "sideropenic anemia" OR IDA OR "anaemia due to iron deficiency" OR "anemia due to iron deficiency" OR "iron deficient*" OR "iron depletion" OR "iron depletion syndrome" OR "heavy menstrual bleeding-related iron deficiency anaemia" OR "heavy menstrual bleeding-related iron deficiency anemia") AND ("intravenous iron" OR "IV iron" OR "parenteral iron" OR "iron infusion" OR "ferric carboxymaltose" OR "iron sucrose" OR "ferric derisomaltose" OR "iron isomaltoside" OR "iron dextran" OR "ferric gluconate" OR ferumoxytol OR "ferric citrate" OR "ferric pyrophosphate" OR "sodium ferric gluconate" OR "oral iron" OR "iron supplement*" OR "iron replacement" OR "iron replacement therapy" OR "ferrous sulfate" OR "ferrous sulphate" OR "ferrous fumarate" OR "ferrous gluconate" OR "iron polymaltose" OR "iron therapy" OR "iron treatment") AND (randomized OR randomised OR "randomized controlled trial" OR "randomised controlled trial" OR "randomized trial" OR "randomised trial" OR "controlled trial" OR "clinical trial" OR "random allocation" OR "randomly assigned" OR "randomly allocated" OR "parallel group" OR "parallel-group" OR "cluster randomized" OR "cluster randomised" OR crossover OR cross-over OR factorial OR multi-arm OR multiarm)
2		Limit 1 to 2000 to date
3		Results sorted by relevance; the 330 most relevant records were screened
TOTAL RETRIEVED: 736		
DUPLICATES REMOVED: 178		
RECORDS REMAINING FOR SCREENING: 558		