

EVIDENCE BASED STATEMENT

DOMAIN **12**, Statement **09**

TOPIC: “**Aquatic activity evidence in venous-lymphatic disease management.**”

SEARCH TERMS & SOURCES

((hydrotherapy) OR (balneotherapy)) AND ((venous) OR (lymphatic))

INCLUSION CRITERIA

- Lower limb only
- Systematic Reviews, Meta-Analysis, Reviews, RCT
- Publication < 10 years, only ENG

SEARCH RESULT BEFORE - AFTER SELECTION

31/7

PERTINENT LITERATURE NOT IDENTIFIED BY THE LITERATURE SEARCH

1. Menegatti E, Masiero S, Zamboni P, et al. Randomized controlled trial on Dryland And Thermal Aquatic standardized exercise protocol for chronic venous disease (DATA study). J Vasc Surg Venous Lymphat Disord. 2021 Sep;9(5):1226-1234.e2
2. Sharifi M, Bay RC, Karandish K, et al. The randomized, controlled ATLANTIS trial of aquatic therapy for chronic venous insufficiency. J Vasc Surg Venous Lymphat Disord. 2021 Jul;9(4):961-970
3. Stier-Jarmer M, Throner V, Kirschneck M, et al. Effects of Kneipp Therapy: A Systematic Review of Current Scientific Evidence (2000–2019) [Effekte der Kneipp-Therapie: Ein systematischer Review der aktuellen wissenschaftlichen Erkenntnisse (2000-2019)]. Complement Med Res. 2021;28(2):146-159. German.
4. Menegatti E, Pagani A, Avruscio G, et al. The Effects of Thermal Water Physical Exercise in Patients with Lower Limb Chronic Venous Insufficiency Monitored by Bioimpedance Analysis. Diagnostics (Basel). 2020 Oct 31;10(11):889.
5. Giancesini S, Tessari M, Bacciglieri P, et al. A specifically designed aquatic exercise protocol to reduce chronic lower limb edema. Phlebology. 2017 Oct;32(9):594-600.
6. Badtieva VA, Trukhacheva NV, Savin EA. Sovremennye tendentsii v lechenii i profilaktike limfedemy nizhnikh konechnostei [The modern trends in the treatment and prevention of lymphedema of the lower extremities]. Vopr Kurortol Fizioter Lech Fiz Kult. 2018;95(4):54-61. Russian.
7. Carpentier PH, Satger B. Randomized trial of balneotherapy associated with patient education in patients with advanced chronic venous insufficiency. J Vasc Surg. 2009 Jan;49(1):163-70.
8. Petracchia L, Mennuni G, Fontana M, et al. Possibilità della balneoterapia termale nell'insufficienza venosa cronica degli arti inferiori [The possible uses of balneotherapy in treating chronic venous insufficiency of lower limbs]. Clin Ter. 2013 May-Jun;164(3):233-8. Italian.

EVIDENCE BASED STATEMENT

Domain 12; Statement 9

IDENTIFIED REFERENCES

1. Thibert A, Briche N, Vernizeau BD, et al. Systematic review of adapted physical activity and therapeutic education of patients with chronic venous disease. *J Vasc Surg Venous Lymphat Disord*. 2022 Jul 7:S2213-333X(22)00267-0.
2. de Moraes Silva MA, Nakano LC, Cisneros LL, et al. Balneotherapy for chronic venous insufficiency. *Cochrane Database Syst Rev*. 2019 Aug 26;8(8):CD013085.
3. Yeung W, Semciw AI. Aquatic Therapy for People with Lymphedema: A Systematic Review and Meta-analysis. *Lymphat Res Biol*. 2018 Feb;16(1):9-19.
4. Blain H, Bernard PL, Canovas G, Raffort N, et al. Combining balneotherapy and health promotion to promote active and healthy ageing: the Balaruc-MACVIA-LR[®] approach. *Aging Clin Exp Res*. 2016 Dec;28(6):1061-1065

EVIDENCE BASED STATEMENT

Domain 12; Statement 9

TEXT FOR INCLUSION IN THE DOCUMENT

DOMAIN 12, Statement 09

TOPIC: “Aquatic activity evidence in venous-lymphatic disease management”

The potential benefit brought by aquatic immersion for lower limb venous-lymphatic disorders have been known since the ancient times. The physical, thermal and chemical properties of the aquatic environment can all be involved in this process, yet proper data collection is needed to move from empiricism toward evidence-based science.

This concept has been clearly underlined by two recent reviews focusing on the venous and on the lymphatic context, respectively.

In particular, for the venous aspects, moderate- to low-certainty evidence showed balneotherapy may result in a moderate improvement in pain, quality of life and skin pigmentation, while no clear effect on disease severity signs and symptoms score, adverse effects, leg ulcers and oedema were reported.

***[de Moraes Silva MA, Nakano LC, Cisneros LL, et al. Balneotherapy for chronic venous insufficiency. Cochrane Database Syst Rev. 2019 Aug 26;8(8):CD013085].** The analysis focusing on the lymphatic system showed the lack of clear evidence favoring aquatic vs land-based exercises, yet with a clear lack of properly performed investigations on lower limb lymphedema.

[Yeung W, Semciw AI. Aquatic Therapy for People with Lymphedema: A Systematic Review and Meta-analysis. Lymphat Res Biol. 2018 Feb;16(1):9-19].

A standardized and reproducible protocol of aquatic exercise for lower limb venous-lymphatic patients was presented in 2017, demonstrating benefits in lower limb volume, symptomatology and ankle range of motion improvement.

[Gianesini S, Tessari M, Bacciglieri P, et al. A specifically designed aquatic exercise protocol to reduce chronic lower limb edema. Phlebology. 2017 Oct;32(9):594-600].

The same exercise protocol was tested inside and outside the aquatic environment, demonstrating the advantage of the water immersion context.

[Menegatti E, Masiero S, Zamboni P, et al. Randomized controlled trial on Dryland And Thermal Aquatic standardized exercise protocol for chronic venous disease (DATA study). J Vasc Surg Venous Lymphat Disord. 2021 Sep;9(5):1226-1234.e2]

Another recent randomized trial showed the benefit of balneotherapy in advanced chronic venous disease patients in terms of clinical status improvement and quality of life, pointing out the rapidly occurring benefit within the 3 months of activity initiation, with a slower improvement rate from 3 months to 2 years.

[Sharifi M, Bay RC, Karandish K, et al. The randomized, controlled ATLANTIS trial of aquatic therapy for chronic venous insufficiency. J Vasc Surg Venous Lymphat Disord. 2021 Jul;9(4):961-970]

Further investigations are needed to standardize at best the type of aquatic activity favoring the most the venous and/or lymphatic system, based also on the different disease stages.

EVIDENCE BASED STATEMENT

Domain 12; Statement 9

STATEMENT FOR PUBLIC EVIDENCE-BASED AWARENESS

DOMAIN 12, Statement 09

“Specifically standardized aquatic exercises demonstrated to be beneficial for leg venous-lymphatic drainage. SPA/aquatic aspecific walks are still needing proper scientific validation.”

SELECTED REFERENCES

1. de Moraes Silva MA, Nakano LC, Cisneros LL, et al. Balneotherapy for chronic venous insufficiency. *Cochrane Database Syst Rev.* 2019 Aug 26;8(8):CD013085
2. Yeung W, Semciw AI. Aquatic Therapy for People with Lymphedema: A Systematic Review and Meta-analysis. *Lymphat Res Biol.* 2018 Feb;16(1):9-19
3. Giancesini S, Tessari M, Bacciglieri P, et al. A specifically designed aquatic exercise protocol to reduce chronic lower limb edema. *Phlebology.* 2017 Oct;32(9):594-600
4. Menegatti E, Masiero S, Zamboni P, et al. Randomized controlled trial on Dryland And Thermal Aquatic standardized exercise protocol for chronic venous disease (DATA study). *J Vasc Surg Venous Lymphat Disord.* 2021 Sep;9(5):1226-1234.e2
5. Sharifi M, Bay RC, Karandish K, et al. The randomized, controlled ATLANTIS trial of aquatic therapy for chronic venous insufficiency. *J Vasc Surg Venous Lymphat Disord.* 2021 Jul;9(4):961-970

identified LITERATURE BIAS

Lack of standardization in the aquatic protocols

SUGGESTED NEXT LINES OF RESEARCH

Multicenter trials involving the same standardized protocol