Chronic Venous Insufficiency

CHI Formulary Indication Review

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Council of Health Insurance

INDICATION UPDATE

ADDENDUM- October 2023

To the CHI Original Chronic Venous Insufficiency Clinical Guidance- Issued March 2020

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Related Documents

Related SOPs

- IDF-FR-P-02-01-IndicationsReview&IDFUpdates
- IDF-FR-P-05-01-UpdatedIndicationReview&IDFUpdates

Related WI:

- IDF-FR-WI-01-01SearchMethodologyGuideForNewIndications

Abbreviations

AAGSV	Anterior Accessory Great Saphenous Vein
AASV	Anterior Accessory Saphenous Vein
ABI	Ankle Brachial Index
ASVAL	Ambulatory Selective Varicose Vein Ablation under Local Anaesthesia
AVK	Anti-Vitamin K
CEAP	Clinical Etiological Anatomical Pathophysiological
CHI	Council of Health Insurance
CPG	Clinical Practice Guideline
CU	Concurrent Use
CVD	Chronic Venous Disease
CVI	Chronic Venous Insufficiency
DOAC	Direct Oral Anticoagulants
DUS	Duplex Ultrasound
ECS	Elastic Compression Stockings
EMA	European Medicines Agency
ESC	European Society of Cardiology
ESVS	European Society for Vascular Surgery
EVTA	Endovenous Thermal Ablation
EVTT	EndoVenous Thermal Treatment
FDA	Food and Drug Administration
GSV	Great Saphenous Vein
IDF	CHI Drug Formulary
IVC	Inferior Vena Cava
IVUS	Intravascular Ultrasound
LWMH	Low Molecular Weight Heparin

NYHA	New York Heart Association
PeVD	Pelvic Venous Disorders
PTS	Post-Thrombotic Syndrome
PVs	Perforating Vein
SFDA	Saudi Food and Drug Authority
SFJ	Saphenofemoral Junction
SFMV	French Society of Vascular Medicine
SPJ	Saphenopopliteal Junction
SSV	Small Saphenous Vein
ST	Step Therapy
SVS	Society for Vascular Surgery
TA	Thermal Ablation
UGFS	Ultrasound-Guided Foam Sclerotherapy
VLU	Venous Leg Ulcer
VTE	Venous Thromboembolism
VV	Varicose Veins

Executive Summary

Chronic venous insufficiency (CVI) arises when the veins in the legs hinder the proper return of blood to the heart. Typically, the valves within these veins ensure the one-way flow of blood towards the heart. However, when these valves function inadequately, blood might also flow backwards. As a result, blood accumulation (pooling) can occur in the legs[1]. Leg veins include deep veins, superficial veins, and perforating veins[2].

CVI can be caused by overweight, pregnancy, family history, damage to the leg due to injury, surgery, high blood pressure in the leg veins over time due to sitting or standing for long periods, lack of exercise, smoking, blood clots, or even phlebitis[1]. These causes can be subcategorized into congenital, primary, or secondary due to a disease[2].

The stages of venous disorders range from 0 to 6. “Venous disorders” is a general category for many possible issues with veins, including CVI. The stages are[2]:

- Stage 0: No signs that can be seen or felt. You may feel symptoms like achy or tired legs.
- Stage 1: Visible blood vessels, including spider veins.
- Stage 2: Varicose veins at least 3 millimeters wide.
- Stage 3: Edema (swelling) but no skin changes.
- Stage 4: Changes to your skin’s color and/or texture.
- Stage 5: Healed ulcer.
- Stage 6: Acute (active) ulcer.

The patient will be diagnosed with chronic venous insufficiency at stage 3 or above. In other words, having varicose veins does not mean patient has CVI. However, varicose veins are a sign of blood flow problems that could get worse over time[2].

Patients with CVI may experience pain, swelling, cramps, skin changes, varicose veins, leg ulcers, thrombophlebitis, deep vein thrombosis, pulmonary embolism, bleeding, secondary lymphedema, and chronic pain[1,3].

The likelihood of developing CVI increases with age and has a 3 to 1 female to male ratio. According to the Framingham study, the yearly occurrence is 2.6% among women and 1.9% among men. Varicose veins are more common in industrialized and developed countries compared to underdeveloped regions[4].

The first study to report the prevalence of varicose veins in the female population of Saudi Arabia was published in the World Journal of Surgery and Surgical Research in

2021. The latter showed a high prevalence of varicose veins with increasing age and positive family history as significant associated factors[5].

Another study was published in the Saudi Journal of Medicine in 2005 which demonstrated a high prevalence of CVI in the Saudi population, which is higher than in Western countries, especially in the Western region. This is probably linked to the high frequency of risk factors in the Saudi population and to the current lifestyle[6].

The financial burden of venous ulcers on the healthcare system is readily evident, with an estimated $1 billion spent annually in the United States on chronic wound treatment, equating to $3 billion annually for venous ulcer care[4].

Compression therapy using pumps, bandaging, and/or graded compression stockings is the mainstay of treatment for CVI.

CHI issued Chronic Venous Insufficiency clinical guidance after thorough review of renowned international and national clinical guidelines in March 2020. Updating clinical practice guidelines (CPGs) is a crucial process for maintaining the validity of recommendations.

This report functions as an addendum to the prior CHI Chronic Venous Insufficiency clinical guidance and seeks to offer guidance for the effective management of **chronic venous insufficiency**. It provides an **update on the chronic venous insufficiency guidelines** for CHI Formulary with the ultimate objective of updating the IDF (CHI Drug Formulary) while addressing **the most updated best available clinical and economic evidence related to drug therapies.**

Main triggers for the update are summarized, namely being **the updated version** of the European Society for Vascular Surgery (ESVS) **2022** Clinical Practice Guidelines on the Management of Chronic Venous Disease of the Lower Limbs, and the **new guidelines that are added to the report** such as the **2022** Society for Vascular Surgery, American Venous Forum, and American Vein and Lymphatic Society clinical practice guidelines for the management of varicose veins of the lower extremities. Part I. Duplex Scanning and Treatment of Superficial Truncal Reflux, the **2020** appropriate use criteria for chronic lower extremity venous disease of the American Venous Forum, the Society for Vascular Surgery, the American Vein and Lymphatic Society, and the Society of Interventional Radiology, the **2019** Compression therapy after invasive treatment of superficial veins of the lower extremities: Clinical practice guidelines of the American Venous Forum, Society for Vascular Surgery, American College of Phlebology, Society for Vascular Medicine, and International Union of Phlebology, the Update of the SFMV (French society of vascular medicine) guidelines on the conditions and safety measures necessary for thermal ablation of the saphenous veins and proposals for unresolved issues **2020,** Application of Clinical Practice Guidelines for the Management of Varicose Veins and Chronic Venous Disease to Canadian Practice Part One: Presentation, Assessment and Classification,

and Application of Clinical Practice Guidelines for the Management of Varicose Veins and Chronic Venous Disease to Canadian Practice Part Two: Treatment, Post-Treatment Follow Up and Ongoing Management.

After carefully examining clinical guidelines and reviewing the SFDA drug list, it is important to note that there have been **no newly approved or delisted drugs** for the treatment of Chronic Venous Insufficiency. Additionally, there have been **updates** regarding certain previously mentioned drugs in terms of drug information and prescribing edits since March 2020.

All recommendations are well supported by reference guidelines, Grade of Recommendation (GoR), Level of Evidence (LoE) and Strength of Agreement (SoA) in all tables reflecting specific drug classes' role in Chronic Venous Insufficiency therapeutic management.

Table 1 summarizes the major changes based on the different CVI guidelines used to issue this report:

Table 1. General Recommendations for the Management of Chronic Venous Insufficiency

Management of Chronic Venous Insufficiency		
General Recommendations	**Level of Evidence/Grade of Recommendation**	**Reference**
Duration of post-operative compression after superficial interventions to be decided on an individual basis	Class I recommendation	ESVS Guideline 2022[7]
Sclerotherapy as first choice for reticular veins	Class I recommendation	ESVS Guideline 2022[7]
No interruption of anticoagulation to undergo EVTA	Class IIa recommendation	ESVS Guideline 2022[7]
For patients with symptomatic varicose veins and axial reflux in the great or small saphenous vein, who are candidates for intervention, we recommend superficial venous intervention over long-term compression stockings.	Level of recommendation: grade 1 (strong), quality of evidence: B (moderate)	Society for Vascular Surgery, American Venous Forum, and American Vein and Lymphatic Society Guidelines 2022[8]
For patients with symptomatic varicose veins and axial reflux in the	Level of recommendation:	Society for Vascular Surgery, American

great saphenous vein, who are candidates for intervention, we recommend treatment with endovenous ablation over high ligation and stripping of the great saphenous vein because of less postprocedure pain and morbidity and an earlier return to regular activity.	grade 1 (strong), quality of evidence: B (moderate)	Venous Forum, and American Vein and Lymphatic Society Guidelines 2022[8]
Treatment of nontruncal varicose veins with or without telangiectasia by sclerotherapy, ambulatory phlebectomy, or powered phlebectomy in a symptomatic patient with varicose veins, edema due to venous disease, skin or subcutaneous changes, healed or active ulcers (CEAP classes 2-6) is recommended	Appropriate	American Venous Forum, the Society for Vascular Surgery, the American Vein and Lymphatic Society, and the Society of Interventional Radiology Guidelines 2020[9]
Appropriateness criteria for iliac vein or inferior vena cava (IVC) stenting as first-line treatment: Iliac vein or IVC stenting for obstructive disease without superficial truncal reflux as first-line treatment in a symptomatic patient with skin or subcutaneous changes, healed or active ulcers (CEAP classes 4-6) is recommended	Appropriate	American Venous Forum, the Society for Vascular Surgery, the American Vein and Lymphatic Society, and the Society of Interventional Radiology Guidelines 2020[9]
Compression is recommended after thermal ablation or stripping of the saphenous veins [GRADE - 2; LEVEL OF EVIDENCE - C], sclerotherapy [GRADE - 2; LEVEL OF EVIDENCE - C], and superficial vein treatment in patients with a venous leg ulcer [GRADE - 1; LEVEL OF EVIDENCE - B]	Grade stated in left column for each recommendation	American Venous Forum, Society for Vascular Surgery, American College of Phlebology, Society for Vascular Medicine, and International Union of Phlebology Guidelines 2019[10]

Dose of compression after thermal ablation or stripping of the varicose veins: If compression dressings are to be used postprocedurally in patients undergoing ablation or surgical procedures on the saphenous veins, those providing pressures >20mmHg together with eccentric pads placed directly over the vein ablated or operated on provide the greatest reduction in postoperative pain.	GRADE - 2; LEVEL OF EVIDENCE - B	American Venous Forum, Society for Vascular Surgery, American College of Phlebology, Society for Vascular Medicine, and International Union of Phlebology Guidelines 2019[10]
In a patient with a venous leg ulcer and underlying arterial disease, we suggest limiting the use of compression to patients with ankle-brachial index exceeding 0.5 or if absolute ankle pressure is >60 mm Hg.	GRADE - 2; LEVEL OF EVIDENCE - C	American Venous Forum, Society for Vascular Surgery, American College of Phlebology, Society for Vascular Medicine, and International Union of Phlebology Guidelines 2019[10]
It is recommended to give anticoagulant treatment at prophylactic dose in patients at high risk of thromboembolism, notably those with a personal history of venous thromboembolism or known major thrombophilia.	Not graded	SFMV Guidelines 2020[11]
If anticoagulation is prescribed, the guidelines propose, in the absence of published data, the use of a direct oral anticoagulant (DOAC) or a low-molecular-weight heparin (LMWH) or fondaparinux at prophylactic dose for 7 days. This treatment may be combined with class 2 compression.	Not graded	SFMV Guidelines 2020[11]
Treatment with an anti-vitamin K (AVK) or direct oral anti-coagulant (DOAC) at curative dose or antiplatelet agent does not constitute	Not graded	SFMV Guidelines 2020[11]

a contraindication to the TA procedure, which can be per-formed without adjustment of the anticoagulant dose.		

At the end of the report, a **key recommendation synthesis section** is added highlighting the latest updates in **Chronic Venous Insufficiency clinical and therapeutic management.**

Section 1.0 Summary of Reviewed Clinical Guidelines and Evidence

This section is divided into two parts: the first includes recommendations from **updated versions of guidelines** mentioned in the previous CHI Chronic Venous Insufficiency report, while the second includes **newly added guidelines** that have helped generate this report.

1.1 Revised Guidelines

This section contains the **updated versions** of the guidelines mentioned in the March 2020 CHI Chronic Venous Insufficiency Report and the corresponding recommendations:

Table 2. Guidelines Requiring Revision

Guidelines Requiring Revision		
Old Versions		**Updated versions**
1.1.1.	Management of Chronic Venous Disease- Clinical Practice Guidelines of the European Society for Vascular Surgery (**ESVS**) [**2015**]	European Society for Vascular Surgery (**ESVS**) **2022** Clinical Practice Guidelines on the Management of Chronic Venous Disease of the Lower Limbs
1.1.2.	Management of venous leg ulcers: Clinical practice guidelines of the **Society for Vascular Surgery and the American Venous Forum [2014]**	N/A*
1.1.3.	The care of patients with varicose veins and associated chronic venous diseases: Clinical practice guidelines of the **Society for Vascular Surgery**	N/A*

	and the American Venous Forum [2011]	
1.1.4.	Recommendations for the diagnosis and treatment of chronic venous disease- **Slovenian Society of Vascular Diseases [2017]**	N/A*

*****: *No updated versions available*

1.1.1 Management of Chronic Venous Disease- Clinical Practice Guidelines of the European Society for Vascular Surgery (ESVS) [2015]

The guidelines issued an **updated** version European Society for Vascular Surgery (**ESVS**) **2022** Clinical Practice Guidelines on the Management of Chronic Venous Disease (CVD) of the Lower Limbs. *Please refer to **Disease Clinical Guidelines - section 1.1** of CHI Chronic Venous Insufficiency original clinical guidance.*

The recommendations are accompanied by a grading scheme, outlined as follows:

Table 3. ESVS Levels of Evidence According to ESC (European Society of Cardiology)

Level of Evidence	Definition
A	Data derived from multiple randomized clinical trials or meta-analyses
B	Data derived from a single randomized clinical trial or large non-randomized studies
C	Consensus of expert opinion and/or small studies, retrospective studies, and registries

Table 4. ESVS Classes of Recommendations According to ESC (European Society of Cardiology)

Class	Definition
I	Evidence and/or general agreement that a given treatment or procedure is beneficial, useful, and effective
II	Conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of the given treatment or procedure
IIa	Weight of evidence/opinion is in favor of usefulness/efficacy
IIb	Usefulness/efficacy is less well established by evidence/opinion
III	Evidence or general agreement that the given treatment or procedure is not useful/effective, and in some cases may be harmful

The clinical etiological anatomical pathophysiological (CEAP) classification, most widely used to describe CVD and upon which recommendations are based, is detailed in table 5 below. The main recommendations listed in the guidelines are the following[7]:

- Class I recommendations:
    - Below knee elastic compression stockings (ECS) in patients with CVD clinical class C4b
    - Interventional treatment for CVD patients with symptomatic varicose veins (VVs) (C2)
    - Interventional treatment for CVD patients with skin changes (C4-C6)
    - Procedures for superficial venous incompetence in the outpatient setting
    - Ultrasound guided tumescent anesthesia for endovenous thermal ablation (EVTA)
    - Duration of post-operative compression after superficial interventions to be decided on an individual basis
    - Risk assessment for (venous thromboembolism) VTE in patients undergoing superficial venous intervention
    - Selection of EVTA device left to the discretion of the treating physician
    - Foam sclerotherapy under ultrasound guidance
    - Duplex ultrasound (DUS) of lower extremity veins in patients presenting with reticular veins and/or telangiectasias (C1)
    - In patients with C1 disease, treat larger incompetent veins before treating smaller veins
    - Sclerotherapy as first choice for reticular veins
    - Care taking not to injure the sural nerve, when cannulating the SSV (small saphenous vein) below midcalf
    - DUS surveillance after endovascular or surgical reconstruction for iliac vein outflow obstruction
    - Management of patients with iliac vein outflow obstruction by a multidisciplinary team
    - Objective arterial assessment for patients with active venous leg ulcer (VLU)
    - Early endovenous ablation in patients with active VLU, to accelerate healing

- Superficial venous treatment in patients with healed VLU to reduce its recurrence
- In patients with active or healed VLU, treat superficial veins even in the presence of deep venous incompetence
- Exclude other causes of pain in female patients with pelvic pain and clinical suspicion of pelvic venous disorders (PeVD)
- Specific DUS of pelvic escape points in patients with symptomatic VVs of potential pelvic origin
- Referral of patients with acute spontaneous bleeding from superficial veins for urgent assessment
- Elastic compression in pregnant women with symptoms/signs of CVD

- Class IIa recommendations:
  - Abdominal DUS part of initial assessment if supra-inguinal pathology is suspected
  - Exercise to improve venous symptoms in CVD patients
  - Below knee ECS 20–40 mmHg in patients with PTS (post-thrombotic syndrome) to reduce severity
  - Considering other causes of oedema in patients presenting with oedema (C3), before planning treatment
  - Use of buffered solutions for tumescent anesthesia
  - Individualized prophylaxis for superficial venous interventions
  - DUS surveillance 1 – 4 weeks after superficial venous interventions
  - Cyanoacrylate adhesive closure for incompetent saphenous trunk
  - High ligation and stripping of GSV (great saphenous vein), if EVTA options are not available
  - Endovenous ablation, division or ligation for incompetent PVs (perforating vein) requiring treatment
  - Sclerotherapy for telangiectasias
  - EVTA for anterior accessory saphenous vein (AASV) incompetence requiring treatment
  - EVTA for GSVs with large truncal diameter > 12 mm
  - Ultrasound-guided foam sclerotherapy (UGFS) and/or phlebectomy for patients with symptomatic recurrent VVs without saphenous trunk incompetence

- Intravascular ultrasound (IVUS) to guide endovascular procedures for iliac vein outflow obstruction
- Treatment of superficial incompetence, if combined superficial and deep venous incompetence
- Surgical repair of popliteal venous aneurysm, if thromboembolic complications, or if saccular, fusiform > 20 mm or containing thrombus
- Superimposed ECS ≤ 40 mmHg for small and recent onset VLU
- Long term compression treatment in patients with healed VLU to reduce VLU recurrence
- UGFS for ablation of sub-ulcer venous plexus in patients with VLU
- Venous stenting for active or healed VLU and iliac vein outflow obstruction
- Abdominal and/or transvaginal DUS in female patients with suspected pelvic venous disorders
- Local procedures for VVs and related pelvic escape points
- Pelvic vein embolization in patients with VVs of pelvic origin with pelvic symptoms
- Local foam sclerotherapy after episode of acute bleeding of superficial veins
- Weight loss in obese patients with CVD for improving venous outcomes
- In obese patients, endovenous ablation of incompetent saphenous trunk requiring treatment

- Class IIb recommendations:
  - Adjuvant intermittent pneumatic compression in patients with PTS to reduce severity
  - UGFS for treating incompetent saphenous trunks < 6 mm
  - Catheter directed foam sclerotherapy with/without tumescence for treating incompetent saphenous trunk
  - Mechanochemical ablation for incompetent saphenous trunk
  - Non-thermal non-tumescent ablation for incompetent SSV trunk
  - UGFS for AASV (anterior accessory saphenous vein) incompetence requiring treatment
  - Treatment of incompetent PVs in limbs with clinical class C4b, C5 or C6

    - Treatment of foot and ankle VVs during or after ablation of more cranial reflux
    - Modified compression, under close supervision, for mixed arterial and venous ulcer
    - Concomitant PV treatment with truncal treatment for active VLU due to superficial and PV incompetence
- Class III recommendations:
    - No treatment of lower leg incompetent PVs in patients with VVs without skin changes
    - No endovascular or surgical treatment of iliac vein outflow obstruction in patients without severe symptoms
    - No sustained compression for VLU, if ankle pressure < 60 mmHg, toe pressure < 30 mmHg or ankle brachial index (ABI) < 0.6
    - No pelvic vein embolization in patients with VVs of pelvic origin without pelvic symptoms
    - No interruption of anticoagulation to undergo EVTA
- Upgraded recommendations:
    - Treatment of varicose tributaries by phlebectomies, foam sclerotherapy or both (from class IIa to class I)
    - Transcutaneous laser for treatment of telangiectasias (from class IIb to class IIa)
    - EVTA for treatment of SSV incompetence in preference to surgery and UGFS (from class IIa to class I)
    - Surgical or hybrid deep venous reconstructions in patients with iliac vein outflow obstruction, suffering from a recalcitrant VLU, severe PTS or disabling venous claudication (from class III to class IIb)
    - Multilayer or inelastic bandages or adjustable compression garments (≥ 40 mmHg ankle pressure) for patients with active VLU (from class IIa to class I)
- Downgraded recommendations:
    - Post-procedural compression after UGFS or EVTA of an incompetent saphenous trunk (from class I to class IIa)
    - Ultrasound guided tumescent anesthesia for high ligation and stripping (from class IIa to class IIb)

- Phlebectomies with preservation of the saphenous trunk (ASVAL) for uncomplicated varicose veins (C2) (from class IIa to class IIb)

Table 5. 2020 Update of the CEAP (Clinical Etiological Anatomical Pathophysiological) Classification

Class	Description
Clinical (C) class	
C0	No visible or palpable signs of venous disease
C1	Telangiectasia or reticular veins
C2	Varicose veins
C2r	Recurrent varicose veins
C3	Oedema
C4	Changes in skin and subcutaneous tissue secondary to CVD
C4a	Pigmentation or eczema
C4b	Lipodermatosclerosis or atrophie blanche
C4c	Corona phlebectatica
C5	Healed ulcer
C6	Active venous ulcer
C6r	Recurrent venous ulceration
Symptomatic or not: subscript 'S' or subscript 'A'	S: symptomatic, including ache, pain, tightness, skin irritation, heaviness, and muscle cramps, and other complaints attributable to venous dysfunction A: asymptomatic
Etiological (E) class	
Ep	Primary
Es	Secondary
Esi	Secondary – intravenous
Ese	Secondary – extravenous
Ec	Congenital
En	None identified
Anatomical (A) class	
As	Superficial
Ad	Deep
Ap	Perforators
An	No identifiable venous location
*Pathophysiological (P) class**	
Pr	Reflux
Po	Obstruction
Pr,o	Reflux and obstruction
Pn	No pathophysiology identified

Retrieved from De Maeseneer MG, Kakkos SK, Aherne T, et al. Editor's Choice – European Society for Vascular Surgery (ESVS) 2022 Clinical Practice Guidelines on the Management of Chronic Venous Disease of the Lower Limbs. European Journal of Vascular and Endovascular Surgery. 2022;63(2):184-267. doi:10.1016/j.ejvs.2021.12.024.

The contraindications to compression treatment are:

1. Severe lower extremity atherosclerotic disease with ABI < 0.6 and/or ankle pressure < 60 mmHg;
2. Extra-anatomic or superficially tunneled arterial bypass at the site of intended compression;
3. Severe heart failure, New York Heart Association (NYHA) Class IV;
4. Heart failure NYHA Class III and routine application of compression devices without clinical and hemodynamic monitoring;

5. Confirmed allergy to compression material;
6. Severe diabetic neuropathy with sensory loss or microangiopathy with the risk of skin necrosis (May not apply to inelastic compression exerting low levels of sustained compression pressure (modified compression).

1.2 Additional Guidelines

This section includes the added guidelines to the previous CHI Chronic Venous Insufficiency report, along with their recommendations.

Table 6. List of Additional Guidelines

Additional Guidelines
The 2022 Society for Vascular Surgery, American Venous Forum, and American Vein and Lymphatic Society clinical practice guidelines for the management of varicose veins of the lower extremities. Part I. Duplex Scanning and Treatment of Superficial Truncal Reflux
The 2020 appropriate use criteria for chronic lower extremity venous disease of the American Venous Forum, the Society for Vascular Surgery, the American Vein and Lymphatic Society, and the Society of Interventional Radiology
The 2019 Compression therapy after invasive treatment of superficial veins of the lower extremities: Clinical practice guidelines of the American Venous Forum, Society for Vascular Surgery, American College of Phlebology, Society for Vascular Medicine, and International Union of Phlebology
The Update of the SFMV (French society of vascular medicine) guidelines on the conditions and safety measures necessary for thermal ablation of the saphenous veins and proposals for unresolved issues 2020
Application of Clinical Practice Guidelines for the Management of Varicose Veins and Chronic Venous Disease to Canadian Practice Part One: Presentation, Assessment and Classification
Application of Clinical Practice Guidelines for the Management of Varicose Veins and Chronic Venous Disease to Canadian Practice Part Two: Treatment, Post-Treatment Follow Up and Ongoing Management

1.2.1 The 2022 Society for Vascular Surgery, American Venous Forum, and American Vein and Lymphatic Society Clinical Practice Guidelines for the Management of Varicose Veins of the Lower Extremities. Part I. Duplex Scanning and Treatment of Superficial Truncal Reflux

This clinical guideline was endorsed by the Society for Vascular Medicine and the International Union of Phlebology. The recommendations are accompanied by a grading scheme, outlined as follows[8]:

Table 7. SVS Quality of Evidence Underlying the Recommendations 2022

Quality of Evidence	
A: high	Confidence in the treatment effect is high, and further research would be unlikely to change the estimate of effect
B: moderate	Further research likely to impact confidence in estimate of effect and may change estimate
C: low to very low	Further research would be very likely to affect the estimate of the effect
Strength of Recommendations	
Grade 1: strong → recommend	The potential benefits of an intervention clearly outweigh the potential harms and burdens; and virtually all well-informed patients would choose such an intervention, and the physician can confidently recommend the treatment without a detailed knowledge of the underlying data
Grade 2: weak → suggest	The benefits and risks will be more balanced or uncertain; thus, different patients could choose different treatment options according to their values and preference. The physician must be familiar with the underlying data before making such a recommendation and should counsel patients appropriately
Ungraded	Because a new systematic review of these remarks and good practice statements could not be performed, these were based on the committee's clinical expertise, knowledge of the literature, and studies that had not met the criteria to be included in the systematic review.

The recommendations are summarized below[8]:

- For patients with symptomatic varicose veins and axial reflux in the great or small saphenous vein, who are candidates for intervention, we recommend

superficial venous intervention over long-term compression stockings. Level of recommendation: grade 1 (strong), quality of evidence: B (moderate)

- For patients with symptomatic varicose veins and axial reflux in the anterior accessory or posterior accessory great saphenous vein, who are candidates for intervention, we suggest superficial venous intervention over compression stockings. Level of recommendation: grade 2 (weak), quality of evidence: C (low to very low)
- For patients with symptomatic varicose veins and axial reflux in the superficial truncal veins, we suggest compression therapy for primary treatment if the patient's ambulatory status and underlying medical conditions warrant a conservative approach or, if the patient prefers conservative treatment, for either a trial period or definitive management. Level of recommendation: grade 2 (weak), quality of evidence: C (low to very low)
- For patients with symptomatic varicose veins and axial reflux in the great saphenous vein, who are candidates for intervention, we recommend treatment with endovenous ablation over high ligation and stripping of the great saphenous vein because of less postprocedure pain and morbidity and an earlier return to regular activity. Level of recommendation: grade 1 (strong), quality of evidence: B (moderate)
- For patients with symptomatic varicose veins and axial reflux in the small saphenous vein, who are candidates for intervention, we recommend treatment with endovenous ablation over ligation and stripping of the small saphenous vein because of less postprocedure pain and morbidity and an earlier return to regular activity. Level of recommendation: grade 1 (strong), quality of evidence: C (low to very low)
- For patients with symptomatic varicose veins and axial reflux in the anterior accessory or posterior accessory great saphenous vein, who are candidates for intervention, we suggest treatment with endovenous ablation, with additional phlebectomy, if needed, over ligation and stripping of the accessory great saphenous vein because of less postprocedure pain and morbidity and an earlier return to regular activity. Level of recommendation: grade 2 (weak), quality of evidence: C (low to very low)
- For patients with symptomatic varicose veins and axial reflux in the great or small saphenous vein, we recommend treatment with ligation and stripping of the saphenous vein if technology or expertise in endovenous ablation is not available or if the venous anatomy precludes endovenous treatment. Level of recommendation: grade 1 (strong), quality of evidence: B (moderate)
- For patients with symptomatic varicose veins and axial reflux in the anterior accessory or the posterior accessory great saphenous vein, we suggest

treatment with ligation and stripping of the accessory great saphenous vein, with additional phlebectomy, if needed, if technology or expertise in endovenous ablations is not available or if the venous anatomy precludes endovenous treatment. Level of recommendation: grade 2 (weak), quality of evidence: C (low to very low)

- For patients with symptomatic varicose veins and axial reflux in the great saphenous vein who place a high priority on the long-term outcomes of treatment (quality of life and recurrence), we suggest treatment with endovenous laser ablation, radiofrequency ablation, or high ligation and stripping over physician-compounded ultrasound-guided foam sclerotherapy. Level of recommendation: grade 2 (weak) quality of evidence: B (moderate)
- For patients with symptomatic varicose veins and axial reflux in the small saphenous vein who place a high priority on the long-term outcomes of treatment (quality of life and recurrence), we suggest treatment with laser ablation, radiofrequency ablation, or ligation and stripping from the knee to the upper or mid-calf over physician-compounded ultrasound- guided foam sclerotherapy. Level of recommendation: grade 2 (weak) quality of evidence: C (low to very low)
- For patients with symptomatic varicose veins and axial reflux in the anterior accessory or posterior accessory great saphenous vein who place a high priority on the long-term outcomes of treatment (quality of life and recurrence), we suggest treatment of the refluxing superficial trunk with endovenous laser ablation, radiofrequency ablation, or high ligation and stripping, with additional phlebectomy, if needed, over physician-compounded ultrasound-guided foam sclerotherapy. Level of recommendation: grade 2 (weak), quality of evidence: C (low to very low)
- For patients with symptomatic axial reflux of the great saphenous vein, we recommend both thermal and nonthermal ablation from the groin to below the knee, depending on the available expertise of the treating physician and the preference of the patient. Level of recommendation: grade 1 (strong), quality of evidence: B (moderate)
- For patients with symptomatic axial reflux of the small saphenous vein, we recommend both thermal and nonthermal ablation from the knee to the upper or mid-calf, depending on the available expertise of the treating physician and the preference of the patient. Level of recommendation: grade 1 (strong), quality of evidence: C (low to very low)
- For patients with symptomatic axial reflux of the anterior accessory or posterior accessory great saphenous vein, we suggest either thermal or nonthermal ablation, with additional phlebectomy, if needed, depending on

the available expertise of the treating physician and the preference of the patient. Level of recommendation: grade 2 (weak), quality of evidence: C (low to very low)

- For patients with varicose veins (CEAP class C2) who have significant, symptomatic axial reflux of the great or small saphenous vein, we recommend against treatment of incompetent perforating veins concomitant with initial ablation of the superficial truncal veins. Level of recommendation: grade 1 (strong), quality of evidence: C (low to very low)
- For patients with varicose veins (CEAP class C2) who have significant, symptomatic axial reflux of the anterior accessory or posterior accessory great saphenous vein, we suggest against treatment of incompetent perforating veins concomitant with initial ablation of the superficial truncal veins. Level of recommendation: grade 2 (weak), quality of evidence: C (low to very low)
- For patients with varicose veins (CEAP class C2) and persistent or recurrent symptoms after previous complete ablation of incompetent superficial truncal veins, we suggest treatment of perforating vein incompetence if it is the origin of the symptomatic varicose tributaries. Level of recommendation: grade 2 (weak), quality of evidence: C (low to very low)
- For patients with symptomatic reflux in the great or small saphenous vein and associated varicosities, we recommend ablation of the refluxing venous trunk and concomitant phlebectomy or ultrasound guided foam sclerotherapy of the varicosities with physician-compounded foam or commercial polidocanol endovenous microfoam. Level of recommendation: grade 1 (strong); quality of evidence: C (low to very low)
- For patients with symptomatic reflux in the anterior accessory or posterior accessory great saphenous vein, we suggest ablation of the refluxing venous trunk and concomitant phlebectomy or ultrasound-guided foam sclerotherapy of the varicosities with physician-compounded foam or commercial polidocanol endovenous microfoam. Level of recommendation: grade 2 (weak), quality of evidence: C (low to very low)
- For patients with symptomatic reflux in the great or small saphenous vein, we suggest ablation of the refluxing venous trunk and staged phlebectomy or ultrasound-guided foam sclerotherapy of the varicosities only if anatomic or medical reasons present. We suggest shared decision-making with the patient. Level of recommendation: grade 2 (weak); quality of evidence: C (low to very low)
- For patients with symptomatic reflux in the anterior accessory great saphenous vein or posterior accessory great saphenous vein, we suggest ablation of the refluxing venous trunk and staged phlebectomy or ultrasound-

guided foam sclerotherapy of the varicosities only if anatomic or medical reasons present. We suggest shared decision-making with the patient. Level of recommendation: grade 2 (weak), quality of evidence: C (low to very low)

- For patients with symptomatic reflux in the major superficial venous trunks and associated varicosities undergoing initial ablation alone, we recommend that patients be followed up for 3 months to assess the need for staged phlebectomy or ultrasound guided sclerotherapy for persistent or recurrent symptoms. Longer follow-up is recommended for patients with recurrent symptoms and for patients who participate in clinical trials. Level of recommendation: ungraded good clinical practice.

1.2.2 The 2020 Appropriate Use Criteria for Chronic Lower Extremity Venous Disease of the American Venous Forum, the Society for Vascular Surgery, the American Vein and Lymphatic Society, and the Society of Interventional Radiology

The guidelines' recommendations are accompanied by an appropriateness rating scale, outlined as follows[9]:

Table 8. Appropriateness Rating Scale for the 2020 American Venous Forum, the Society for Vascular Surgery, the American Vein and Lymphatic Society, and the Society of Interventional Radiology Guideline

Scale	Definition
7, 8, 9	Appropriate Treatment is a generally acceptable and reasonable approach for the indication. *and* Treatment is likely to improve the patient's health outcomes or survival.
4, 5, 6	May be appropriate Treatment may be an acceptable or reasonable approach for the indication. *or* Treatment may improve the patient's health outcomes or survival. *or* More research or patient information is necessary to classify the appropriateness of the indication.
2, 3	Rarely appropriate

	Treatment is not a generally acceptable or reasonable approach for the indication. *and* Treatment lacks clear benefit/risk advantage. *and* Treatment is rarely effective for the indication.
1	Never appropriate

The recommendations are summarized below[9]:

- Appropriateness criteria for saphenous vein ablation:
    - Ablation of the GSV (great saphenous vein) in a symptomatic patient with varicose veins, edema due to venous disease, skin or subcutaneous changes, healed or active ulcers (CEAP, Clinical, Etiology, Anatomy, and Pathophysiology, classes 2-6), when the GSV demonstrates axial reflux with or without SFJ reflux → Appropriate
    - Ablation of the below-knee GSV in a symptomatic patient with skin or subcutaneous changes, healed or active ulcers (CEAP classes 4-6), when there is segmental GSV reflux below the knee directed to the affected area → Appropriate
    - Ablation of the below-knee GSV in a symptomatic patient with edema due to venous disease (CEAP class 3), provided careful clinical judgment is exercised because of the potential for a wide range of coexisting nonvenous causes of edema → May be appropriate
    - Ablation of the SSV (small saphenous vein) in a symptomatic patient with varicose veins, edema due to venous disease, skin or subcutaneous changes, healed or active ulcers (CEAP classes 2-6), when the SSV demonstrates reflux directed to affected area → Appropriate
    - Ablation of the SSV with reflux that communicates with the GSV or thigh veins by intersaphenous vein, in a symptomatic patient with skin or subcutaneous changes, healed or active ulcers (CEAP classes 4-6), when the SSV demonstrates reflux directed to affected area → Appropriate
    - Ablation of the AAGSV (Anterior accessory great saphenous vein) in a symptomatic patient with varicose veins, skin or subcutaneous changes, healed or active ulcers (CEAP classes 2, 4-6), when the AAGSV demonstrates axial reflux directed to affected area → Appropriate

    - Ablation of the AAGSV in a symptomatic patient with edema due to venous disease (CEAP class 3), provided careful clinical judgment is exercised because of the potential for a wide range of coexisting nonvenous causes of edema → May be appropriate
    - Ablation of the AAGSV with no reflux, but GSV with reflux (CEAP classes 2-6) → Rarely appropriate
    - Therapeutic ablation for asymptomatic disease and visible veins (CEAP classes 1-2) → Rarely appropriate
    - Ablation for a vein with no reflux → Never appropriate
- Appropriateness criteria for treatment of nontruncal varicose veins with or without telangiectasia:
    - Treatment of nontruncal varicose veins with or without telangiectasia by sclerotherapy, ambulatory phlebectomy, or powered phlebectomy in a symptomatic patient with varicose veins, edema due to venous disease, skin or subcutaneous changes, healed or active ulcers (CEAP classes 2-6) → Appropriate
- Appropriateness criteria for management decisions for diseased tributaries associated with saphenous ablation:
    - Providing care for the diseased tributaries of an ablated saphenous vein either concomitantly or as a staged procedure → Appropriate
    - Referral of patient to another health care provider for care of diseased tributaries of an ablated vein → May be appropriate
    - Making no provisions for care of diseased tributaries → Rarely appropriate
- Appropriateness criteria for perforator veins:
    - Perforator vein treatment of veins with high outward flow and large diameter directed toward affected area in a symptomatic patient with skin or subcutaneous changes, healed or active ulcers (CEAP classes 4-6) → Appropriate
    - Perforator vein treatment of veins with high outward flow and large diameter directed toward affected area in a symptomatic patient with edema due to venous disease (CEAP class 3), provided careful clinical judgment is exercised because of the potential for a wide range of coexisting nonvenous causes of edema → May be appropriate
    - Perforator vein treatment of veins with high outward flow and large diameter directed toward affected area in a symptomatic patient with telangiectasia or varicose veins (CEAP classes 1-2) → Rarely appropriate

    - Perforator vein treatment in an asymptomatic patient with visible telangiectasia or varicose veins (CEAP classes 1-2) → Never appropriate

- Appropriateness criteria for iliac vein or inferior vena cava (IVC) stenting as first-line treatment:
    - Iliac vein or IVC stenting for obstructive disease without superficial truncal reflux as first-line treatment in a symptomatic patient with skin or subcutaneous changes, healed or active ulcers (CEAP classes 4-6) → Appropriate
    - Iliac vein or IVC stenting for obstructive disease with or without superficial truncal reflux as first-line therapy in a symptomatic patient with edema due to venous disease (CEAP class 3), provided careful clinical judgment is exercised because of the potential for a wide range of coexisting nonvenous causes of edema → May be appropriate
    - Iliac vein or IVC stenting for obstructive disease in an asymptomatic patient for iliac vein compression, such as May-Thurner compression, for incidental finding by imaging or telangiectasia (CEAP class 1) → Never appropriate
- Appropriateness criteria for timing and reimbursement decisions:
    - Scheduling the ablation of different veins on different days for clinical reasons including patient preference and safety is appropriate, whereas scheduling treatment on different days for reasons other than clinical reasons including patient preference and safety is not considered generally acceptable → Appropriate
    - Submitting separate charges for a single saphenous ablation requiring multiple access sites → Rarely appropriate
    - Submitting two or more separate charges for ablation of two continuous saphenous segments accessed with a single access point or multiple access points (eg, the above knee GSV and below-knee posterior accessory saphenous vein) → Rarely appropriate

1.2.3 The 2019 Compression Therapy After Invasive Treatment of Superficial Veins of the Lower Extremities: Clinical Practice Guidelines of the American Venous Forum, Society for Vascular Surgery, American College of Phlebology, Society for Vascular Medicine, and International Union of Phlebology

The guidelines' recommendations are accompanied by a grading scheme, outlined below in table 9[10]:

Table 9. Grading Scale for the 2019 for the American Venous Forum, Society for Vascular Surgery, American College of Phlebology, Society for Vascular Medicine, and International Union of Phlebology

Grade	Description of recommendation	Benefit vs risk	Methodologic quality of supporting evidence	Implications
1A	Strong recommendation, high-quality evidence	Benefits clearly outweigh risk and burdens, or vice versa	RCTs without important limitations or overwhelming evidence from observational studies	Strong recommendation, can apply to most patients in most circumstances without reservation
1B	Strong recommendation, moderate quality evidence	Benefits clearly outweigh risk and burdens, or vice versa	RCTs with important limitations (inconsistent results, methodologic flaws, indirect, or imprecise) or exceptionally strong evidence from observational studies	Strong recommendation, can apply to most patients in most circumstances without reservation
1C	Strong recommendation, low-quality or very low-quality evidence	Benefits clearly outweigh risk and burdens, or vice versa	Observational studies or case series	Strong recommendation but may change when higher quality evidence becomes available
2A	Weak recommendation, high-quality evidence	Benefits closely balanced with risks and burdens	RCTs without important limitations or overwhelming evidence from observational studies	Weak recommendation, best action may differ depending on circumstances or patients' or societal values
2B	Weak recommendation, moderate-quality evidence	Benefits closely balanced with risks and burdens	RCTs with important limitations (inconsistent results, methodologic flaws, indirect, or imprecise) or exceptionally strong evidence from observational studies	Weak recommendation, best action may differ depending on circumstances or patients' or societal values
2C	Weak recommendation, low-quality or very low-quality evidence	Uncertainty in the estimates of benefits and risk, and burdens; risk, benefit, and burdens may be closely balanced	Observational studies or case series	Very weak recommendations; other alternatives may be reasonable

RCTs, Randomized controlled trials.
Adapted from Guyatt G, Gutterman D, Baumann MH, Addrizzo-Harris D, Hylek EM, Phillips B, et al. Grading strength of recommendations and quality of evidence in clinical guidelines: report from an American College of Chest Physicians task force. Chest 2006;129:174-81.

Retrieved from Lurie F, Lal BK, Antignani PL, et al. Compression therapy after invasive treatment of superficial veins of the lower extremities: Clinical practice guidelines of the American Venous Forum, Society for Vascular Surgery, American College of Phlebology, Society for Vascular Medicine, and International Union of Phlebology. J Vasc Surg Venous Lymphat Disord. 2019;7(1):17-28. doi:10.1016/j.jvsv.2018.10.002.

The guidelines' recommendations are summarized below[10]:

- Compression after thermal ablation or stripping of the saphenous veins.

  When possible, we suggest compression (elastic stockings or wraps) should be used after surgical or thermal procedures to eliminate varicose veins. [GRADE - 2; LEVEL OF EVIDENCE - C]

- Dose of compression after thermal ablation or stripping of the varicose veins.

If compression dressings are to be used postprocedurally in patients undergoing ablation or surgical procedures on the saphenous veins, those providing pressures >20mmHg together with eccentric pads placed directly over the vein ablated or operated on provide the greatest reduction in postoperative pain. [GRADE - 2; LEVEL OF EVIDENCE - B]

- Duration of compression therapy after thermal ablation or stripping of the saphenous veins.

  In the absence of convincing evidence, we recommend best clinical judgment to determine the duration of compression therapy after treatment. [BEST PRACTICE]

- Compression therapy after sclerotherapy.

  We suggest compression therapy immediately after treatment of superficial veins with sclerotherapy to improve outcomes of sclerotherapy. [GRADE - 2; LEVEL OF EVIDENCE - C]

- Duration of compression therapy after sclerotherapy.

  In the absence of convincing evidence, we recommend best clinical judgment to determine the duration of compression therapy after sclerotherapy. [BEST PRACTICE]

- Compression after superficial vein treatment in patients with a venous leg ulcer.

  In a patient with a venous leg ulcer, we recommend compression therapy over no compression therapy to increase venous leg ulcer healing rate and to decrease the risk of ulcer recurrence. [GRADE - 1; LEVEL OF EVIDENCE - B]

- Compression after superficial vein treatment in patients with a mixed arterial and venous leg ulcer.

  In a patient with a venous leg ulcer and underlying arterial disease, we suggest limiting the use of compression to patients with ankle-brachial index exceeding 0.5 or if absolute ankle pressure is >60 mm Hg. [GRADE - 2; LEVEL OF EVIDENCE - C]

1.2.4 The Update of the French Society of Vascular Medicine (SFMV) Guidelines on the Conditions and Safety Measures Necessary for Thermal Ablation of the Saphenous Veins and Proposals for Unresolved Issues (2020)

The 2020 SFMV guidelines recommendations are summarized below[11]:

Table 10 below showcases Kabrick's classification which indicates which patients qualify for anticoagulation therapy post thermal ablation:

Table 10. Kabrick's Classification

Kabrick's classification		
Class	**Criteria**	**Treatment**
1	Thrombosis of the SFJ or SPJ not extending into the deep venous system	No particular treatment or monitoring
2	Non-occlusive thrombosis of the deep venous system extending over less than 50% of the area (in transverse section)	Anticoagulant treatment at prophylactic or curative dose with ultrasound re-evaluation at 1 week
3	Non-occlusive thrombosis of the deep venous system extending to more than 50% of the area (in transverse section)	Curative anticoagulant treatment with a check-up at 2 weeks and adjustment according to the regression or absence of regression of the thrombus
4	Occlusive deep venous thrombus	Curative anticoagulant treatment for a minimum of 6 weeks with adjustment according to the benefit/risk ratio

- No study comparing different injectable treatments at pro-phylactic doses in the context of EVTT of varicose veins was identified.
- Treatment with enoxaparin 4000 IU/day, fondaparinux 2.5 mg/day, or tinzaparin 3500 IU/day may be proposed.
- Two retrospective studies evaluating the use of rivaroxaban 10 mg reported respectively:
    - There was no significant difference between rivaroxaban 10 mg/day and fondaparinux 2.5 mg/day for 3 days in terms of thromboembolic extension or bleeding
    - The efficacy and reliability of rivaroxaban 10 mg/day for 5 to 10 days as an alternative therapeutic option for patients undergoing EVTT with or without associated phlebectomy
    - As yet, no study investigating apixaban has been published.
- The duration of thromboprophylaxis in published studies ranged from 3 to 7 days
- The risk factors for thrombosis are patient-related and should be managed on a case-by-case basis according to evaluation of the benefit/risk ratio.

- It is recommended to give anticoagulant treatment at prophylactic dose in patients at high risk of thromboembolism, notably those with a personal history of venous thromboembolism or known major thrombophilia.
- If anticoagulation is prescribed, the guidelines propose, in the absence of published data, the use of a direct oral anticoagulant (DOAC) or a low-molecular-weight heparin (LMWH) or fondaparinux at prophylactic dose for 7 days. This treatment may be combined with class 2 compression.
- The particular case of patients already receiving anticoagulant treatment scheduled to undergo thermal ablation:
    - Treatment with an anti-vitamin K (AVK) or direct oral anti-coagulant (DOAC) at curative dose does not constitute a contraindication to the TA procedure, which can be per-formed without adjustment of the anticoagulant dose.
    - The same applies to patients treated with an antiplatelet agent.

1.2.5 Application of Clinical Practice Guidelines for the Management of Varicose Veins and Chronic Venous Disease to Canadian Practice

The Canadian Society for Vascular Surgery published a two-part clinical guideline for the management of varicose veins and chronic venous disease[12,13]:

- Part One: Presentation, Assessment and Classification and Application of Clinical Practice Guidelines for the Management of Varicose Veins and Chronic Venous Disease to Canadian Practice
- Part Two: Treatment, Post-Treatment Follow Up and Ongoing Management

The recommendations listed were based on those published in the guidelines by the Society for Vascular Surgery/American Venous Forum, the European Society for Vascular Surgery, and the American Vein and Lymphatic Society, which were previously mentioned either in this report or in the previous CHI Chronic Venous Insufficiency report.

There are no additional recommendations.

Section 2.0 Drug Therapy in Chronic Venous Insufficiency

This section comprises three subsections: the first contains the newly recommended drugs, the second covers drug modifications, and the third outlines the drugs that have been withdrawn from the market.

2.1. Additions

No new drugs have been approved by the FDA or EMA for the treatment Chronic Venous Insufficiency since March 2020.

2.2. Modifications

Below are the modifications made to the list of Chronic Venous Insufficiency drugs since the CHI report in March 2020, reflecting the changes and updates:

Table 11. Prescribing Edits Modifications of Drugs Used for the Management of Chronic Venous Insufficiency

Drugs	PE modifications
Aescin	**CU**: recommended with compression therapy
Calcium dobesilate monohydrate	**CU**: can be used with diosmin in combination.
Diosmin	**CU**: can be used in combination with compression therapy, hesperidin, and calcium dobesilate
Diosmin, Hesperidin	**CU**: recommended to be used with compression therapy
Pentoxifylline	**ST**: this drug is considered as adjunctive therapy for the healing of VLUs. This should be considered after all standard of care measures have been implemented. **CU**: recommended to be used with compression therapy

2.3. Delisting

No drugs are recommended to be delisted from CHI formulary. *Please refer to **Drugs in the disease - section 2** of CHI Chronic Venous Insufficiency original clinical guidance for more information*

Section 3.0 Key Recommendations Synthesis

- Duration of post-operative compression after superficial interventions to be decided on an individual basis (class I recommendation)[7].
- Sclerotherapy as first choice for reticular veins (class I recommendation)[7].
- Below knee ECS (elastic compression stockings) 20–40 mmHg in patients with PTS (post-thrombotic syndrome) to reduce severity (class IIa recommendation)[7].
- Long term compression treatment in patients with healed VLU to reduce VLU recurrence (class IIa recommendation)[7].
- No interruption of anticoagulation to undergo EVTA (class IIa recommendation)[7].
- Multilayer or inelastic bandages or adjustable compression garments (≥ 40 mmHg ankle pressure) for patients with active VLU (from class IIa to class I)[7].
- For patients with symptomatic varicose veins and axial reflux in the great or small saphenous vein, who are candidates for intervention, we recommend superficial venous intervention over long-term compression stockings. Level of recommendation: grade 1 (strong), quality of evidence: B (moderate)[8].
- For patients with symptomatic varicose veins and axial reflux in the great saphenous vein, who are candidates for intervention, we recommend treatment with endovenous ablation over high ligation and stripping of the great saphenous vein because of less postprocedure pain and morbidity and an earlier return to regular activity. Level of recommendation: grade 1 (strong), quality of evidence: B (moderate)[8].
- Treatment of nontruncal varicose veins with or without telangiectasia by sclerotherapy, ambulatory phlebectomy, or powered phlebectomy in a symptomatic patient with varicose veins, edema due to venous disease, skin or subcutaneous changes, healed or active ulcers (CEAP classes 2-6) → Appropriate[9].
- Appropriateness criteria for iliac vein or inferior vena cava (IVC) stenting as first-line treatment: Iliac vein or IVC stenting for obstructive disease without superficial truncal reflux as first-line treatment in a symptomatic patient with

skin or subcutaneous changes, healed or active ulcers (CEAP classes 4-6) → Appropriate[9].

- Compression is recommended after thermal ablation or stripping of the saphenous veins [GRADE - 2; LEVEL OF EVIDENCE - C], sclerotherapy [GRADE - 2; LEVEL OF EVIDENCE - C], and superficial vein treatment in patients with a venous leg ulcer [GRADE - 1; LEVEL OF EVIDENCE - B][10].
- Dose of compression after thermal ablation or stripping of the varicose veins: If compression dressings are to be used postprocedurally in patients undergoing ablation or surgical procedures on the saphenous veins, those providing pressures >20mmHg together with eccentric pads placed directly over the vein ablated or operated on provide the greatest reduction in postoperative pain. [GRADE - 2; LEVEL OF EVIDENCE - B][10].
- In a patient with a venous leg ulcer and underlying arterial disease, we suggest limiting the use of compression to patients with ankle-brachial index exceeding 0.5 or if absolute ankle pressure is >60 mm Hg. [GRADE - 2; LEVEL OF EVIDENCE - C][10].
- It is recommended to give anticoagulant treatment at prophylactic dose in patients at high risk of thromboembolism, notably those with a personal history of venous thromboembolism or known major thrombophilia[11].
- If anticoagulation is prescribed, the guidelines propose, in the absence of published data, the use of a direct oral anticoagulant (DOAC) or a low-molecular-weight heparin (LMWH) or fondaparinux at prophylactic dose for 7 days. This treatment may be combined with class 2 compression[11].
- Treatment with an anti-vitamin K (AVK) or direct oral anti-coagulant (DOAC) at curative dose or antiplatelet agent does not constitute a contraindication to the TA procedure, which can be per-formed without adjustment of the anticoagulant dose[11].

Section 4.0 Conclusion

This report serves as **an annex to the previous CHI Chronic Venous Insufficiency report** and aims to provide recommendations to aid in the management of Chronic Venous Insufficiency. It is important to note that these recommendations should be utilized to support clinical decision-making and not replace it in the management of individual patients with Chronic Venous Insufficiency. Health professionals are expected to consider this guidance alongside the specific needs, preferences, and values of their patients when exercising their judgment.

Section 5.0 References

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Section 6.0 Appendices

Appendix A. Prescribing Edits Definition

I. Prescribing Edits (ensure consistent use of abbreviations, e.g., CU, ST)

Some covered drugs may have additional requirements, rules, or limits on coverage. These requirements and limits may include:

Prescribing edits Tools	Description
AGE (Age):	Coverage may depend on patient age
CU (Concurrent Use):	Coverage may depend upon concurrent use of another drug
G (Gender):	Coverage may depend on patient gender
MD (Physician Specialty):	Coverage may depend on prescribing physician's specialty or board certification
PA (Prior Authorization):	Requires specific physician request process
QL (Quantity Limits):	Coverage may be limited to specific quantities per prescription and/or time period
ST (Step Therapy):	Coverage may depend on previous use of another drug
EU (Emergency Use only):	This drug status on Formulary is only for emergency use
PE (Protocol Edit):	Use of drug is dependent on protocol combination, doses, and sequence of therapy

Appendix B. Chronic Venous Insufficiency Scope

Chronic Venous Insufficiency Scope

Section	Rationale/Updates
Section 1.1.1 **Management of Chronic Venous Disease- Clinical Practice Guidelines of the European Society for Vascular Surgery (ESVS) [2015]**	**European Society for Vascular Surgery (ESVS) 2022 Clinical Practice Guidelines on the Management of Chronic Venous Disease of the Lower Limbs** <u>Updated Recommendations:</u> • Class I recommendations: • Below knee ECS in patients with CVD clinical class C4b • Interventional treatment for CVD patients with symptomatic VVs (C2) • Interventional treatment for CVD patients with skin changes (C4-C6) • Procedures for superficial venous incompetence in the outpatient setting • Ultrasound guided tumescent anesthesia for EVTA (endovenous thermal ablation) • Duration of post-operative compression after superficial interventions to be decided on an individual basis • Risk assessment for VTE in patients undergoing superficial venous intervention • Selection of EVTA device left to the discretion of the treating physician • Foam sclerotherapy under ultrasound guidance • DUS (duplex ultrasound) of lower extremity veins in patients presenting with reticular veins and/or telangiectasias (C1) • In patients with C1 disease, treat larger incompetent veins before treating smaller veins • Sclerotherapy as first choice for reticular veins • Care taking not to injure the sural nerve, when cannulating the SSV (small saphenous vein) below midcalf • DUS surveillance after endovascular or surgical reconstruction for iliac vein outflow obstruction • Management of patients with iliac vein outflow obstruction by a multidisciplinary team • Objective arterial assessment for patients with active VLU (venous leg ulcer) • Early endovenous ablation in patients with active VLU, to accelerate healing • Superficial venous treatment in patients with healed VLU to reduce VLU recurrence • In patients with active or healed VLU, treat superficial veins even in the presence of deep venous incompetence

	• Exclude other causes of pain in female patients with pelvic pain and clinical suspicion of PeVD (pelvic venous disorders) • Specific DUS of pelvic escape points in patients with symptomatic VVs (varicose vein) of potential pelvic origin • Referral of patients with acute spontaneous bleeding from superficial veins for urgent assessment • Elastic compression in pregnant women with symptoms/signs of CVD • Class IIa: • Abdominal DUS part of initial assessment if supra-inguinal pathology is suspected • Exercise to improve venous symptoms in CVD patients • Below knee ECS (elastic compression stockings) 20–40 mmHg in patients with PTS (post-thrombotic syndrome) to reduce severity • Considering other causes of oedema in patients presenting with oedema (C3), before planning treatment • Use of buffered solutions for tumescent anesthesia • Individualized prophylaxis for superficial venous interventions • DUS surveillance 1 – 4 weeks after superficial venous interventions • Cyanoacrylate adhesive closure for incompetent saphenous trunk • High ligation and stripping of GSV (great saphenous vein), if EVTA options are not available • Endovenous ablation, division or ligation for incompetent PVs (perforating vein) requiring treatment • Sclerotherapy for telangiectasias • EVTA for AASV (anterior accessory saphenous vein) incompetence requiring treatment • EVTA for GSVs with large truncal diameter > 12 mm • UGFS (ultrasound-guided foam sclerotherapy) and/or phlebectomy for patients with symptomatic recurrent VVs without saphenous trunk incompetence • IVUS (intravascular ultrasound) to guide endovascular procedures for iliac vein outflow obstruction • Treatment of superficial incompetence, if combined superficial and deep venous incompetence • Surgical repair of popliteal venous aneurysm, if thromboembolic complications, or if saccular, fusiform > 20 mm or containing thrombus • Superimposed ECS ≤ 40 mmHg for small and recent onset VLU • Long term compression treatment in patients with healed VLU to reduce VLU recurrence

	• UGFS for ablation of sub-ulcer venous plexus in patients with VLU • Venous stenting for active or healed VLU and iliac vein outflow obstruction • Abdominal and/or transvaginal DUS in female patients with suspected pelvic venous disorders • Local procedures for VVs and related pelvic escape points • Pelvic vein embolization in patients with VVs of pelvic origin with pelvic symptoms • Local foam sclerotherapy after episode of acute bleeding of superficial veins • Weight loss in obese patients with CVD for improving venous outcomes • In obese patients, endovenous ablation of incompetent saphenous trunk requiring treatment • Class IIb: • Adjuvant intermittent pneumatic compression in patients with PTS to reduce severity • UGFS for treating incompetent saphenous trunks < 6 mm • Catheter directed foam sclerotherapy with/without tumescence for treating incompetent saphenous trunk • Mechanochemical ablation for incompetent saphenous trunk • Non-thermal non-tumescent ablation for incompetent SSV trunk • UGFS for AASV (anterior accessory saphenous vein) incompetence requiring treatment • Treatment of incompetent PVs in limbs with clinical class C4b, C5 or C6 • Treatment of foot and ankle VVs during or after ablation of more cranial reflux • Modified compression, under close supervision, for mixed arterial and venous ulcer • Concomitant PV treatment with truncal treatment for active VLU due to superficial and PV incompetence • Class III: • No treatment of lower leg incompetent PVs in patients with VVs without skin changes • No endovascular or surgical treatment of iliac vein outflow obstruction in patients without severe symptoms • No sustained compression for VLU, if ankle pressure < 60 mmHg, toe pressure < 30 mmHg or ABI (ankle brachial index) < 0.6

	• No pelvic vein embolization in patients with VVs of pelvic origin without pelvic symptoms • No interruption of anticoagulation to undergo EVTA • Upgraded recommendations: • Treatment of varicose tributaries by phlebectomies, foam sclerotherapy or both (from class IIa to class I) • Transcutaneous laser for treatment of telangiectasias (from class IIb to class IIa) • EVTA for treatment of SSV incompetence in preference to surgery and UGFS (from class IIa to class I) • Surgical or hybrid deep venous reconstructions in patients with iliac vein outflow obstruction, suffering from a recalcitrant VLU, severe PTS or disabling venous claudication (from class III to class IIb) • Multilayer or inelastic bandages or adjustable compression garments (≥ 40 mmHg ankle pressure) for patients with active VLU (from class IIa to class I) • Downgraded recommendations: • Post-procedural compression after UGFS or EVTA of an incompetent saphenous trunk (from class I to class IIa) • Ultrasound guided tumescent anesthesia for high ligation and stripping (from class IIa to class IIb) • Phlebectomies with preservation of the saphenous trunk (ASVAL) for uncomplicated varicose veins (C2) (from class IIa to class IIb) Level of evidence and classes of recommendations are state in table 3 and 4 Figure 1 showcases the 2020 update of the CEAP (Clinical Etiological Anatomical Pathophysiological) classification Table 5 showcases the contraindications to compression treatment
Section 1.1.2 **The 2022 Society for Vascular Surgery, American Venous Forum, and American Vein and Lymphatic Society clinical practice**	• For patients with symptomatic varicose veins and axial reflux in the great or small saphenous vein, who are candidates for intervention, we recommend superficial venous intervention over long-term compression stockings. Level of recommendation: grade 1 (strong), quality of evidence: B (moderate) • For patients with symptomatic varicose veins and axial reflux in the anterior accessory or posterior accessory great saphenous vein, who are

guidelines for the management of varicose veins of the lower extremities. Part I. Duplex Scanning and Treatment of Superficial Truncal Reflux	candidates for intervention, we suggest superficial venous intervention over compression stockings. Level of recommendation: grade 2 (weak), quality of evidence: C (low to very low) • For patients with symptomatic varicose veins and axial reflux in the superficial truncal veins, we suggest compression therapy for primary treatment if the patient's ambulatory status and underlying medical conditions warrant a conservative approach or, if the patient prefers conservative treatment, for either a trial period or definitive management. Level of recommendation: grade 2 (weak), quality of evidence: C (low to very low) • For patients with symptomatic varicose veins and axial reflux in the great saphenous vein, who are candidates for intervention, we recommend treatment with endovenous ablation over high ligation and stripping of the great saphenous vein because of less postprocedure pain and morbidity and an earlier return to regular activity. Level of recommendation: grade 1 (strong), quality of evidence: B (moderate) • For patients with symptomatic varicose veins and axial reflux in the small saphenous vein, who are candidates for intervention, we recommend treatment with endovenous ablation over ligation and stripping of the small saphenous vein because of less postprocedure pain and morbidity and an earlier return to regular activity. Level of recommendation: grade 1 (strong), quality of evidence: C (low to very low) • For patients with symptomatic varicose veins and axial reflux in the anterior accessory or posterior accessory great saphenous vein, who are candidates for intervention, we suggest treatment with endovenous ablation, with additional phlebectomy, if needed, over ligation and stripping of the accessory great saphenous vein because of less postprocedure pain and morbidity and an earlier return to regular activity. Level of recommendation: grade 2 (weak), quality of evidence: C (low to very low) • For patients with symptomatic varicose veins and axial reflux in the great or small saphenous vein, we recommend treatment with ligation and stripping of the saphenous vein if technology or expertise in endovenous ablation is not available or if the venous anatomy precludes endovenous treatment. Level of recommendation: grade 1 (strong), quality of evidence: B (moderate) • For patients with symptomatic varicose veins and axial reflux in the anterior accessory or the posterior accessory great saphenous vein, we suggest treatment with ligation and stripping of the accessory great saphenous vein, with additional phlebectomy, if needed, if technology or expertise in endovenous ablations is not available or if the venous

	anatomy precludes endovenous treatment. Level of recommendation: grade 2 (weak), quality of evidence: C (low to very low) • For patients with symptomatic varicose veins and axial reflux in the great saphenous vein who place a high priority on the long-term outcomes of treatment (quality of life and recurrence), we suggest treatment with endovenous laser ablation, radiofrequency ablation, or high ligation and stripping over physician-compounded ultrasound-guided foam sclerotherapy. Level of recommendation: grade 2 (weak) quality of evidence: B (moderate) • For patients with symptomatic varicose veins and axial reflux in the small saphenous vein who place a high priority on the long-term outcomes of treatment (quality of life and recurrence), we suggest treatment with laser ablation, radiofrequency ablation, or ligation and stripping from the knee to the upper or mid-calf over physician-compounded ultrasound-guided foam sclerotherapy. Level of recommendation: grade 2 (weak) quality of evidence: C (low to very low) • For patients with symptomatic varicose veins and axial reflux in the anterior accessory or posterior accessory great saphenous vein who place a high priority on the long-term outcomes of treatment (quality of life and recurrence), we suggest treatment of the refluxing superficial trunk with endovenous laser ablation, radiofrequency ablation, or high ligation and stripping, with additional phlebectomy, if needed, over physician-compounded ultrasound-guided foam sclerotherapy. Level of recommendation: grade 2 (weak), quality of evidence: C (low to very low) • For patients with symptomatic axial reflux of the great saphenous vein, we recommend both thermal and nonthermal ablation from the groin to below the knee, depending on the available expertise of the treating physician and the preference of the patient. Level of recommendation: grade 1 (strong), quality of evidence: B (moderate) • For patients with symptomatic axial reflux of the small saphenous vein, we recommend both thermal and nonthermal ablation from the knee to the upper or mid-calf, depending on the available expertise of the treating physician and the preference of the patient. Level of recommendation: grade 1 (strong), quality of evidence: C (low to very low) • For patients with symptomatic axial reflux of the anterior accessory or posterior accessory great saphenous vein, we suggest either thermal or nonthermal ablation, with additional phlebectomy, if needed, depending on the available expertise of the treating physician and the preference of the patient. Level of recommendation: grade 2 (weak), quality of evidence: C (low to very low) • For patients with varicose veins (CEAP class C2) who have significant,

	symptomatic axial reflux of the great or small saphenous vein, we recommend against treatment of incompetent perforating veins concomitant with initial ablation of the superficial truncal veins. Level of recommendation: grade 1 (strong), quality of evidence: C (low to very low) • For patients with varicose veins (CEAP class C2) who have significant, symptomatic axial reflux of the anterior accessory or posterior accessory great saphenous vein, we suggest against treatment of incompetent perforating veins concomitant with initial ablation of the superficial truncal veins. Level of recommendation: grade 2 (weak), quality of evidence: C (low to very low) • For patients with varicose veins (CEAP class C2) and persistent or recurrent symptoms after previous complete ablation of incompetent superficial truncal veins, we suggest treatment of perforating vein incompetence if it is the origin of the symptomatic varicose tributaries. Level of recommendation: grade 2 (weak), quality of evidence: C (low to very low) • For patients with symptomatic reflux in the great or small saphenous vein and associated varicosities, we recommend ablation of the refluxing venous trunk and concomitant phlebectomy or ultrasound guided foam sclerotherapy of the varicosities with physician-compounded foam or commercial polidocanol endovenous microfoam. Level of recommendation: grade 1 (strong); quality of evidence: C (low to very low) • For patients with symptomatic reflux in the anterior accessory or posterior accessory great saphenous vein, we suggest ablation of the refluxing venous trunk and concomitant phlebectomy or ultrasound-guided foam sclerotherapy of the varicosities with physician-compounded foam or commercial polidocanol endovenous microfoam. Level of recommendation: grade 2 (weak), quality of evidence: C (low to very low) • For patients with symptomatic reflux in the great or small saphenous vein, we suggest ablation of the refluxing venous trunk and staged phlebectomy or ultrasound-guided foam sclerotherapy of the varicosities only if anatomic or medical reasons present. We suggest shared decision-making with the patient. Level of recommendation: grade 2 (weak); quality of evidence: C (low to very low) • For patients with symptomatic reflux in the anterior accessory great saphenous vein or posterior accessory great saphenous vein, we suggest ablation of the refluxing venous trunk and staged phlebectomy or ultrasound-guided foam sclerotherapy of the varicosities only if anatomic or medical reasons present. We suggest shared decision-making with the patient. Level of recommendation: grade 2 (weak), quality of evidence: C

	(low to very low) • For patients with symptomatic reflux in the major superficial venous trunks and associated varicosities undergoing initial ablation alone, we recommend that patients be followed up for 3 months to assess the need for staged phlebectomy or ultrasound guided sclerotherapy for persistent or recurrent symptoms. Longer follow-up is recommended for patients with recurrent symptoms and for patients who participate in clinical trials. Level of recommendation: ungraded good clinical practice
Section 1.1.3 **The 2020 appropriate use criteria for chronic lower extremity venous disease of the American Venous Forum, the Society for Vascular Surgery, the American Vein and Lymphatic Society, and the Society of Interventional Radiology**	Appropriateness rating scale is outlined in table 8 • Appropriateness criteria for saphenous vein ablation: o Ablation of the GSV (great saphenous vein) in a symptomatic patient with varicose veins, edema due to venous disease, skin or subcutaneous changes, healed or active ulcers (CEAP, Clinical, Etiology, Anatomy, and Pathophysiology, classes 2-6), when the GSV demonstrates axial reflux with or without SFJ reflux → Appropriate o Ablation of the below-knee GSV in a symptomatic patient with skin or subcutaneous changes, healed or active ulcers (CEAP classes 4-6), when there is segmental GSV reflux below the knee directed to the affected area → Appropriate o Ablation of the below-knee GSV in a symptomatic patient with edema due to venous disease (CEAP class 3), provided careful clinical judgment is exercised because of the potential for a wide range of coexisting nonvenous causes of edema → May be appropriate o Ablation of the SSV (small saphenous vein) in a symptomatic patient with varicose veins, edema due to venous disease, skin or subcutaneous changes, healed or active ulcers (CEAP classes 2-6), when the SSV demonstrates reflux directed to affected area → Appropriate o Ablation of the SSV with reflux that communicates with the GSV or thigh veins by intersaphenous vein, in a symptomatic patient with skin or subcutaneous changes, healed or active ulcers (CEAP classes 4-6), when the SSV demonstrates reflux directed to affected area → Appropriate o Ablation of the AAGSV (Anterior accessory great saphenous vein) in a symptomatic patient with varicose veins, skin or subcutaneous changes, healed or active ulcers (CEAP classes 2, 4-6), when the AAGSV demonstrates axial reflux directed to affected area → Appropriate o Ablation of the AAGSV in a symptomatic patient with edema due

	to venous disease (CEAP class 3), provided careful clinical judgment is exercised because of the potential for a wide range of coexisting nonvenous causes of edema → May be appropriate o Ablation of the AAGSV with no reflux, but GSV with reflux (CEAP classes 2-6) → Rarely appropriate o Therapeutic ablation for asymptomatic disease and visible veins (CEAP classes 1-2) → Rarely appropriate o Ablation for a vein with no reflux → Never appropriate • Appropriateness criteria for treatment of nontruncal varicose veins with or without telangiectasia: o Treatment of nontruncal varicose veins with or without telangiectasia by sclerotherapy, ambulatory phlebectomy, or powered phlebectomy in a symptomatic patient with varicose veins, edema due to venous disease, skin or subcutaneous changes, healed or active ulcers (CEAP classes 2-6) → Appropriate • Appropriateness criteria for management decisions for diseased tributaries associated with saphenous ablation: o Providing care for the diseased tributaries of an ablated saphenous vein either concomitantly or as a staged procedure → Appropriate o Referral of patient to another health care provider for care of diseased tributaries of an ablated vein → May be appropriate o Making no provisions for care of diseased tributaries → Rarely appropriate • Appropriateness criteria for perforator veins: o Perforator vein treatment of veins with high outward flow and large diameter directed toward affected area in a symptomatic patient with skin or subcutaneous changes, healed or active ulcers (CEAP classes 4-6) → Appropriate o Perforator vein treatment of veins with high outward flow and large diameter directed toward affected area in a symptomatic patient with edema due to venous disease (CEAP class 3), provided careful clinical judgment is exercised because of the potential for a wide range of coexisting nonvenous causes of edema → May be appropriate o Perforator vein treatment of veins with high outward flow and large diameter directed toward affected area in a symptomatic patient with telangiectasia or varicose veins (CEAP classes 1-2) → Rarely appropriate o Perforator vein treatment in an asymptomatic patient with visible telangiectasia or varicose veins (CEAP classes 1-2) → Never

	appropriate • Appropriateness criteria for iliac vein or inferior vena cava (IVC) stenting as first-line treatment: o Iliac vein or IVC stenting for obstructive disease without superficial truncal reflux as first-line treatment in a symptomatic patient with skin or subcutaneous changes, healed or active ulcers (CEAP classes 4-6) → Appropriate o Iliac vein or IVC stenting for obstructive disease with or without superficial truncal reflux as first-line therapy in a symptomatic patient with edema due to venous disease (CEAP class 3), provided careful clinical judgment is exercised because of the potential for a wide range of coexisting nonvenous causes of edema → May be appropriate o Iliac vein or IVC stenting for obstructive disease in an asymptomatic patient for iliac vein compression, such as May-Thurner compression, for incidental finding by imaging or telangiectasia (CEAP class 1) → Never appropriate • Appropriateness criteria for timing and reimbursement decisions: o Scheduling the ablation of different veins on different days for clinical reasons including patient preference and safety is appropriate, whereas scheduling treatment on different days for reasons other than clinical reasons including patient preference and safety is not considered generally acceptable → Appropriate o Submitting separate charges for a single saphenous ablation requiring multiple access sites → Rarely appropriate o Submitting two or more separate charges for ablation of two continuous saphenous segments accessed with a single access point or multiple access points (eg, the above knee GSV and below-knee posterior accessory saphenous vein) → Rarely appropriate
Section 1.1.4 **The 2019 Compression therapy after invasive treatment of superficial veins of the lower extremities: Clinical practice guidelines of the American Venous Forum, Society for Vascular**	• Compression after thermal ablation or stripping of the saphenous veins. When possible, we suggest compression (elastic stockings or wraps) should be used after surgical or thermal procedures to eliminate varicose veins. [GRADE - 2; LEVEL OF EVIDENCE - C] • Dose of compression after thermal ablation or stripping of the varicose veins. If compression dressings are to be used postprocedurally in patients undergoing ablation or surgical procedures on the saphenous veins, those providing pressures >20mmHg together with eccentric pads placed directly over the vein ablated or operated on provide the greatest reduction in postoperative pain. [GRADE - 2; LEVEL OF EVIDENCE - B] • Duration of compression therapy after thermal ablation or stripping of

Surgery, American College of Phlebology, Society for Vascular Medicine, and International Union of Phlebology	the saphenous veins. In the absence of convincing evidence, we recommend best clinical judgment to determine the duration of compression therapy after treatment. [BEST PRACTICE] • Compression therapy after sclerotherapy. We suggest compression therapy immediately after treatment of superficial veins with sclerotherapy to improve outcomes of sclerotherapy. [GRADE - 2; LEVEL OF EVIDENCE - C] • Duration of compression therapy after sclerotherapy. In the absence of convincing evidence, we recommend best clinical judgment to determine the duration of compression therapy after sclerotherapy. [BEST PRACTICE] • Compression after superficial vein treatment in patients with a venous leg ulcer. In a patient with a venous leg ulcer, we recommend compression therapy over no compression therapy to increase venous leg ulcer healing rate and to decrease the risk of ulcer recurrence. [GRADE - 1; LEVEL OF EVIDENCE - B] • Compression after superficial vein treatment in patients with a mixed arterial and venous leg ulcer. In a patient with a venous leg ulcer and underlying arterial disease, we suggest limiting the use of compression to patients with ankle-brachial index exceeding 0.5 or if absolute ankle pressure is >60 mm Hg. [GRADE - 2; LEVEL OF EVIDENCE - C] Grading of recommendations assessment, development, and evaluation recommendations based on level of evidence is outlined in figure 2
Section 1.1.5 **The Update of the SFMV (French society of vascular medicine) guidelines on the conditions and safety measures necessary for thermal ablation of the saphenous veins and proposals for unresolved issues 2020**	• Table 9 showcases Kabrick's classification which indicates which patients qualify for anticoagulation therapy post thermal ablation • No study comparing different injectable treatments at pro-phylactic doses in the context of EVTT of varicose veins was identified. • Treatment with enoxaparin 4000 IU/day, fondaparinux 2.5 mg/day, or tinzaparin 3500 IU/day may be proposed. • Two retrospective studies evaluating the use of rivaroxaban 10 mg reported respectively: o There was no significant difference between rivaroxaban 10 mg/day and fondaparinux 2.5 mg/day for 3 days in terms of thromboembolic extension or bleeding o The efficacy and reliability of rivaroxaban 10 mg/day for 5 to 10 days as an alternative therapeutic option for patients undergoing EVTT with or without associated phlebectomy

	○ As yet, no study investigating apixaban has been published. • The duration of thromboprophylaxis in published studies ranged from 3 to 7 days • The risk factors for thrombosis are patient-related and should be managed on a case-by-case basis according to evaluation of the benefit/risk ratio. • It is recommended to give anticoagulant treatment at prophylactic dose in patients at high risk of thromboembolism, notably those with a personal history of venous thromboembolism or known major thrombophilia. • If anticoagulation is prescribed, the guidelines propose, in the absence of published data, the use of a direct oral anticoagulant (DOAC) or a low-molecular-weight heparin (LMWH) or fondaparinux at prophylactic dose for 7 days. This treatment may be combined with class 2 compression. • The particular case of patients already receiving anticoagulant treatment scheduled to undergo thermal ablation: ○ Treatment with an anti-vitamin K (AVK) or direct oral anti-coagulant (DOAC) at curative dose does not constitute a contraindication to the TA procedure, which can be per-formed without adjustment of the anticoagulant dose. ○ The same applies to patients treated with an antiplatelet agent.
HTA Pharmacoeconomics Analysis	Recommendations from HTA bodies should be added under each drug therapy section as they are missing from the previous/initial document.

Appendix C. MeSH Terms PubMed

C.1 PubMed Search for Chronic Venous Insufficiency:

Query	Filters	Search Details	Results
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Query	Filters	Search Details	Results
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Query	Filters	Search Details	Results
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Query	Filters	Search Details	Results
(((((((Telangiectasis[MeSH Terms]) OR (Telangiectases[Title/Abstract])) OR (Telangiectasia[Title/Abstract])) OR (Telangiectasias[Title/Abstract])) OR (Spider Veins[Title/Abstract])) OR (Spider Vein[Title/Abstract])) OR (Vein, Spider[Title/Abstract])) OR (Veins, Spider[Title/Abstract])	Guideline, in the last 5 years	("telangiectasis"[MeSH Terms] OR "Telangiectases"[Title/Abstract] OR "Telangiectasia"[Title/Abstract] OR "Telangiectasias"[Title/Abstract] OR "spider veins"[Title/Abstract] OR "spider vein"[Title/Abstract] OR (("Veins"[MeSH Terms] OR "Veins"[All Fields] OR "Vein"[All Fields]) AND "Spider"[Title/Abstract]) OR "veins spider"[Title/Abstract]) AND ((y_5[Filter]) AND (guideline[Filter]))	4

Appendix D. Treatment Algorithm

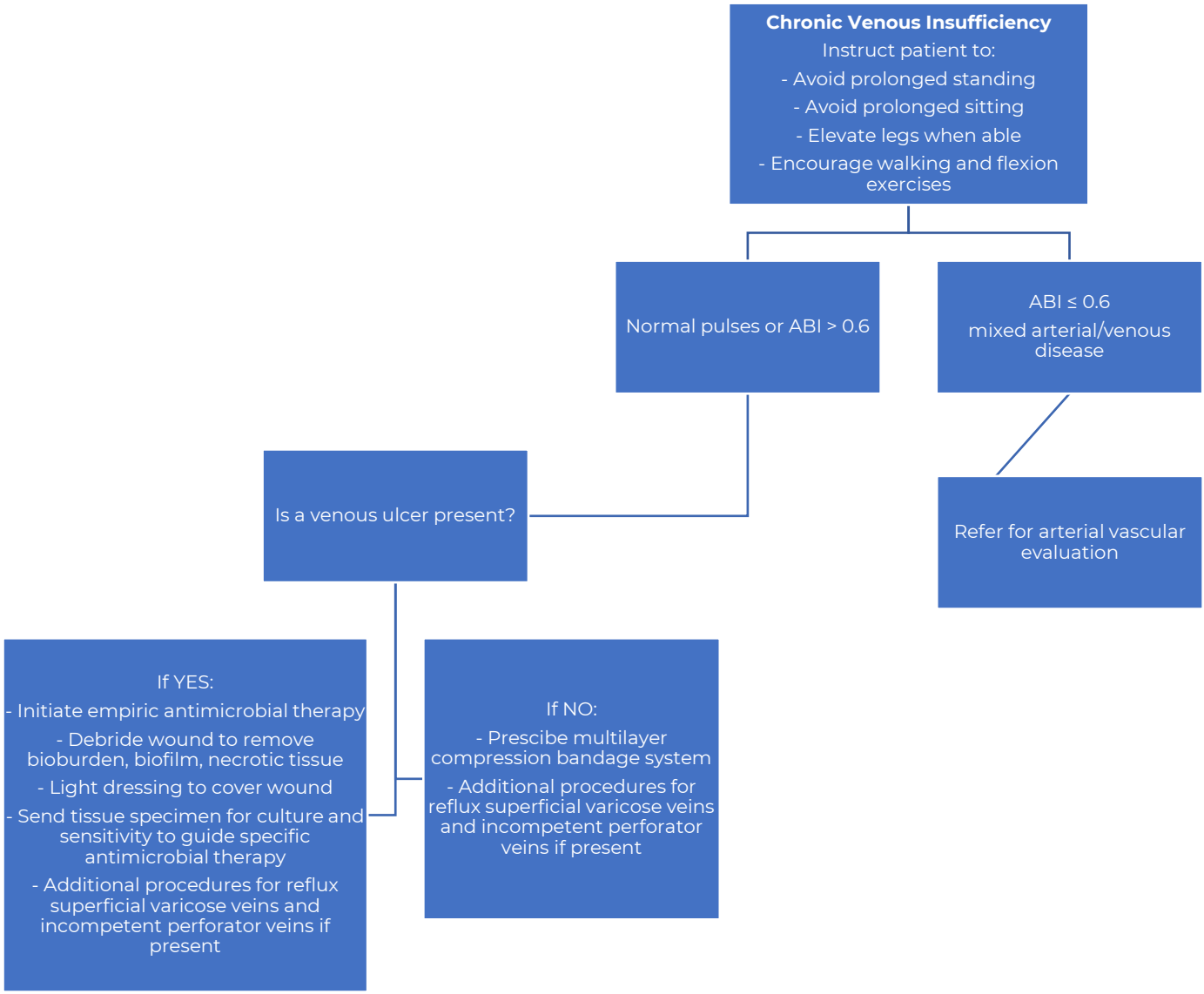

Figure 1. *Treatment Algorithm for the Management of Chronic Venous Insufficiency*