Web addendum table 1. Summary of main recommendations regarding diagnosis of stable angina/stable coronary artery disease from the National Institute for Health and Care Excellence* and the European Society of Cardiology

	NICE	ESC
Diagnostic principles	Diagnose stable angina based on one of the following: clinical assessment alone or clinical assessment plus diagnostic testing (that is, anatomical testing for obstructive CAD and/or functional testing for myocardial ischaemia) if there is uncertainty over the diagnosis based on clinical assessment alone.	These guidelines recommend a stepwise approach for decision making in patients with suspected stable CAD. The process begins with a clinical assessment of the probability that stable CAD is present in a particular patient (determination of PTP; Step 1). Step 1 is followed by non-invasive testing to establish the diagnosis of stable CAD or non-obstructive atherosclerosis (typically by performing carotid ultrasound) in patients with an intermediate probability of disease (Step 2). Once the diagnosis of stable CAD has been made, OMT is instituted and stratification for risk of subsequent events (referred to as 'event risk' in the following text) is carried out (Step 3) - usually on the basis of available non-invasive tests - in order to select patients who may benefit from invasive investigation and revascularisation. Depending on the severity of symptoms, early ICA may be performed with appropriate invasive confirmation of the significance of a stenosis (FFR) and subsequent revascularisation, bypassing non-invasive testing in Steps 2 and 3.
Clinical assessment	Clinical assessment is based upon the history of chest pain (typical, atypical, or non-cardiac) and the estimated likelihood of CAD (based on demographics and risk factors for CAD).	Although many non-invasive cardiac investigations can be used to support the diagnosis of stable CAD, the optimal use of resources is only achieved if pre-test probabilities, based on simple clinical findings, are first taken into consideration. Before any testing is considered one must assess the general health, comorbidities and quality of life of the patient. If assessment suggests that revascularisation is unlikely to be an acceptable option, further testing may be reduced to a clinically indicated minimum and appropriate therapy should be instituted, which may include a trial of anti-anginal medication even if a diagnosis of stable CAD has not been fully demonstrated.
Diagnosis by clinical assessment alone	Unless clinical suspicion is raised based on other aspects of the history and risk factors, exclude a diagnosis of stable angina if the pain is non-anginal.	If the pain is clearly non-anginal other diagnostic testing may be indicated to identify gastrointestinal, pulmonary or musculoskeletal causes of chest pain.

	If people have features of typical angina based on clinical assessment and their estimated likelihood of CAD is >90%, further diagnostic investigation is unnecessary. Manage as angina.	In patients with a clinical PTP >85%, the diagnosis of CAD should be made clinically and further testing will not improve accuracy.
	If the estimated likelihood of CAD is <10%, first consider causes of chest pain other than angina caused by CAD.	Patients in whom anginal pain may be possible but who have a very low probability of significant CAD <15% should have other cardiac causes of chest pain excluded and their CV risk factors adjusted, based on risk score assessment. No specific non-invasive stress testing should be performed. In patients with repeated, unprovoked attacks of chest pain only at rest, vasospastic angina should be considered and diagnosed, and treated appropriately.
	Consider investigating other causes of angina, such as hypertrophic cardiomyopathy, in people with typical angina-like chest pain and a low likelihood of CAD (estimated at <10%).	
Blood tests	Arrange blood tests to identify conditions which exacerbate angina, such as anaemia, for all people being investigated for stable angina.	Full blood count including haemoglobin and white cell count is recommended in all patients. (I B) It is recommended that screening for type 2 diabetes mellitus in patients with suspected and established stable CAD is initiated with HbA1c and fasting plasma glucose and that an OGTT is added if HbA1c and fasting plasma glucose are inconclusive. (I B) Creatinine measurement and estimation of renal function (creatinine clearance) are recommended in all patients. (I B) A fasting lipid profile is recommended in all patients. (I C)
Diagnostic testing - ECG	For people in whom stable angina cannot be diagnosed or excluded on the basis of the clinical assessment alone, take a resting 12-lead ECG as soon as possible after presentation. Do not rule out a diagnosis of stable angina on the basis of a normal resting 12-lead ECG.	All patients with suspected CAD should have a resting 12-lead ECG recorded. (I C) A normal resting ECG is not uncommon, even in patients with severe angina, and does not exclude the diagnosis of ischaemia.
Diagnostic testing - chest x-ray	Only consider CXR if other diagnoses, such as a lung tumour, are suspected.	CXR is recommended in patients with atypical presentation or suspicion of pulmonary disease. (I C) CXR should be considered in patients with suspected heart failure. (IIa C)

Diagnostic testing - echocardiography		A resting transthoracic echocardiogram is recommended in all patients for: a) exclusion of alternative causes of angina; b) identification of regional wall motion abnormalities suggestive of CAD; c) measurement of LVEF for risk stratification purpose d) evaluation of diastolic function. (I B)
Diagnostic testing - carotid artery intima-media thickness		Ultrasound of the carotid arteries should be considered to be performed by adequately trained clinicians to detect increased IMT and/or plaque in patients with suspected stable CAD without known atherosclerotic disease. (IIa C)
Diagnostic testing - invasive coronary angiography	In people without confirmed CAD, in whom stable angina cannot be diagnosed or excluded based on clinical assessment alone, estimate the likelihood of CAD (using a risk table). Arrange further diagnostic testing as follows: If the estimated likelihood of CAD is 61-90%, offer ICA as the first-line diagnostic investigation if coronary revascularisation is being considered and ICA is clinically appropriate and acceptable to the person.	Patients with a reduced LVEF of <50% and typical angina are at high risk for cardiovascular events and they should be offered ICA without previous testing. In patients with severe angina at a low level of exercise and those with a clinical constellation indicating a high event risk, proceeding directly to ICA is a reasonable option. Under such circumstances, the indication for revascularisation should depend on the result of intraprocedural FFR testing when indicated.
Diagnostic testing - functional imaging	In people without confirmed CAD, in whom stable angina cannot be diagnosed or excluded based on clinical assessment alone, estimate the likelihood of CAD (using a risk table). Arrange further diagnostic testing as follows: If the estimated likelihood of CAD is 30-60%, offer functional imaging as the first-line diagnostic investigation.	Patients (without the combination of typical angina and LVEF <50%) with a PTP of 15-85% should undergo further non-invasive testing. An imaging stress test is recommended as the initial test for diagnosing stable CAD if the PTP is between 66–85% or if PTP is between 15-85% and the LVEF is <50% in patients without typical angina. (I B) And is the preferred option for all patients (excluding those with LVEF <50% and typical angina) with a PTP 15-85%, where the resource and expertise is available. (I B)
Diagnostic testing - CT calcium scoring and CT coronary angiography	For people with chest pain in whom stable angina cannot be diagnosed or excluded by clinical assessment alone and who have an estimated likelihood of CAD of 10–29% offer CT calcium scoring. If the calcium score is:	CTCA should be considered as an alternative to stress imaging techniques for ruling out stable CAD in patients within the lower range of intermediate PTP (15-50%) for stable CAD in whom good image quality can be expected. (IIa C)

	zero, consider other causes of chest pain; 1–400, offer 64-slice (or above) CTCA; >400, offer ICA. If this is not clinically appropriate or acceptable to the person and revascularisation is not being considered, offer non-invasive functional imaging.	CTCA should be considered in patients within the lower range of intermediate PTP (15-50%) for stable CAD after an inconclusive exercise ECG or stress imaging test or who have contraindications to stress testing in order to avoid otherwise necessary ICA if fully diagnostic image quality of CTCA can be expected. (IIa C)
	For people with chest pain in whom stable angina cannot be diagnosed or excluded by clinical assessment alone and who have an estimated likelihood of CAD of 61–90%, offer non-invasive functional imaging if: coronary revascularisation is not being considered or ICA is not clinically appropriate or acceptable to the person.	Patients with suspected stable CAD, in whom comorbidities make revascularisation inadvisable, should be treated medically but pharmacologic stress imaging may be an option if it appears necessary to verify the diagnosis.
	For people with confirmed CAD (for example, previous MI, revascularisation, previous angiography), offer non-invasive functional testing when there is uncertainty about whether chest pain is caused by myocardial ischaemia. An exercise ECG may be used instead of functional imaging	
Additional diagnostic testing	Offer non-invasive functional imaging for myocardial ischaemia if ICA or 64-slice (or above) CTCA has shown CAD of uncertain functional significance. Offer ICA as a second-line investigation when the results of non-invasive functional imaging are inconclusive.	
Exercise ECG	Do not use exercise ECG to diagnose or exclude stable angina for people without known CAD.	Exercise ECG is recommended as the initial test for establishing a diagnosis of stable CAD in patients with symptoms of angina and intermediate PTP of CAD (15–65%), free of anti-ischaemic drugs, unless they cannot exercise or display ECG changes which make the ECG non evaluable. (I B) This Task Force recommends not employing the exercise stress test in such higher-risk populations (PTP >65%) for diagnostic purposes. However, the test may nevertheless provide valuable prognostic information in such populations.

CAD, coronary artery disease; CTCA, CT coronary angiography; CXR, chest x-ray; ECG, electrocardiogram; FFR, fractional flow reserve; ICA, invasive coronary angiography; LVEF, left ventricular ejection fraction; OGTT, oral glucose tolerance test; OMT, optimal medical therapy; PTP, pre-test probability.

*Terminology used by NICE: "Offer" was used for an intervention that "should" be used because the guideline development group was confident that it would do more good than harm and that it would be cost effective. "Consider" was used for interventions which "could" be used because the guideline development group was confident that the intervention

would do more good than harm for most patients and that it would be cost effective, however, other options were similarly cost effective, or some patients may opt for a less effective but cheaper intervention.

Web addendum table 2. Summary of main recommendations regarding general considerations and lifestyle management in patients with stable angina/stable coronary artery disease from the National Institute for Health and Care Excellence and the European Society of Cardiology

	NICE	ESC
General considerations	Clearly explain stable angina, including factors that can provoke angina and its long-term course and management. Several other statements recommending the provision of information and support. Do not exclude people with stable angina from treatment based on their age alone.	Educate patients about disease, risk factors, and treatment strategy. (I C)
Gender	Do not investigate or treat symptoms of stable angina differently in men and women or in different ethnic groups.	Compared with men, women have higher rates of procedural complication, including mortality, stroke, and vascular complications. Women also have higher complications rates following CABG, but although the numbers of women included in trials are limited, results do not indicate gender-related differences in outcome. Nonetheless, it may be prudent to adopt a more conservative approach in undertaking PCI and CABG in women.*
Smoking	Assess the patient's need for lifestyle advice (for example about exercise, stopping smoking, diet, and weight control) and psychological support, and offer interventions as necessary.	Smoking status should be assessed and all smokers advised to quit and offered cessation assistance. Nicotine replacement therapy should be offered routinely.
Physical activity	Do not offer vitamin or fish oil supplements to treat stable angina. Inform people that there is no evidence that they help people with stable angina.	Undertake moderate to vigorous intensity aerobic exercise for 30 minutes $\geq$3 times per week; Light intensity exercise for sedentary patients.
Diet		Maintain BMI <25 kg/m^2. Saturated fatty acids to account for <10% total energy intake. Trans unsaturated fatty acids <1% of total energy intake. <5 g of salt per day. 30-45 g of fibre per day. 200 g of fruit per day. 200 g of vegetables per day. Fish at least twice a week, one being oily fish. Limit alcohol to 2 glasses (20 g alcohol) per day for men and 1

		glass (10 g of alcohol) per day for women. Increase N-3 polyunsaturated fatty acids (PUFA) intake through fish consumption rather than through supplements.
Psychological factors	Explore and address issues according to the patient's needs, which may include concerns about the impact of stress, anxiety or depression on angina.	Patients should be assessed for psychosocial distress and appropriate care offered.
Diabetes mellitus	Not mentioned.	Control glycated haemoglobin (HbA1c) to <7.0%.
Blood pressure	Offer treatment for high blood pressure in line with NICE hypertension clinical guideline* – Aim for BP <140/90 mmHg in patients aged <80 years and <150/90 mmHg in patients aged ≥80 years.	Lower BP to <140/90 mmHg and to <140/85 mmHg in diabetics.
Cardiac rehabilitation	Not recommended – the clinical and cost-effectiveness of cardiac rehabilitation for stable angina was highlighted as a research question.	Should be considered in all patients with CAD, including those with stable angina.
Influenza vaccination	Not mentioned.	Annual vaccination recommended for patients with CAD, particularly the elderly.
Hormone replacement therapy	Not mentioned.	Not recommended for primary or secondary prevention of CAD.

*The recommendation about gender was made in the "special groups or considerations" section of the 2013 ESC stable coronary artery disease guideline. There were no comments regarding gender in the 2014 ESC/EACTS guidelines on myocardial revascularization. †This was NICE clinical guideline 34 when the NICE stable angina guideline was published. It recommended a target BP <140/90 mmHg in patients with hypertension and existing cardiovascular disease irrespective of age. An update to the hypertension guidance, NICE clinical guideline 127, was subsequently published in August 2011 which recommended different blood pressure targets for patients with treated hypertension above and below the age of 80 years.

BMI, body mass index; BP, blood pressure; CABG, coronary artery bypass graft surgery; CAD, coronary artery disease; NICE, National Institute for Care and Health Excellence; PCI, percutaneous coronary intervention.

Web addendum table 3. Summary of main recommendations relating to risk stratification in patients with stable angina/stable coronary artery disease from the National Institute for Health and Care Excellence and the European Society of Cardiology

	NICE	ESC
General principles		In these guidelines, patients with an annual mortality >3% are defined as high event risk patients. Both ischaemia- and anatomy-oriented indices come to similar conclusions in identifying which patients are at such high event risk with medical treatment alone that revascularisation procedures become beneficial in terms of prognosis. Therefore, in these guidelines, it is the goal of an event risk-driven diagnostic strategy to identify patients with an annual mortality >3% per year. The risk assessment sequence can be described as: (1) Risk stratification by clinical evaluation (2) Risk stratification by ventricular function (3) Risk stratification by response to stress testing (4) Risk stratification by coronary anatomy. Event risk stratification generally follows a pyramidal structure, with all patients having event risk stratification by clinical evaluation as the most basic requirement, proceeding to assessment of ventricular function by resting echocardiography and, in the majority, to non-invasive assessment of ischaemia/coronary anatomy (which is usually obtained in the process of making a diagnosis of stable CAD). ICA for risk stratification will only be required in a selected subgroup of patients.
Severe symptoms - coronary angiography	Offer ICA to guide treatment strategy for people with stable angina whose symptoms are not satisfactorily controlled with OMT. Additional non-invasive or invasive functional testing may be required to evaluate angiographic findings and guide treatment decisions.	ICA (with FFR when necessary) is recommended for risk stratification in patients with severe stable angina (CCS 3) or with a clinical profile suggesting a high event risk, particularly if symptoms are inadequately responding to medical treatment. (I C)
Left ventricular function - echocardiography		Resting echocardiography is recommended to quantify LV function in all patients with suspected stable CAD. (I C)
Controlled symptoms - explanation	Discuss the following with people whose symptoms are satisfactorily controlled with optimal medical treatment:	

	their prognosis without further investigation the likelihood of having LMS or proximal 3 vessel disease; the availability of CABG to improve the prognosis in a subgroup of people with LMS or proximal 3 vessel disease; the process and risks of investigation; the benefits and risks of CABG, including the potential survival gain.	
Functional or non-invasive anatomical testing	After discussion with people whose symptoms are satisfactorily controlled with optimal medical treatment, consider a functional or non-invasive anatomical test to identify people who might gain a survival benefit from surgery. Functional or anatomical test results may already be available from diagnostic assessment.	Symptomatic patients with suspected or known CAD should undergo stress testing to perform event risk stratification and use this as the basis for therapeutic decisions if they are candidates for coronary revascularisation. (I B)
Coronary angiography	After discussion with people whose symptoms are satisfactorily controlled with optimal medical treatment, consider coronary angiography when: functional testing indicates extensive ischaemia or non-invasive anatomical testing indicates the likelihood of LMS or proximal 3 vessel disease and revascularisation is acceptable and appropriate.	ICA (with FFR when necessary) is recommended for patients with mild or no symptoms with medical treatment in whom non-invasive risk stratification indicates a high event risk and revascularisation is considered for improvement of prognosis. (I C)

CABG, coronary artery bypass graft surgery; CAD, coronary artery disease; CCS, Canadian Cardiovascular Society; FFR, fractional flow reserve; ICA, invasive coronary angiography; LMS, left main stem; OMT, optimal medical therapy.

Web addendum table 4. Summary of main recommendations regarding myocardial revascularisation in patients with stable angina/stable coronary artery disease from the National Institute for Health and Care Excellence and the European Society of Cardiology

	NICE	ESC
Revascularisation	Consider revascularisation for people whose symptoms are not satisfactorily controlled with OMT.	Any significant stenosis with limiting symptoms or symptoms unresponsive to OMT (including all of the groups described in the revascularisation for prognosis section).
CABG for symptoms	Offer CABG to people with stable angina and suitable coronary anatomy when: their symptoms are not satisfactorily controlled with optimal medical treatment and revascularisation is considered appropriate and PCI is not appropriate.	
PCI for symptoms	Offer PCI to people with stable angina and suitable coronary anatomy when: their symptoms are not satisfactorily controlled with optimal medical treatment and revascularisation is considered appropriate and CABG is not appropriate.	
CABG v PCI	When either procedure would be appropriate, explain to the person the risks and benefits of PCI and CABG for people with anatomically less complex disease whose symptoms are not satisfactorily controlled with optimal medical treatment. If the person does not express a preference, take account of the evidence that suggests that PCI may be the more cost-effective procedure in selecting the course of treatment.	In general:
		CABG for:
		LMS with 2/3 vessel disease, Syntax score $\geq$33, low surgical risk
		3 vessel disease, Syntax score $\geq$23, low surgical risk
	When either procedure would be appropriate, take into account the potential survival advantage of CABG over PCI for people with multi-vessel disease whose symptoms are not satisfactorily controlled with optimal medical treatment and who: have diabetes or are over 65 years or have anatomically complex three vessel disease, with or without involvement of the LMS.	PCI for:
		1 or 2 vessel disease without proximal LAD
		LMS +/- 1 vessel disease, ostium/mid shaft, high surgical risk
	Consider the relative risks and benefits of CABG and PCI for people with stable angina using a systematic approach to assess the severity and complexity of the person's coronary disease, in addition to other relevant clinical factors and comorbidities.	Heart team discussion for:
		LMS with 2/3 vessel disease, Syntax score $\leq$32
	Ensure that there is a regular multidisciplinary team meeting to	

	discuss the risks and benefits of continuing drug treatment or revascularisation strategy (CABG or PCI) for people with stable angina. The team should include cardiac surgeons and interventional cardiologists. Treatment strategy should be discussed for the following people, including but not limited to: people with LMS or anatomically complex 3 vessel disease people in whom there is doubt about the best method of revascularisation because of the complexity of the coronary anatomy, the extent of stenting required or other relevant clinical factors and comorbidities. Ensure people with stable angina receive balanced information and have the opportunity to discuss the benefits, limitations and risks of continuing drug treatment, CABG and PCI to help them make an informed decision about their treatment. When either revascularisation procedure is appropriate, explain to the person: The main purpose of revascularisation is to improve the symptoms of stable angina. CABG and PCI are effective in relieving symptoms. Repeat revascularisation may be necessary after either CABG or PCI and the rate is lower after CABG. Stroke is uncommon after either CABG or PCI, and the incidence is similar between the two procedures. There is a potential survival advantage with CABG for some people with multi-vessel disease. Inform the person about the practical aspects of CABG and PCI. Include information about: vein and/or artery harvesting, likely length of hospital stay, recovery time, drug treatment after the procedure.	LMS +/- 1 vessel disease, distal bifurcation 3 vessel disease, Syntax score $\leq$22 1 or 2 vessel disease with proximal LAD A heart team approach to revascularisation is recommended in patients with unprotected LMS, 2-3 vessel disease, diabetes, or comorbidities. (I C)
Revascularisation for prognosis	Consider CABG for people with stable angina and suitable coronary anatomy whose symptoms are satisfactorily controlled with OMT, but coronary angiography indicates LMS disease or proximal three vessel disease.	In asymptomatic patients, the decision will be guided by the extent of ischaemia on stress testing. LMS >50% diameter stenosis (with documented ischaemia or FFR $\leq$0.80 for diameter stenosis 50-90%). (I A) Proximal LAD >50% diameter stenosis (with documented ischaemia or FFR $\leq$0.80 for diameter stenosis <90%). (I A)

		2-3 vessel disease with impaired LV function/CHF. (I B) Large area of ischaemia (>10% LV myocardium). (I B) Single remaining vessel >50% diameter stenosis (with documented ischaemia or FFR <0.80 for angiographic stenosis <90%). (I C)

CABG, coronary artery bypass graft surgery; CHF, congestive heart failure; FFR, fractional flow reserve; OMT, optimal medical therapy; PCI, percutaneous coronary intervention; LAD, left anterior descending artery; LMS, left main stem; LV, left ventricular.