



## SASCI Position Statement:

### Role of Orbital Atherectomy in the Management of Calcified Coronary Lesions Updated Statement 7 April 2026

Heavily calcified coronary lesions represent a particularly challenging subset of coronary artery disease. Inadequate plaque modification is associated with both acute procedural complications and adverse long-term outcomes. Contemporary international guidance from organisations such as SCAI, ACC, ESC and EAPCI emphasises the importance of appropriate plaque-modification strategies when treating calcified coronary lesions.

In the acute setting, insufficient lesion preparation may result in suboptimal stent expansion, coronary dissection, and acute vessel closure. Over the longer term, these limitations are associated with higher rates of restenosis, recurrent coronary events, and the need for repeat revascularisation. Optimal lesion preparation prior to stent implantation is therefore essential.

Interventional cardiologists currently have access to a range of complementary technologies for the management of calcified lesions. These include non-compliant balloons, cutting and scoring balloons, intravascular lithotripsy, and atherectomy devices (both rotational and orbital).

Given the heterogeneity of lesion morphology, no single modality is universally applicable; device selection should be individualised based on lesion characteristics and clinical context.

**Orbital atherectomy** represents an important addition to the contemporary armamentarium for calcium modification. Its design and mechanism of action confer several potential advantages:

- **Enhanced luminal gain:** The orbital motion of the crown allows ablation over a wider arc, facilitating greater luminal enlargement. This may enable the deployment of larger diameter stents, which has been associated with lower rates of in-stent restenosis and improved long-term outcomes.
- **Device efficiency and potential cost benefit:** A single crown can be used across a range of vessel sizes, potentially reducing the need for multiple device exchanges.
- **Safety profile:** Bidirectional ablation (during both advancement and retraction) reduces the risk of device entrapment.
- **Controlled plaque modification:** The mechanism allows for gradual and predictable calcium modification.
- **Ease of use:** The system is relatively user-friendly within appropriately trained hands.

In light of these considerations, the South African Society of Cardiovascular Intervention supports the use of orbital atherectomy as part of a comprehensive, lesion-specific strategy for the management of calcified coronary disease. Its appropriate application has the potential to improve procedural success and contribute to better long-term patient outcomes.