



Appendix

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Lipoedema – diagnosis, treatment, and experiences, rapport nr 327e (2021)

Appendix 2 Excluded studies

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Studies with high risk of bias	page 2-3
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This list consists of articles that were considered for inclusion in SBU's assessment but excluded because they were:

- judged to have a high risk of bias, or
- were not considered relevant to the review question after they were read in full text.

Studies with high risk of bias

This part consists of articles considered relevant, but of high risk of bias.

Reference	Risk of bias
Bauer AT, von Lukowicz D, Lossagk K, Aitzetmueller M, Moog P, Cerny M, et al. New Insights on Lipedema: The Enigmatic Disease of the Peripheral Fat. <i>Plastic & Reconstructive Surgery</i> . 2019;144(6):1475-84.	High (risk of selection bias, information bias, detection bias and reporting bias)
Baumgartner A, Hueppe M, Schmeller W. Long-term benefit of liposuction in patients with lipoedema: a follow-up study after an average of 4 and 8 years. <i>British Journal of Dermatology</i> 2016;174:1061-7	High (risk of selection bias, information bias, attrition bias, detection bias and reporting bias)
Baumgartner A, Hueppe M, Meier-Vollrath I, Schmeller W. Improvements in patients with lipedema 4, 8 and 12 years after liposuction. 2021;1:152-9	High (risk of selection bias, information bias, attrition bias, detection bias and reporting bias)
Dadras M, Mallinger PJ, Corterier CC, Theodosiadi S, Ghods M. Liposuction in the Treatment of Lipedema: A Longitudinal Study. <i>Archives of Plastic Surgery</i> . 2017;44(4):324-31.	High (risk of selection bias, information bias, attrition bias, detection bias and reporting bias)
Fink JM, Schreiner L, Marjanovic G, Erbacher G, Seifert GJ, Foeldi M, et al. Leg Volume in Patients with Lipoedema following Bariatric Surgery. <i>Visceral Medicine</i> . 2020.	High (risk of selection bias, information bias, attrition bias, detection bias and reporting bias)
Rapprich S, Baum S, Kaak I, Kottmann T, Podda M. Treatment of lipoedema using liposuction: Results of our own surveys. <i>Phlebologie</i> . 2015;44(3):121-32.	High (risk of selection bias, information bias, detection bias, reporting bias and conflict of interest)
Rapprich S, Dingler A, Podda M. Liposuction is an effective treatment for lipedema-results of a study with 25 patients. <i>Journal der Deutschen Dermatologischen Gesellschaft</i> . 2011;9(1):33-40.	High (risk of selection bias, information bias, attrition bias, detection bias and reporting bias)
Schmeller W, Hueppe M, Meier-Vollrath I. Tumescant liposuction in lipoedema yields good long-term results. <i>British Journal of Dermatology</i> . 2012;166(1):161-8.	High (risk of selection bias, information bias, attrition bias, detection bias and reporting bias)

Witte T, Dadras M, Heck FC, Heck M, Habermalz B, Welss S, et al. Water-jet-assisted liposuction for the treatment of lipedema: Standardized treatment protocol and results of 63 patients. 2020;1(9):1637-44.	High (risk of selection bias, information bias, detection bias and reporting bias)
Wollina U, Heinig B. Tumescant microcannular (laser-assisted) liposuction in painful lipedema. The European Journal of Aesthetic medicine and Dermatology. 2012;2(2):56-69.	High (risk of selection bias, information bias, detection bias)
Wollina U, Heinig B. Treatment of lipedema by low-volume micro-cannular liposuction in tumescant anesthesia: Results in 111 patients. Dermatologic Therapy. 2019;32(2):e12820.	High (risk of selection bias, information bias, attrition bias, detection bias and reporting bias)

Excluded studies

Articles that when reviewed in full text were considered to be irrelevant to the review question.

Reference	Reason for exclusion
Abdel-Hamid M. Controversial legal situation surrounding assumption of the costs of liposuction for lipedema. Journal fur Asthetische Chirurgie 2017;10:79-84.	Language
Al-Ghadban S, Cromer W, Allen M, Ussery C, Badowski M, Harris D, et al. Dilated Blood and Lymphatic Microvessels, Angiogenesis, Increased Macrophages, and Adipocyte Hypertrophy in Lipedema Thigh Skin and Fat Tissue. J Obes 2019;2019:8747461.	Not relevant PIRO
Al-Ghadban S, Diaz ZT, Singer HJ, Mert KB, Bunnell BA. Increase in Leptin and PPAR-gamma Gene Expression in Lipedema Adipocytes Differentiated in vitro from Adipose-Derived Stem Cells. Cells 2020;9:12.	Not relevant PIRO
Alwardat N, Di Renzo L, Alwardat M, Romano L, De Santis GL, Gualtieri P, et al. The effect of lipedema on health-related quality of life and psychological status: a narrative review of the literature. Eating & Weight Disorders: EWD 2019;6:06.	Not relevant study design
Amann-Vesti BR, Franzeck UK, Bollinger A. Microlymphatic aneurysms in patients with lipedema. Lymphology 2001;34:170-5.	Not relevant PIRO

Reference	Reason for exclusion
Amato ACM, Amato FCM, Benitti DA, Amato LGL. Development of a questionnaire and screening model for lipedema. <i>Jornal Vascular Brasileiro</i> 2020;19:1-7.	Not relevant PIRO
Angst F, Benz T, Lehmann S, Wagner S, Simmen BR, Sandor PS, et al. Extended overview of the longitudinal pain-depression association: A comparison of six cohorts treated for specific chronic pain conditions. 2020;1:508-16.	Not relevant PIRO
Angst F, Lehmann S, Aeschlimann A, Sandor PS, Wagner S. Cross-sectional validity and specificity of comprehensive measurement in lymphedema and lipedema of the lower extremity: a comparison of five outcome instruments. 2020;1:245.	Not relevant PIRO
Atan T, Bahar-Ozdemir Y. The Effects of Complete Decongestive Therapy or Intermittent Pneumatic Compression Therapy or Exercise Only in the Treatment of Severe Lipedema: A Randomized Controlled Trial. 2021;1:86-95.	Not relevant PIRO
Augustin M, Conde Montero E, Hagenstrom K, Herberger K, Blome C. Validation of a short-form of the Freiburg Life Quality Assessment for lymphoedema (FLQA-LS) instrument. <i>British Journal of Dermatology</i> 2018;179:1329-33.	Not relevant PIRO
Balinski A, Grace S, Avila C, Bradbury J. The effectiveness of manual lymphatic drainage and low level laser in the treatment of a client with lipedema: an N-of-1 trial. <i>Journal of the Australian Traditional-Medicine Society</i> 2018;24:98-100.	Not relevant PICO
Bauer AT, D VL, Lossagk K, Hopfner U, Kirsch M, Moog P, et al. Adipose stem cells from lipedema and control adipose tissue respond differently to adipogenic stimulation in vitro. <i>Plastic & Reconstructive Surgery</i> 2019;6:06.	Not relevant PIRO
Beltran K, Herbst KL. Differentiating lipedema and Dercum's disease. <i>International Journal of Obesity</i> 2017;41:240-45.	Not relevant PIRO
Bilancini S, Lucchi M, Tucci S, Eleuteri P. Functional lymphatic alterations in patients suffering from lipedema. <i>Angiology</i> 1995;46:333-9.	Not relevant study design
Birkballe S, Jensen MR, Noerregaard S, Gottrup F, Karlsmark T. Can tissue dielectric constant measurement aid in differentiating lymphoedema from lipoedema in women with swollen legs? <i>British Journal of Dermatology</i> 2014;170:96-102.	Not relevant PIRO

Reference	Reason for exclusion
Blome C, Augustin M, Heyer K, Knofel J, Cornelsen H, Purwins S, et al. Evaluation of patient-relevant outcomes of lymphedema and lipedema treatment: development and validation of a new benefit tool. <i>European Journal of Vascular & Endovascular Surgery</i> 2014;47:100-7.	Not relevant study design
Blome C, Sandner A, Herberger K, Augustin M. Lymphedema- The long way to diagnosis and therapy. <i>Vasa - Journal of Vascular Diseases</i> 2013;42:363-69.	Not relevant PIRO
Brautigam P, Foldi E, Schaiper I, Krause T, Vanscheidt W, Moser E. Analysis of lymphatic drainage in various forms of leg edema using two compartment lymphoscintigraphy. <i>Lymphology</i> 1998;31:43-55.	Not relevant PIRO
Bräutigam P, Vanscheidt W, Földi E, Krause T, Moser E. Involvement of the lymphatics in primary non-lymphogenic edema of the leg: Examinations with the two-compartment lymphoscintigraphy. <i>Hautarzt</i> 1997;48:556-67.	Language
Cambria RA, Gloviczki P, Naessens JM, Wahner HW. Noninvasive evaluation of the lymphatic system with lymphoscintigraphy: a prospective, semiquantitative analysis in 386 extremities. <i>Journal of Vascular Surgery</i> 1993;18:773-82.	Not relevant PIRO
Campisi CC, Ryan M, di Summa P, Scarabosio A, Campisi CS, Campisi C. Inclusion of targeted skin products in the pre-surgical treatment regimen of peripheral lymphedema & lipedema. <i>Lymphology</i> 2019;52:194-201.	Not relevant PICO
Canning C, Bartholomew JR. Lipedema. <i>Vascular Medicine</i> 2018;23:88-90.	Not relevant study design
Cellina M, Gibelli D, Soresina M, Menozzi A, Martinenghi C, Panzeri M, et al. Non-contrast MR Lymphography of lipedema of the lower extremities. 2020;1:115-24.	Not relevant PIRO
Cherif-Zahar K, Bensenane-Hasbelaoui S. <i>Liposculpture of the lower extremities using a tourniquet: Springer Berlin Heidelberg; 2006 2006. 133-40</i>	Not relevant PICO
Child AH, Gordon KD, Sharpe P, Brice G, Ostergaard P, Jeffery S, et al. Lipedema: an inherited condition. <i>American Journal of Medical Genetics. Part A</i> 2010;152:970-6.	Not relevant PIRO
Ciocon JO, Galindo-Ciocon D, Galindo DJ. Raised leg exercises for leg edema in the elderly. <i>Angiology</i> 1995;46:19-25.	Not relevant PICO

Reference	Reason for exclusion
Couto JA, Maclellan RA, Greene AK. Management of Vascular Anomalies and Related Conditions Using Suction-Assisted Tissue Removal. <i>Plastic & Reconstructive Surgery</i> 2015;136:511e-4e.	Not relevant PICO
Crescenzi R, Donahue PMC, Petersen KJ, Garza M, Patel N, Lee C, et al. Upper and Lower Extremity Measurement of Tissue Sodium and Fat Content in Patients with Lipedema. 2020;1:907-15.	Not relevant PIRO
Crescenzi R, Donahue PMC, Weakley S, Garza M, Donahue MJ, Herbst KL. Lipedema and Dercum's Disease: A New Application of Bioimpedance. <i>Lymphatic Research & Biology</i> 2019;17:671-79.	Not relevant PIRO
Crescenzi R, Marton A, Donahue PMC, Mahany HB, Lants SK, Wang P, et al. Tissue Sodium Content is Elevated in the Skin and Subcutaneous Adipose Tissue in Women with Lipedema. <i>Obesity</i> 2018;26:310-317.	Not relevant PIRO
Davies E. Lipoedema: a patient's perspective. <i>British Journal of Community Nursing</i> 2012:S16-S16.	Not relevant PIRO
Dean SM, Valenti E, Hock K, Leffler J, Compston A, Abraham WT. The clinical characteristics of lower extremity lymphedema in 440 patients. <i>Journal of Vascular Surgery</i> 2020;25:25.	Not relevant PIRO
Di Renzo L, Gualtieri P, Alwardat N, De Santis G, Zomparelli S, Romano L, et al. The role of IL-6 gene polymorphisms in the risk of lipedema. <i>European Review for Medical and Pharmacological Sciences</i> 2020;24:3236-44.	Not relevant PIRO
Dietzel R, Reissauer A, Jahr S, Calafiore D, Armbrecht G. Body composition in lipoedema of the legs using dual-energy X-ray absorptiometry: a case-control study. <i>British Journal of Dermatology</i> 2015;173:594-6.	Not relevant PIRO
Dimakakos PB, Stefanopoulos T, Antoniadis P, Antoniou A, Gouliamos A, Rizos D. MRI and ultrasonographic findings in the investigation of lymphedema and lipedema. <i>International Surgery</i> 1997;82:411-6.	Not relevant PIRO
Dudek J, Białaszek W, Ostaszewski P, Dudek JE, Białaszek W, Ostaszewski P. Quality of life in women with lipoedema: a contextual behavioral approach. <i>Quality of Life Research</i> 2016;25:401-08.	Not relevant PIRO
Dudek JE, Białaszek W, Gabriel M. Quality of life, its factors, and sociodemographic characteristics of Polish women with lipedema. 2021;1:27.	Not relevant PIRO

Reference	Reason for exclusion
Dudek JE, Bialaszek W, Ostaszewski P, Smidt T. Depression and appearance-related distress in functioning with lipedema. <i>Psychology Health & Medicine</i> 2018;23:846-53.	Not relevant study design
Düewell S, Hagspiel KD, Zuber J, von Schulthess GK, Bollinger A, Fuchs WA. Swollen lower extremity: role of MR imaging. <i>Radiology</i> 1992;184:227-31.	Not relevant PIRO
Duygu E, Bakar Y, Keser I. An Important Tool in Lymphedema Management: Validation of Turkish Version of the Patient Benefit Index-Lymphedema. <i>Lymphatic Research & Biology</i> 2020;18:49-55.	Not relevant PICO
Elio C, Guaitolini E, Paccasassi S, Rosati N, Cavezzi A. Application of microcurrents of bioresonance and transdermal delivery of active principles in lymphedema and lipedema of the lower limbs: a pilot study. <i>Giornale Italiano di Dermatologia e Venereologia</i> 2014;149:643-7.	Not relevant PIRO
Elwell R, Heal D, Lister L. Impact of JOBST® Elvarex® knee and elbow functional zones on quality of life. <i>British Journal of Community Nursing</i> 2018;23:S58-S67.	Not relevant PICO
Erbacher G, Bertsch T. Lipoedema and Pain: What is the role of the psyche? Results of a pilot study with 150 patients with Lipoedema. <i>Phlebologie</i> 2020;49:305-316.	Not relevant PIRO
Felmerer G, Stylianaki A, Hollmén M, Ströbel P, Stepniewski A, Wang A, et al. Increased levels of VEGF-C and macrophage infiltration in lipedema patients without changes in lymphatic vascular morphology. <i>Scientific Reports</i> 2020;10:10947.	Not relevant PIRO
Felmerer G, Stylianaki A, Hägerling R, Wang A, Ströbel P, Hollmén M, et al. Adipose Tissue Hypertrophy, An Aberrant Biochemical Profile and Distinct Gene Expression in Lipedema. <i>Journal of Surgical Research</i> 2020;253:294-303.	Not relevant PIRO
Fetzer A, Fetzer S. Early lipoedema diagnosis and the RCGP e-learning course...Royal College of General Practitioners. <i>British Journal of Community Nursing</i> 2015:S22-8.	Not relevant study design
Fetzer A, Wise C. Living with lipoedema: reviewing different self-management techniques. <i>British Journal of Community Nursing</i> 2015:S14, S16-9.	Not relevant study design
Fife CE, Maus EA, Carter MJ. Clinical management extra. Lipedema: a frequently misdiagnosed and misunderstood fatty deposition syndrome. <i>Advances in Skin & Wound Care</i> 2010;23:81-94.	Not relevant study design

Reference	Reason for exclusion
Foldi M, Idiazabal G. The role of operative management of varicose veins in patients with lymphedema and/or lipedema of the legs. <i>Lymphology</i> 2000;33:167-71.	Not relevant PICO
Forner-Cordero I, Szolnoky G, Forner-Cordero A, Kemeny L. Lipedema: an overview of its clinical manifestations, diagnosis and treatment of the disproportional fatty deposition syndrome - systematic review. <i>Clinical Obesity</i> 2012;2:86-95.	Not relevant study design
Gensior MHL, Cornely M. [Pain in lipoedema, fat in lipoedema and its consequences: results of a patient survey based on a pain questionnaire]. <i>Handchirurgie, Mikrochirurgie, Plastische Chirurgie</i> 2019;51:249-54.	Language
Ghods M, Georgiou I, Schmidt J, Kruppa P. Disease progression and comorbidities in lipedema patients: A 10-year retrospective analysis. <i>Dermatologic Therapy</i> 2020;33:e14534.	Not relevant PIRO
Gould DJ, El-Sabawi B, Goel P, Badash I, Colletti P, Patel KM. Uncovering Lymphatic Transport Abnormalities in Patients with Primary Lipedema. <i>Journal of Reconstructive Microsurgery</i> 2020;36:136-41.	Not relevant PIRO
Green T, Mason W. Chronic oedemas: identification and referral pathways. <i>British Journal of Community Nursing</i> 2006;11:S8-6.	Not relevant study design
Green T. Inelastic compression devices for chronic oedema management. <i>Journal of Community Nursing</i> 2019;33:26-32.	Not relevant study design
Greene A, Meskell P. The impact of lower limb chronic oedema on patients' quality of life. <i>International Wound Journal</i> 2017;14:561-68.	Not relevant PIRO
Greene AK, Sudduth CL. Lower extremity lymphatic function predicted by body mass index: a lymphoscintigraphic study of obesity and lipedema. <i>Int J Obes (Lond)</i> 2021;45:369-73.	Not relevant PIRO
Hadjis NS, Carr DH, Banks L, Pflug JJ. The role of CT in the diagnosis of primary lymphedema of the lower limb. <i>AJR. American Journal of Roentgenology</i> 1985;144:361-4.	Not relevant PIRO
Halk AB, Damstra RJ. First Dutch guidelines on lipedema using the international classification of functioning, disability and health. <i>Phlebology</i> 2017;32:152-159.	Not relevant study design
Harris J. Lymphoedema nurse... Joanne Harris. <i>Lymphoedema Nurse</i> , Whittington Health, London, England, Mark Allen Holdings Limited; 2015.	Not relevant study design

Reference	Reason for exclusion
Harwood CA, Bull RH, Evans J, Mortimer PS. Lymphatic and venous function in lipoedema. <i>British Journal of Dermatology</i> 1996;134:1-6.	Not relevant PIRO
Herberger K, Blome C, Heyer K, Ellis F, Munter KC, Augustin M. Quality of life in patients with primary and secondary lymphedema in the community. <i>Wound Repair & Regeneration</i> 2017;25:466-73.	Not relevant PIRO
Herberger K, Blome C, Sandner A, Altheide F, Heyer K, Munter KC, et al. Quality of care of patients with chronic lymphoedema in Germany. <i>Dermatology</i> 2013;226:238-46.	Not relevant PIRO
Herbst KL, Rutledge T. Pilot study: rapidly cycling hypobaric pressure improves pain after 5 days in adipositis dolorosa. <i>Journal of pain research</i> 2010;3:147-53.	Not relevant PICO
Herbst KL, Ussery C, Eekema A. Pilot study: whole body manual subcutaneous adipose tissue (SAT) therapy improved pain and SAT structure in women with lipedema. <i>Hormone Molecular Biology & Clinical Investigation</i> 2017;33:20.	Not relevant PICO
Hidding JT, Viehoff PB, Beurskens CHG, van Laarhoven HWM, Nijhuis-van der Sanden MWG, van der Wees PJ. Measurement Properties of Instruments for Measuring of Lymphedema: Systematic Review. <i>Physical Therapy</i> 2016;96:1965-81.	Not relevant study design
Hirsch T, Schleinitz J, Marshall M, Faerber G. Is the differential diagnosis of lipoedema by means of high-resolution ultrasonography possible? <i>Phlebologie</i> 2018;47:182-87.	Not relevant PIRO
Ibarra M, Eekema A, Ussery C, Neuhardt D, Garby K, Herbst KL. Subcutaneous adipose tissue therapy reduces fat by dual X-ray absorptiometry scan and improves tissue structure by ultrasound in women with lipoedema and Dercum disease. <i>Clinical Obesity</i> 2018;8:398-406.	Not relevant PIRO
Iker E, Mayfield CK, Gould DJ, Patel KM. Characterizing Lower Extremity Lymphedema and Lipedema with Cutaneous Ultrasonography and an Objective Computer-Assisted Measurement of Dermal Echogenicity. <i>Lymphatic Research & Biology</i> 2019;17:525-30.	Not relevant PIRO
Ketterings C. Lipodystrophy and its treatment. <i>Annals of Plastic Surgery</i> 1988;21:536-43.	Not relevant PIRO
Lee N, Pugh S, Cooper R. Haddenham easywrap as part of self-management in lymphoedema and lipoedema: The patient perspective. <i>British Journal of Community Nursing</i> 2018;23:S50-S57.	Not relevant study design

Reference	Reason for exclusion
Leibaschoff GH, Coll LR, Desimone JG. Noninvasive assessment of the effectiveness of cellasene in patients with edematous fibrosclerotic panniculopathy (cellulitis): A double-blind prospective study. <i>International Journal of Cosmetic Surgery and Aesthetic Dermatology</i> 2001;3:265-73.	Not relevant PIRO
Lohrmann C, Foeldi E, Langer M. MR imaging of the lymphatic system in patients with lipedema and lipo-lymphedema. <i>Microvascular Research</i> 2009;77:335-9.	Not relevant PIRO
MacEwan I. Let's talk lipoedema. <i>Journal of Community Nursing</i> 2017;31:20-20.	Not relevant study design
Monnin-Delhom ED, Gallix BP, Achard C, Bruel JM, Janbon C. High resolution unenhanced computed tomography in patients with swollen legs. <i>Lymphology</i> 2002;35:121-8.	Not relevant PIRO
Münch D. Water jet-assisted liposuction for treatment of lipoedema: Experiences, results and comparison with tumescent liposuction. <i>Journal fur Asthetische Chirurgie</i> 2017;10:71-8.	Language
Naouri M, Samimi M, Atlan M, Perrodeau E, Vallin C, Zakine G, et al. High-resolution cutaneous ultrasonography to differentiate lipoedema from lymphoedema. <i>British Journal of Dermatology</i> 2010;163:296-301.	Not relevant PIRO
Nemes A, Kormanyos A, Domsik P, Kalapos A, Gyenes N, Kemeny L, et al. Are increased left ventricular strains compensatory effects in lipedema? Detailed analysis from the three-dimensional speckle-tracking echocardiographic MAGYAR-Path Study. 2020;1:470-75.	Not relevant PIRO
Nemes A, Kormanyos A, Domsik P, Kalapos A, Kemeny L, Forster T, et al. Left ventricular rotational mechanics differ between lipedema and lymphedema: Insights from the three-dimensional speckle tracking echocardiographic MAGYAR-path study. <i>Lymphology</i> 2018;51:102-8.	Not relevant PIRO
Nemes A, Kormanyos A, Domsik P, Kalapos A, Kemeny L, Szolnoky G. The impact of lower body compression garment on left ventricular rotational mechanics in patients with lipedema-Insights from the three-dimensional speckle tracking echocardiographic MAGYAR-Path Study. 2020;1:e12380.	Not relevant PIRO
Nemes A, Kovacs Z, Kormanyos A, Domsik P, Kalapos A, Piros GA, et al. The mitral annulus in lipedema: Insights from the three-dimensional speckle-tracking echocardiographic MAGYAR-Path Study. <i>Echocardiography</i> 2019;36:1482-91.	Not relevant PIRO

Reference	Reason for exclusion
Okhovat J-P, Alavi A. Lipedema. <i>International Journal of Lower Extremity Wounds</i> 2015;14:262-67.	Not relevant study design
Paolacci S, Precone V, Acquaviva F, Chiurazzi P, Fulcheri E, Pinelli M, et al. Genetics of lipedema: New perspectives on genetic research and molecular diagnoses. <i>European Review for Medical and Pharmacological Sciences</i> 2019;23:5581-94.	Not relevant study design
Partsch H, Stoberl C, Urbanek A, Wenzel-Hora BI. Clinical use of indirect lymphography in different forms of leg edema. <i>Lymphology</i> 1988;21:152-60.	Not relevant PIRO
Pereira de Godoy LM, Pereira de Godoy HJ, Pereira de Godoy Capeletto P, Guerreiro Godoy MF, Pereira de Godoy JM. Lipedema and the Evolution to Lymphedema With the Progression of Obesity. 2020;1:e11854.	Not relevant PIRO
Petersen KJ, Garza M, Donahue PMC, Harkins KD, Marton A, Titze J, et al. Neuroimaging of Cerebral Blood Flow and Sodium in Women with Lipedema. 2020;1:1292-1300.	Not relevant PIRO
Pfister C, Dawczynski H, Schingale FJ. Selenium Deficiency in Lymphedema and Lipedema-A Retrospective Cross-Sectional Study from a Specialized Clinic. 2020;1.	Not relevant PIRO
Pilat D. Managing lipoedema in a primary care setting. <i>Independent Nurse</i> 2017;2017:18-20.	Not relevant study design
Priglinger E, Wurzer C, Steffenhagen C, Maier J, Hofer V, Peterbauer A, et al. The adipose tissue-derived stromal vascular fraction cells from lipedema patients: Are they different? <i>Cytotherapy</i> 2017;19:849-60.	Not relevant PIRO
Rank BK, Wong GS. Lipoedema. <i>Australian & New Zealand Journal of Surgery</i> 1966;35:166-9.	Not relevant PIRO
Reich-Schupke S, Mohren E, Stucker M. [Survey on the diagnostics and therapy of patients with lymphedema and lipedema]. <i>Hautarzt</i> 2018;69:471-77.	Language
Río-González Á, Molina-Rueda F, Palacios-Ceña D, Alguacil-Diego IM. Living with lymphoedema-the perspective of cancer patients: a qualitative study. <i>Supportive Care in Cancer</i> 2018;26:2005-13.	Not relevant PIRO
Ritchie G, Broadhead R, Livesey J. The courage to compress. <i>Journal of Community Nursing</i> 2018;32:8-10.	Not relevant study design

Reference	Reason for exclusion
Rivolo M. Clinical innovation: the HOSIER system for compression assessment. <i>Wounds International</i> 2016;7:17-22.	Not relevant study design
Romeijn JRM, de Rooij MJM, Janssen L, Martens H. Exploration of Patient Characteristics and Quality of Life in Patients with Lipoedema Using a Survey. <i>Dermatology And Therapy</i> 2018;8:303-11.	Not relevant PIRO
Rudkin GH, Miller TA. Lipedema: a clinical entity distinct from lymphedema. <i>Plastic & Reconstructive Surgery</i> 1994;94:841-7; discussion 848-9.	Not relevant PIRO
Sattler G. Complications of liposuction. <i>Journal fur Asthetische Chirurgie</i> 2013;6:86-93.	Language
Schmeller W, Hüppe M, Meier-Vollrath I. Long-term results following liposuction in lipedema. <i>Lymphologie in Forschung und Praxis</i> 2010;14:69-80.	Not relevant study design
Schmeller W, Meier-Vollrath I. Describing pain in lipedema - An approach. <i>Lymphologie in Forschung und Praxis</i> 2008;12:7-11.	Language
Schneble N, Wetzker R, Wollina U. Lipedema - lack of evidence for the involvement of tyrosine kinases. <i>Journal of Biological Regulators & Homeostatic Agents</i> 2016;30:161-3.	Not relevant PIRO
Seo CA. You mean it's not my fault: learning about lipedema, a fat disorder. <i>Narrative Inquiry in Bioethics</i> 2014;4:E6-9.	Not relevant PIRO
Siems W, Grune T, Voss P, Brenke R. Anti-fibrosclerotic effects of shock wave therapy in lipedema and cellulite. <i>Biofactors</i> 2005;24:275-82.	Not relevant PICO
Singer A. Lipedema. <i>JAMA: The Journal of the American Medical Association</i> 1974;229:1420.	Not relevant study design
Slee J. Understanding the differences between lipoedema and lymphoedema. <i>Journal of Lymphoedema</i> 2013;8:7-8.	Not relevant study design
Spratt S. So, this is lipoedema. <i>Journal of Lymphoedema</i> 2008;3:66-67.	Not relevant PIRO
Stutz JJ, Krahl D. Water jet-assisted liposuction for patients with lipoedema: histologic and immunohistologic analysis of the aspirates of 30 lipoedema patients. <i>Aesthetic Plastic Surgery</i> 2009;33:153-62.	Not relevant PIRO
Suga H, Araki J, Aoi N, Kato H, Higashino T, Yoshimura K. Adipose tissue remodeling in lipedema: adipocyte death and concurrent regeneration. <i>Journal of Cutaneous Pathology</i> 2009;36:1293-8.	Not relevant PIRO

Reference	Reason for exclusion
Sugimoto D, Tamura Y, Takeno K, Kaga H, Someya Y, Kakehi S, et al. Clinical Features of Nonobese, Apparently Healthy, Japanese Men With Reduced Adipose Tissue Insulin Sensitivity. <i>Journal of Clinical Endocrinology & Metabolism</i> 2019;104:2325-33.	Not relevant PIRO
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