

2022 MID-ATLANTIC CONFERENCE
10th ANNUAL CURRENT CONCEPTS IN
VASCULAR THERAPIES

2022



Hilton Virginia Beach Oceanfront
Virginia Beach, Virginia

APRIL 28-30



Sentara Vascular Specialists



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Alternative Therapies for PAD

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Sentara Vascular Specialists

Legs



Chronic Arterial Insufficiency

- Asymptomatic → Claudication →

Rest Pain → Ulcer →

Gangrene



Symptoms of PAD

- Claudication: Dull cramping or pain in **muscles** of hips, thighs or calf muscles when walking, climbing stairs, or exercise which is relieved with cessation of activity
- Consistent distances but can vary depending upon work load, incline, etc



Physiology of Claudication

During exercise, oxygen demand increases



Muscles operate anaerobically

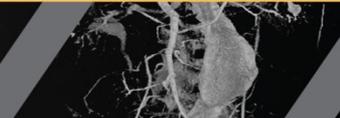
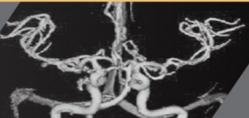


Produce lactic acid and other metabolites

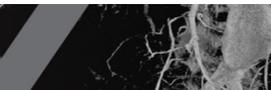
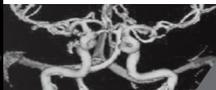
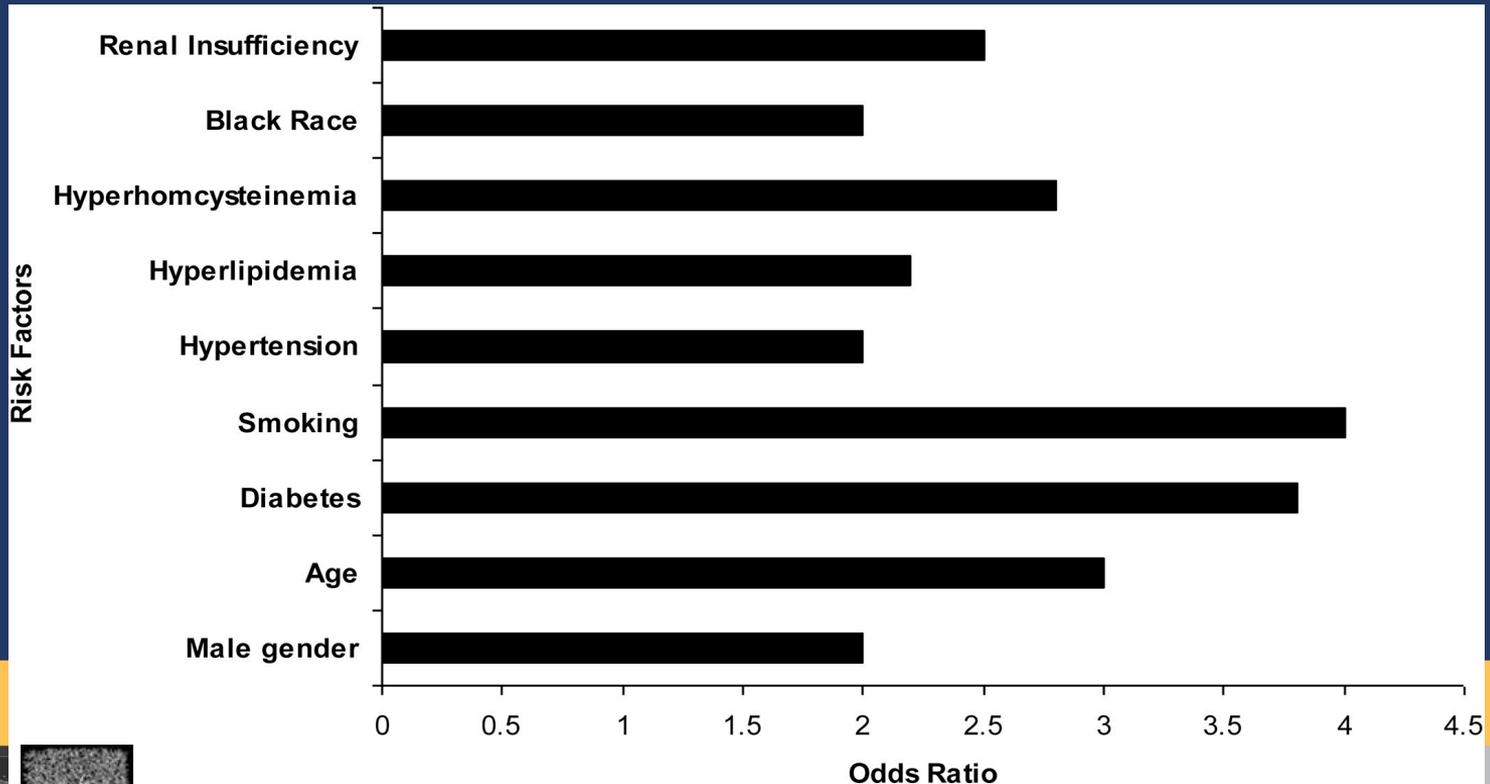


Leg Pain

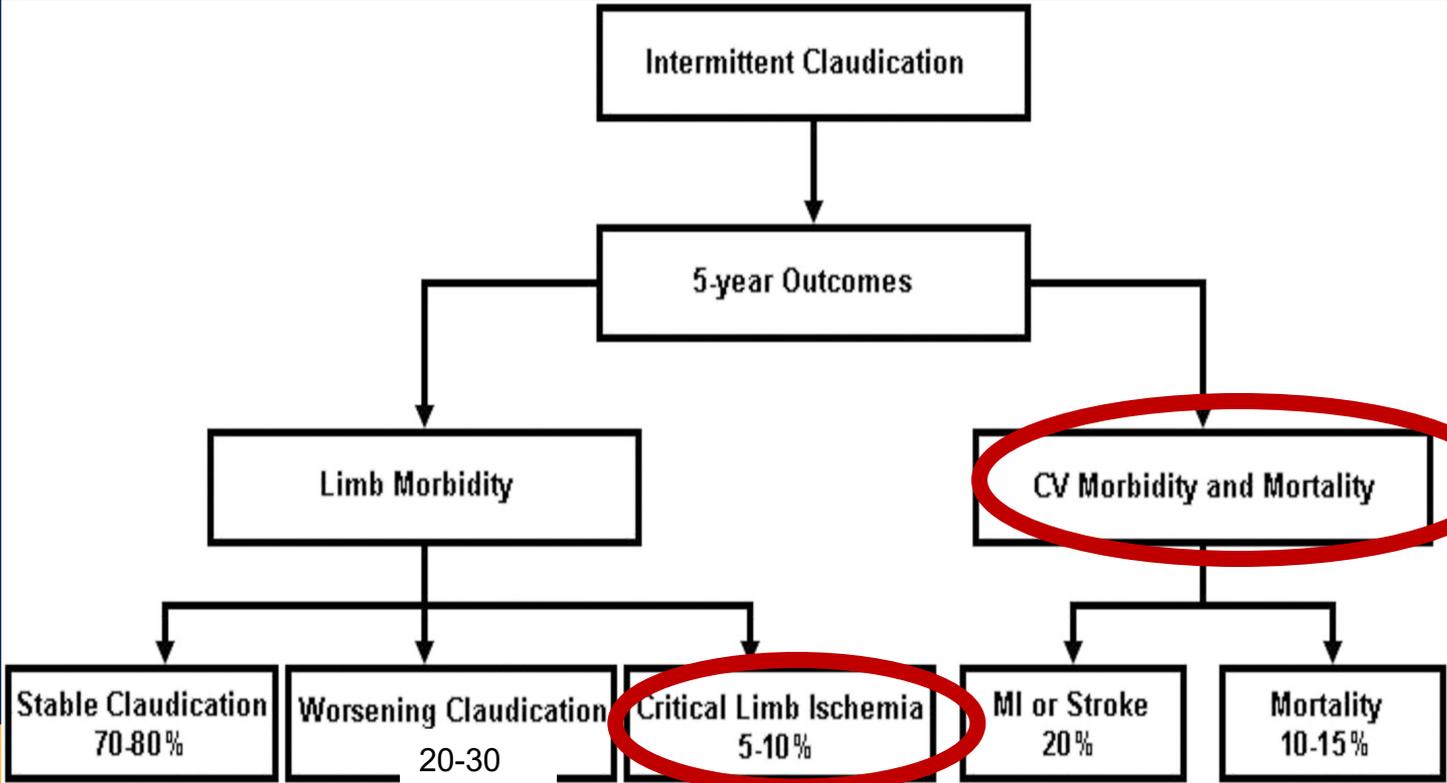
Angina of the Leg



Risk Factors For PAD



Natural History



Symptoms of PAD

- **Claudication**

- Assess Severity**

- How do symptoms impact current lifestyle ?
 - How would your life be different if your legs were normal ?



The Ankle-Brachial Index

$$\text{ABI} = \frac{\text{Lower extremity systolic pressure}}{\text{Brachial artery systolic pressure}}$$

- The Ankle-Brachial Index is 95% sensitive and 99% specific for PAD
- Both ankle and brachial systolic pressures are obtained using a hand-held Doppler instrument

Normal

0.95-1.2

PAD

<0.90



RESULTS OF EXERCISE TESTING

MAXIMUM WALK LOAD 3 MIN 0 SEC

2 MPH 12 % GRADE

INITIAL CLAUDICATION 0 MIN. 45 SEC

LOCATION: bilat hips & buttocks

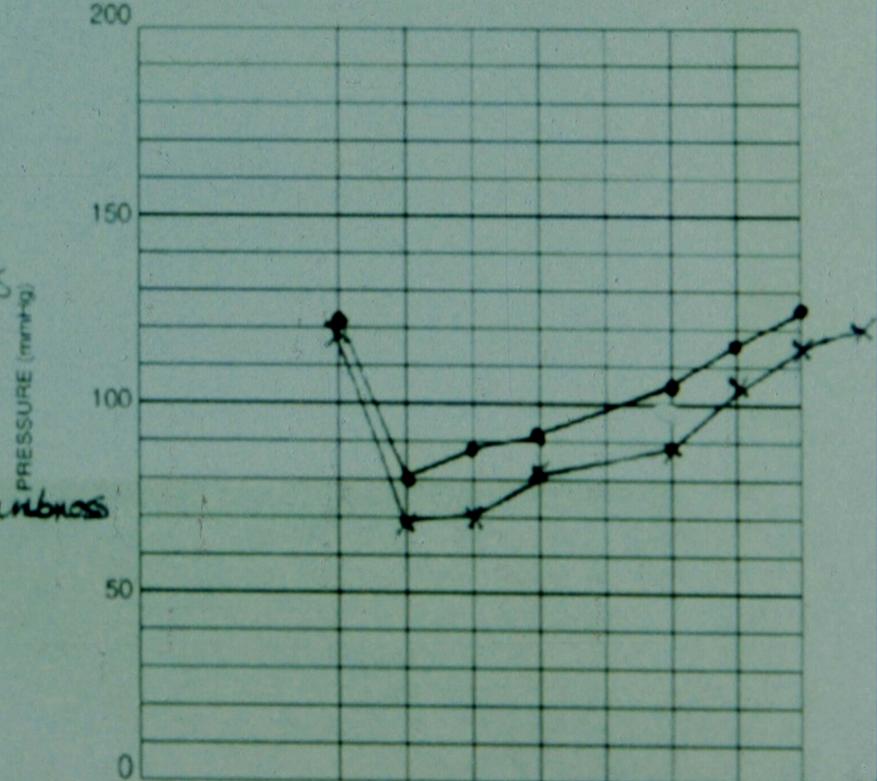
EXERCISE COMMENTS: after 2 min
of exercise both feet very
blanched-white

STOPPED DUE TO chattering @ leg &
numbness

% OF ANKLE SYSTOLIC PRESSURE DROP 1 MINUTE

POST EXERCISE COMPLETION

RIGHT ↓ 34 % LEFT ↓ 43 %



Asymptomatic PAD or Intermittent Claudication

- Non-limb-threatening

Stage 0 – Asymptomatic

Stage 1 – Mild claudication

Stage 2 – Moderate claudication – the distance that delineates mild, moderate and severe claudication is not specified in the Rutherford classification, as it is in the Fontaine classification

Stage 3 – Severe claudication +/- ABI < .5



Asymptomatic PAD or Intermittent Claudication Treatment

- Risk Factor Modification
 - Use as an opportunity to reduce overall cardiovascular risk
- Supervised Exercise Therapy
- Unsupervised Exercise Therapy



- Does Supervised Exercise Work?



Supervised walking therapy (SWT) in patients with intermittent claudication

Farzin Fakhry, MSc, Koen M. van de Luitgaarden, MD, Leon Bax, PhD, P. Ted den Hoed, MD, PhD, M.G. Myriam Hunink, MD, PhD, Ellen V. Rouwet, MD, PhD, Sandra Spronk, PhD

Journal of Vascular Surgery
Volume 56, Issue 4, Pages 1132-1142 (October 2012)
DOI: 10.1016/j.jvs.2012.04.046

Results:

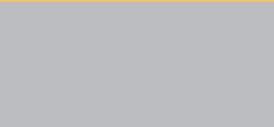
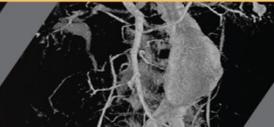
Twenty-five RCTs (1054 patients) comparing SWT vs non-interventional observation showed a weighted mean difference of :

180 meters (95% confidence interval, 130-230 meters) in Max WD and

128 meters (95% confidence interval, 92-165 meters) in Pain FreeWD, both in favor of the SWT group.

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Journal of Vascular Surgery 2012 56, 1132-1142 DOI:
(10.1016/j.jvs.2012.04.046)



Conclusions:

- SWT is effective in improving MWD and PFWD in patients with IC.

Journal of Vascular Surgery 2012 56, 1132-1142 DOI: (10.1016/j.jvs.2012.04.046)

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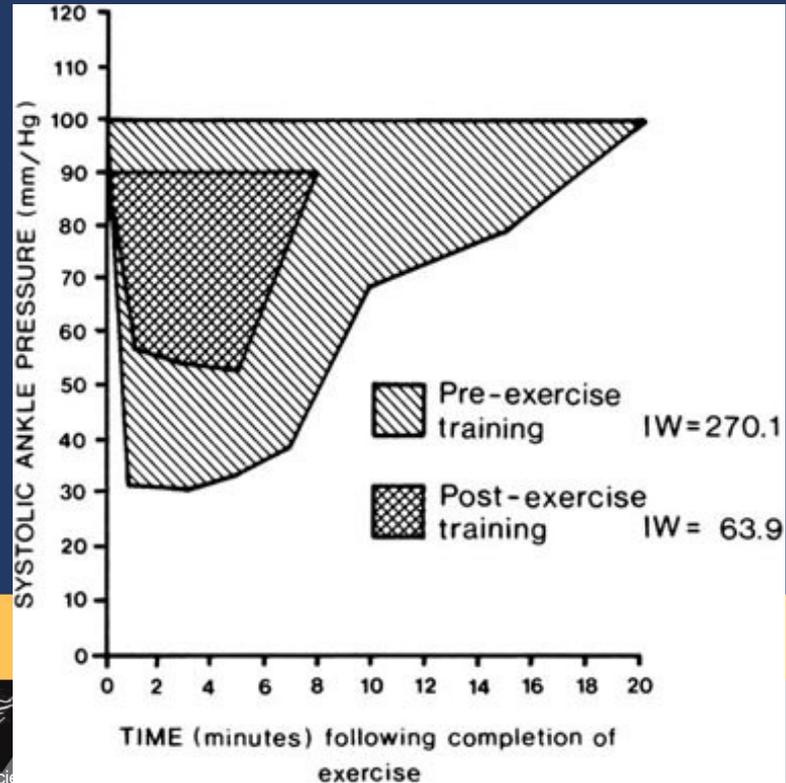
How Does Supervised Exercise Work ?

- No increase in measured ABI
- No increase in blood flow
- Training Effect



The ischemic window: A method for the objective quantitation of the training effect in exercise therapy for intermittent claudication

Richard L. Feinberg, MD, Roger T. Gregory, MD, Jock R. Wheeler, MD, Stanley O. Snyder, MD, Robert G. Gayle, MD, F.Noel Parent, MD, Robert B. Patterson, MD



A systematic review of treatment of intermittent claudication in the lower extremities

Rafael D. Malgor, MD, Fares Alalahdab, MD, Tarig A. Elraiyah, MBBS, Adnan Z. Rizvi, MD, Melanie A. Lane, BA, Larry J. Prokop, MLS, Olivia J. Phung, PharmD, Wigdan Farah, MBBS, Victor M. Montori, MD, MSc, Michael S. Conte, MD, Mohammad Hassan Murad, MD, MPH

Journal of Vascular Surgery

Volume 61, Issue 3, Pages 54S-73S (March 2015)

DOI: 10.1016/j.jvs.2014.12.007

8 systematic reviews and 12 trials enrolling > 1500 Patients



Malgor et al, JVS 3/2015

Intervention	comparison	Outcomes	QOE
SET	Medical management	SET has better walking performance	⊕⊕⊕⊕
Revascularization (open or EVT)	Medical management	Revascularization has better Walking performance & Blood flow parameters	⊕⊕⊕⊕
Revascularization (open or EVT)	SET	Revascularization has better & faster improvement in blood flow parameters	⊕⊕○○
EVT	Open surgery	EVT has lower LOS & complications but less durability	⊕⊕⊕○
Revascularization (open or EVT) + SET	Revascularization alone or SET alone	Combination has better Walking performance & Blood flow parameters	⊕⊕⊕○



SVS Recs

Recommendations: Exercise therapy

		<i>Grade</i>	<i>Level of evidence</i>
4.12.	We recommend as first-line therapy a supervised exercise program consisting of walking a minimum of three times per week (30-60 min/session) for at least 12 weeks to all suitable patients with IC.	1	A
4.13.	We recommend home-based exercise, with a goal of at least 30 minutes of walking three to five times per week when a supervised exercise program is unavailable or for long-term benefit after a supervised exercise program is completed.	1	B
4.14.	In patients who have undergone revascularization therapy for IC, we recommend exercise (either supervised or home based) for adjunctive functional benefits.	1	B
4.15.	We recommend that patients with IC be followed up annually to assess compliance with lifestyle measures (smoking cessation, exercise) and medical therapies as well as to determine if there is evidence of progression in symptoms or signs of PAD. Yearly ABI testing may be of value to provide objective evidence of disease progression.	1	C





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Society for
Vascular Medicine



Treating blocked leg arteries

When you need a procedure—and when you don't

Five Things Physicians and Patients Should Question

1

Don't do work up for clotting disorder (order hypercoagulable testing) for patients who develop first episode of deep vein thrombosis (DVT) in the setting of a known cause.

Lab tests to look for a clotting disorder will not alter treatment of a venous blood clot, even if an abnormality is found. DVT is a very common disorder, and recent discoveries of clotting abnormalities have led to increased testing without proven benefit.

2

Don't reimaging DVT in the absence of a clinical change.

Repeat ultrasound images to evaluate "response" of venous clot to therapy does not alter treatment.

3

Avoid cardiovascular testing for patients undergoing low-risk surgery.

Pre-operative stress testing, echocardiography, or other cardiovascular testing does not improve the quality of decision-making in patients undergoing low-risk surgery.

4

Refrain from percutaneous or surgical revascularization of peripheral artery stenosis in patients without claudication or critical limb ischemia.

Patients without symptoms will not benefit from attempts to improve circulation. No evidence exists to support improving circulation to prevent progression of disease. There is no proven preventive benefit, only symptomatic benefit.

5

Don't screen for renal artery stenosis in patients without resistant hypertension and with normal renal function, even if known atherosclerosis is present.

Performing surgery or angioplasty to improve circulation to the kidneys has no proven preventive benefit, and shouldn't be considered unless there is evidence of symptoms, such as elevated blood pressure or decreased renal function.

Five Things Physicians and Patients Should Question

Don't use interventions (including surgical bypass, angiogram, angioplasty or stent) as a first line of treatment for most patients with intermittent claudication.

A trial of smoking cessation, risk factor modification, diet and exercise, as well as pharmacologic treatment should be attempted before any procedures. When indicated, the type of intervention (surgery or angioplasty) depends on several factors.

4

Intermittent claudication can vary due to several factors. The life-time incidence of amputation in a patient with claudication is less than 5% with appropriate risk factor modification.

Procedures for claudication are usually not limb-saving, but, rather, lifestyle-improving. However, interventions are not without risks, including worsening the patient's perfusion, and should be reserved until a trial of conservative management has been attempted. Many people will actually realize an increase in their walking distance and pain threshold with exercise therapy. In cases where the claudication limits a person's ability to carry out normal daily functions, it is appropriate to intervene.

Depending upon the characteristics of the occlusive process, and patient comorbidities, the best option for treatment may be either surgical or endovascular.



Asymptomatic PAD or Intermittent Claudication

- Conservative Rx Failures  Revascularization
 - Endovascular
 - Open



SVS Recs

Recommendations: General considerations on invasive treatment for intermittent claudication (IC)

	<i>Grade</i>	<i>Level of evidence</i>
5.1. We recommend EVT or surgical treatment of IC for patients with significant functional or lifestyle-limiting disability when there is a reasonable likelihood of symptomatic improvement with treatment when pharmacologic or exercise therapy, or both, have failed, and when the benefits of treatment outweigh the potential risks.	1	B
5.2. We recommend an individualized approach to select an invasive treatment for IC. The modality offered should provide a reasonable likelihood of sustained benefit to the patient (>50% likelihood of clinical efficacy for at least 2 years). For revascularization, anatomic patency (freedom from hemodynamically significant restenosis) is considered a prerequisite for sustained efficacy.	1	C

EVT, Endovascular therapy.



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alternative therapies for PAD



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https://www.verywellhealth.com > ... > Living With

Remedies for Peripheral Artery Disease - Verywell Health

Using **Natural Remedies** — Ginkgo biloba (an herb said to stimulate circulation) appears to be more effective than placebo for PAD patients with intermittent ...

Signs and Symptoms · Treatment · Remedies



People also ask

How do you treat peripheral artery disease naturally?



What is the best treatment for peripheral artery disease?



Can walking reverse PAD?



Feedback

https://www.sciencedaily.com > releases > 2018/08

Alternative treatment for peripheral artery disease - ScienceDaily

Aug 28, 2018 — Scientists have a new way to fight peripheral artery disease, or PAD, an ailment affecting 8 million Americans.

by MH Pittler · 2005 · Cited by 59 — The evidence relates to acupuncture, biofeedback, chelation **therapy**, CO(2)-applications and the dietary supplements Allium sativum (garlic),...

[https://www.youtube.com > watch](https://www.youtube.com/watch) ⋮

Peripheral Artery Disease - Is There a Holistic Approach to ...

Nov 29, 2017 — What is the best approach to peripheral arterial disease (**PAD**)? Do all blockages need to be treated? Is there evidence that lifestyle ...

[https://www.ciccenters.com > is-peripheral-arterial-disea...](https://www.ciccenters.com/is-peripheral-arterial-disea...) ⋮

Is Peripheral Arterial Disease Natural Treatment an Option for ...

Mar 30, 2019 — You might have heard about “**natural**” or “**conservative**” **treatment** options for your peripheral arterial disease (**PAD**) – and you might wonder ...

[https://www.webmd.com > vitamins > condition-1467](https://www.webmd.com/vitamins/condition-1467) ⋮

Common Vitamins and Supplements to Treat ... - WebMD

12 results — Considering taking a vitamin or supplement to treat Peripheral+Arterial+Disease+ (**Pad**)? Below is a list of common **natural remedies** used to treat or ...

[https://www.usavascularcenters.com > blog > is-it-possi...](https://www.usavascularcenters.com/blog/is-it-possi...) ⋮

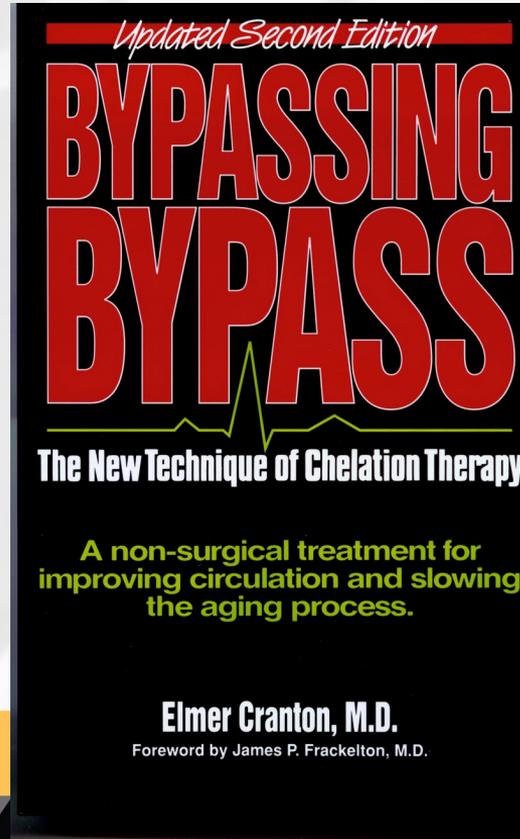
Reversing Peripheral Artery Disease Naturally | USA Vascular

May 15, 2020 — Is It Possible to Reverse **Peripheral Artery Disease Naturally** · Eat less food with saturated fats or cholesterol, such as beef, pork, poultry, ...



Alternative / Complimentary Therapies for PAD

- Acupuncture
- Biofeedback
- Chelation
- Garlic
- Ginkgo biloba
- Omega 3 fatty acids
- Vitamin E
- **Padma 28**





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knives and
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and Asthma
- May Block the Spread of Cancer

NAN KATHRYN FUCHS, PH.D.

Complementary therapies for peripheral arterial disease: Systematic review

Max H. Pittler   • Edzard Ernst

DOI: <https://doi.org/10.1016/j.atherosclerosis.2005.02.021>

Abstract

Keywords

References

Article Info

Related Articles

Abstract

While peripheral arterial disease (PAD) affects a considerable proportion of patients in the primary care setting, there is a high level of use of complementary treatment options. The aim was to assess the effectiveness of any type of complementary therapy for peripheral arterial disease. A systematic review was performed. Literature searches were conducted on Medline, Embase, Amed, and the Cochrane Library until December 2004. Hand-searches of medical journals and bibliographies were conducted. There were no restrictions regarding the language of publication. The screening of studies, selection, data extraction, the assessment of methodologic quality and validation were performed independently by the two reviewers. Data from randomized controlled trials, and systematic reviews and meta-analyses, which based their findings on the results of randomized controlled trials were included. Seven systematic reviews and meta-analyses and three additional randomized controlled trials met the inclusion criteria and were reviewed. The evidence relates to acupuncture, biofeedback, chelation therapy, CO₂-applications and the dietary supplements *Allium sativum* (garlic), *Ginkgo biloba* (ginkgo), omega-3 fatty acids, padma 28 and Vitamin E. Most studies included only patients with peripheral arterial disease in Fontaine stage II (intermittent claudication). The reviewed RCTs, systematic reviews and meta-analyses which based their findings on the results of RCTs suggest that *G. biloba* is effective compared with placebo for patients with intermittent claudication. Evidence also suggests that padma 28 is effective for intermittent claudication, although more data are required to confirm these findings. For all other complementary treatment options there is no evidence beyond reasonable doubt to suggest effectiveness for patients with peripheral arterial disease.

Keywords

[Peripheral arterial disease](#) • [Intermittent claudication](#) • [Systematic review](#) • [Complementary medicine](#) • [Alternative medicine](#)

Systematic Review

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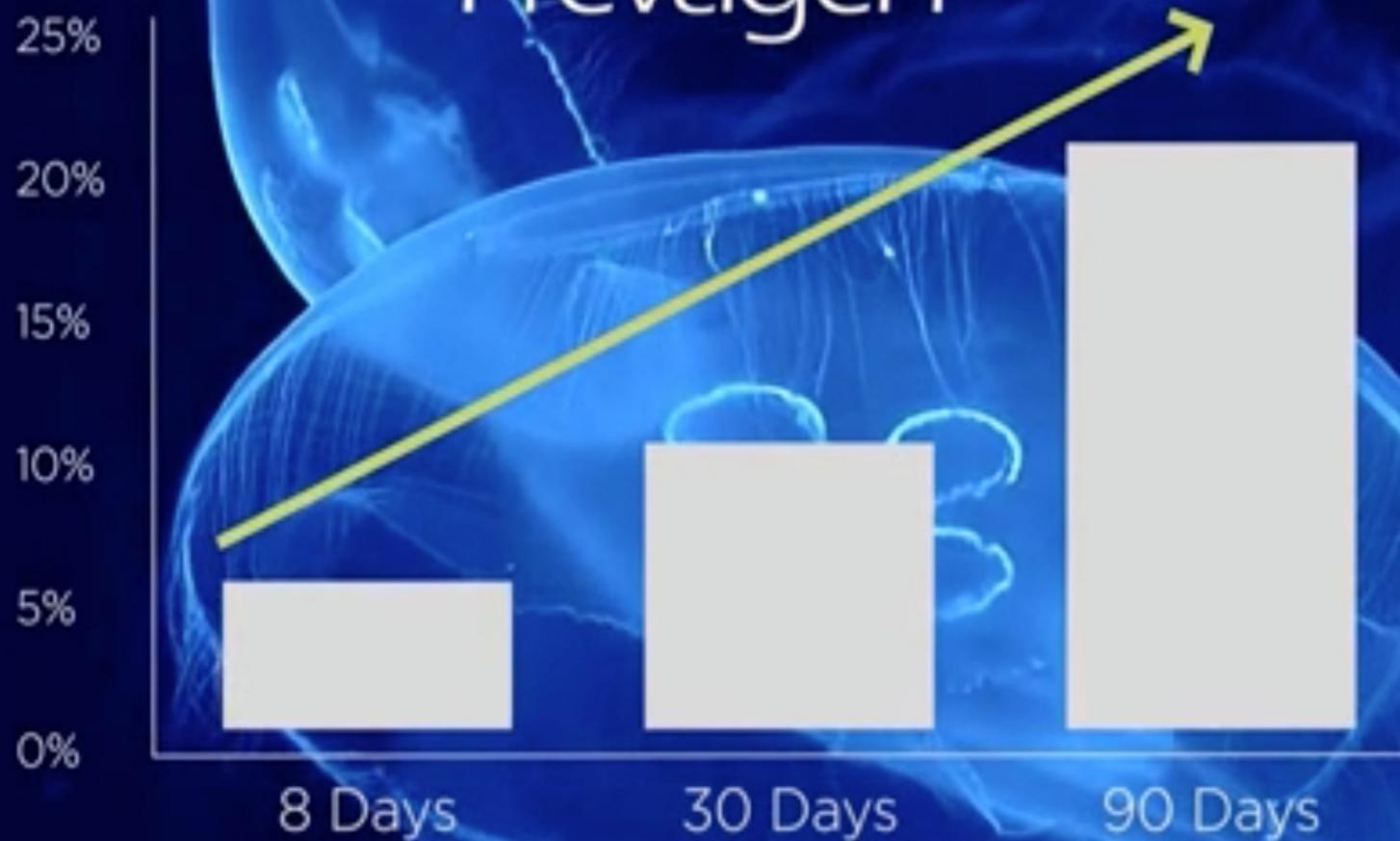


Systematic Review

For all other complementary treatment options there is no evidence beyond reasonable doubt to suggest effectiveness for patients with peripheral arterial disease.



Prevagen[®]



Summary

- Risk Factor Modification
- Exercise Therapy
 - Supervised
 - Unsupervised
- Revascularization
 - Failed exercise therapy
 - Poor prognosis (ABI <.5)
 - Prior revascularization with good result



