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The Problem With Using Stents

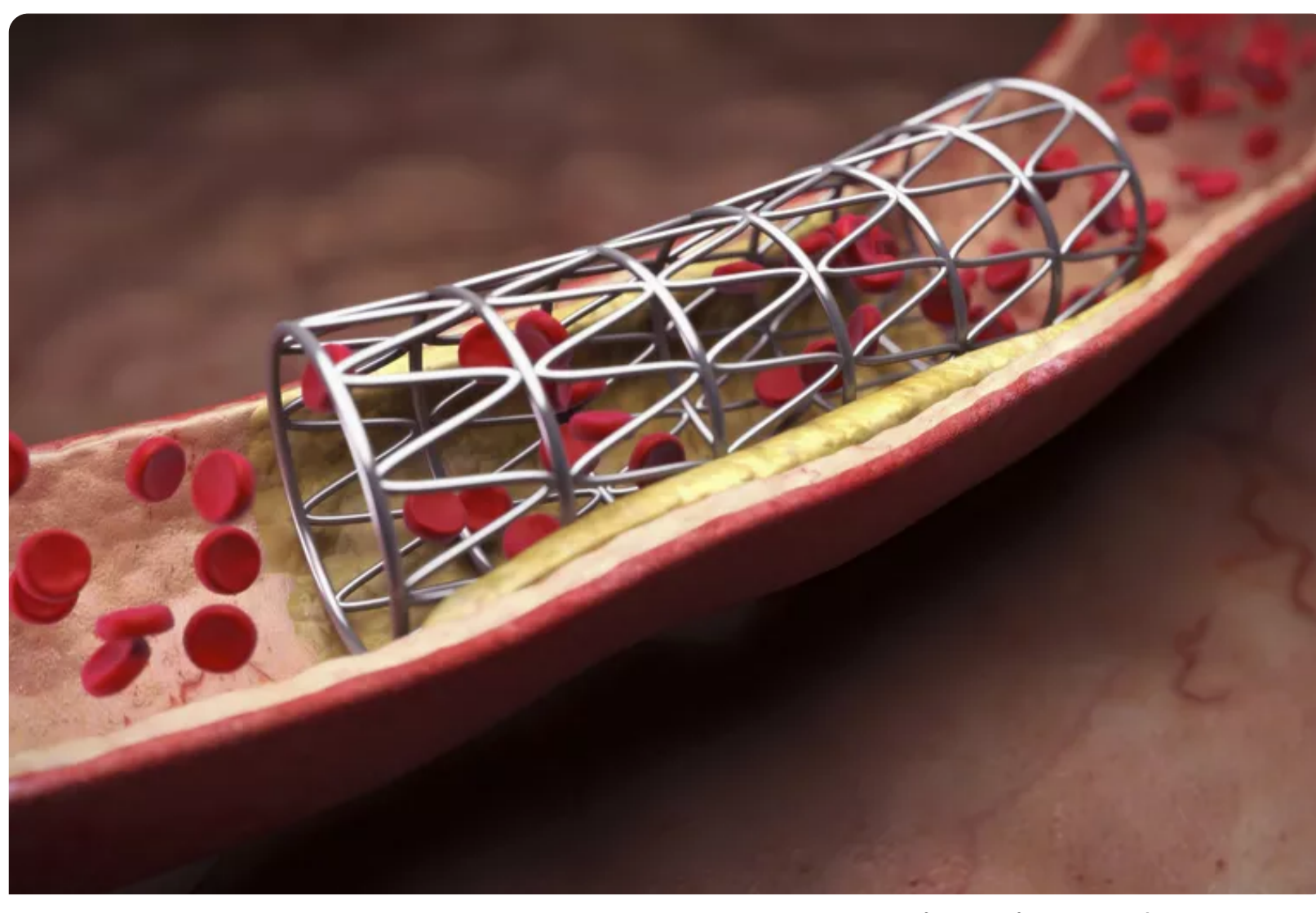
By Richard N. Fogoros, MD | Medically reviewed by Yasmine S. Ali, MD, MSCI on January 14, 2020

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Coronary Artery Disease

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The advent of [angioplasty](#) and stenting has revolutionized the therapy of [coronary artery disease](#). Instead of taking a lot of medications for angina, and instead of having major [bypass surgery](#), a person with significant coronary artery plaques can have the outpatient [catheterization](#) procedure in which the blockage is dilated with a balloon (angioplasty), and the artery is then kept open with a stent.

Stenting has become so routine and convenient, and the before-and-after images of the diseased artery are so striking that the benefits of this procedure are intuitively obvious to doctor and patient alike. Accordingly, many if not most cardiology practices have become nearly entirely stent-based.

A Cascade of Problems

But beneath the surface, the use of angioplasty and stents has always created new problems, requiring new solutions, which themselves create new problems. The cascade of problem - solution - problem - solution - problem has gone like this:

In the early days, angioplasty was used alone. The plaque was “smashed” with a balloon, opening up the blocked artery. But it quickly became apparent that a substantial proportion of patients experienced [restenosis](#)—the regrowth of tissue in response to the trauma of angioplasty—which would gradually block the artery again.^[1] Stents (expandable metal mesh tubes) were developed to hold the artery open after angioplasty and diminish restenosis. The original bare-metal stents (BMS) helped quite a bit (cutting the risk of restenosis by about half), but the restenosis incidence remained high enough to be troublesome. So drug-eluting stents (DES) were developed.^[2] DES are coated with one of the several drugs that inhibit tissue growth, and as a result, the problem of restenosis has been minimized.

With the widespread use of DES, the problem of late stent thrombosis was recognized. Stent thrombosis, the sudden and usually catastrophic clotting off of the coronary artery at the site of the stent, has always been an issue for a few weeks or months after stent placement. The risk of early stent thrombosis is greatly diminished by the use of two anti-platelet drugs that inhibit clotting (so-called “dual-anti-platelet therapy,” or DAPT).^[3]

But then [late stent thrombosis](#)—thrombosis occurring a year or more after stent placement—became an obvious problem with the widespread use of DES. While the late stent thrombosis incident remains quite low—estimated to occur in one out of 200-300 patients each year after the first year—it is almost always a catastrophic event, leading to death or major heart damage.

The risk of late stent thrombosis is thought by some experts to be higher with DES than with BMS, probably because the drug that inhibits tissue growth leaves the metal of the stent exposed to the blood, and thus potentially triggers clotting.

However, recent studies and guideline recommendations suggest that DAPT should be continued for at least six months but no longer than 12 months after stent placement, particularly with newer anti-platelet agents.

Because of the threat of late thrombosis, it is now recommended that DAPT is continued for six to 12 months after stent placement.

Unfortunately, DAPT itself causes substantial difficulties in many patients. Patients taking DAPT are much more prone to bleeding problems, some of which can be life-threatening. Significant trauma (such as a car accident) while taking DAPT can turn a moderate injury into a fatal one. And controlling bleeding during surgery in a patient taking DAPT is nearly impossible—so almost no surgeon will operate on a patient taking these drugs. At the same time, evidence shows that if DAPT is stopped for any reason following a stent—even several years after the stent has been placed—there is an immediate spike in the stent thrombosis incident.

So patients after receiving a stent may find themselves in an untenable place. Their surgeon may be insisting that they stop their DAPT so they can have their gallbladder out or their hip replaced, and their cardiologist may be insisting that they never stop their DAPT, for any reason whatsoever.

Asking the Right Questions

If you are a patient with coronary artery disease and your doctor is recommending a stent, you should stop and ask your doctor to reconsider their premise. Given the issues and unanswered questions that attend the use of any stent, is a stent really necessary? Are other treatments available that can be applied before resorting to a stent?

If you are having [acute coronary syndrome](#)—unstable angina or a heart attack—then your doctor is almost certainly right. You are in considerable immediate danger because of an unstable coronary artery plaque, and angioplasty/stenting is very likely the best approach to stabilizing your cardiac status.

But if you are suffering from [stable angina](#), or if you have a significant blockage that’s not producing any symptoms at all, then angioplasty and stenting is certainly not the only option—and is likely not the best option. Outcomes are generally as good or better with medical therapy and lifestyle changes. And remember that a stent is not a one-and-done proposition; if you get a stent, you are going to be on long-term medical therapy—very serious medical therapy—anyway. Furthermore, many experts are now questioning the effectiveness of stent therapy for stable angina.

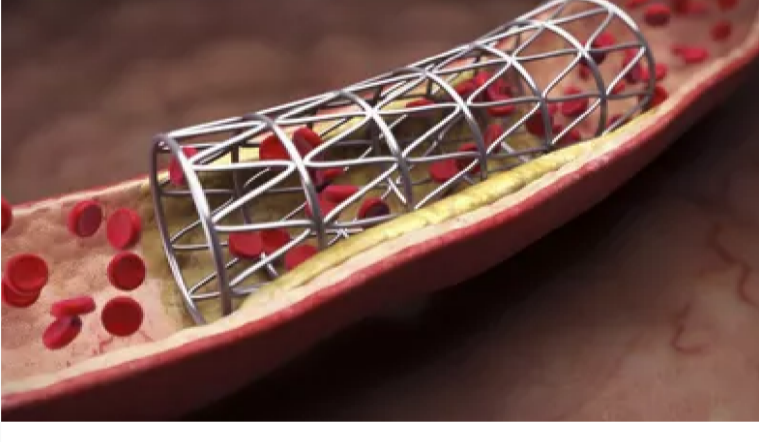
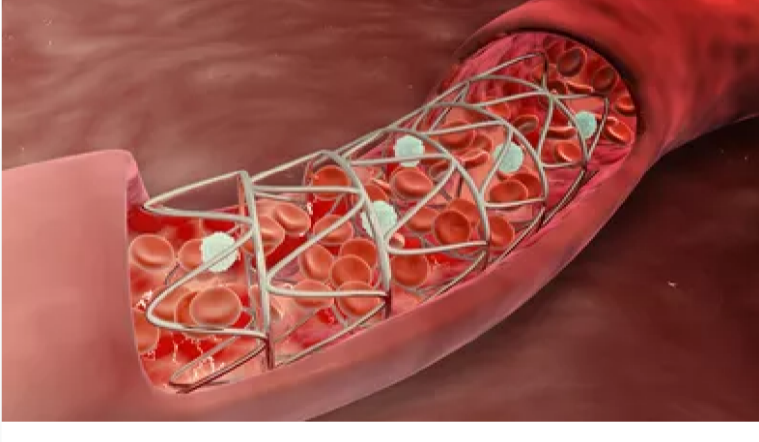
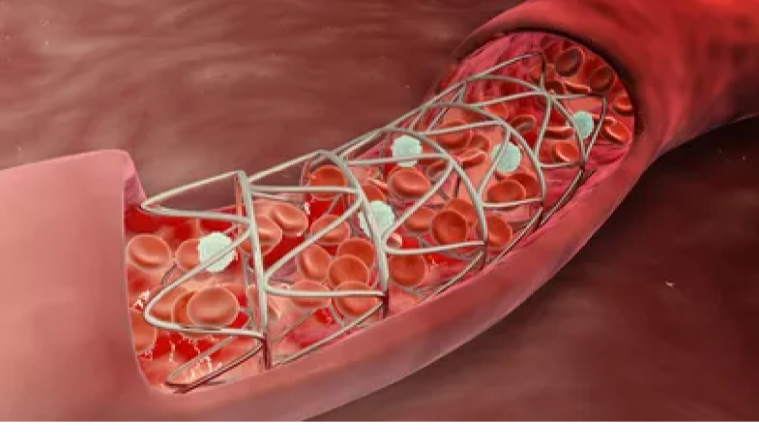

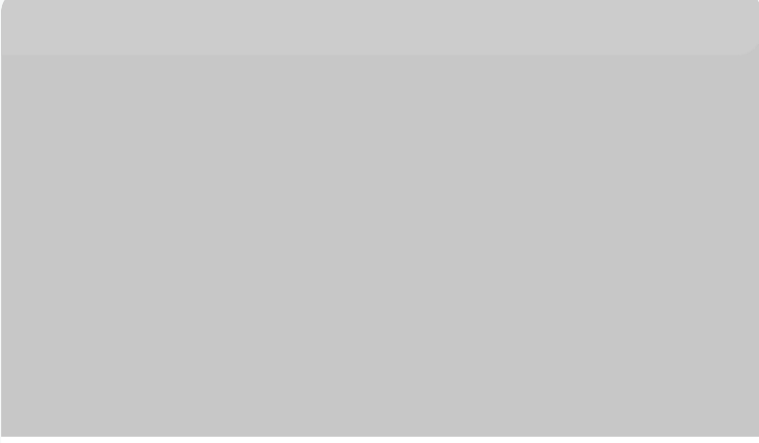
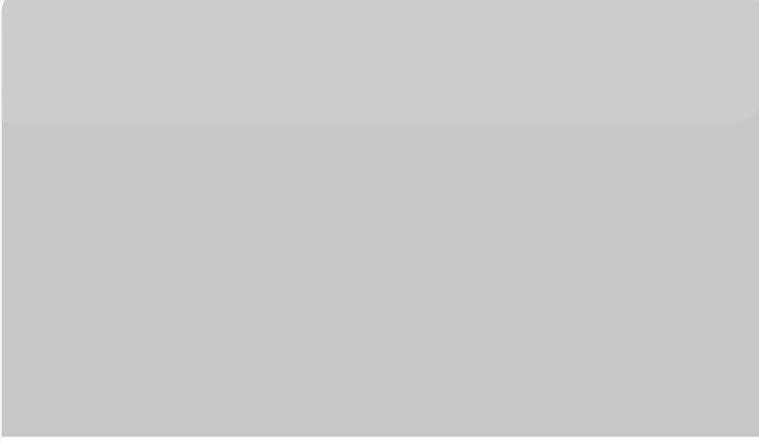
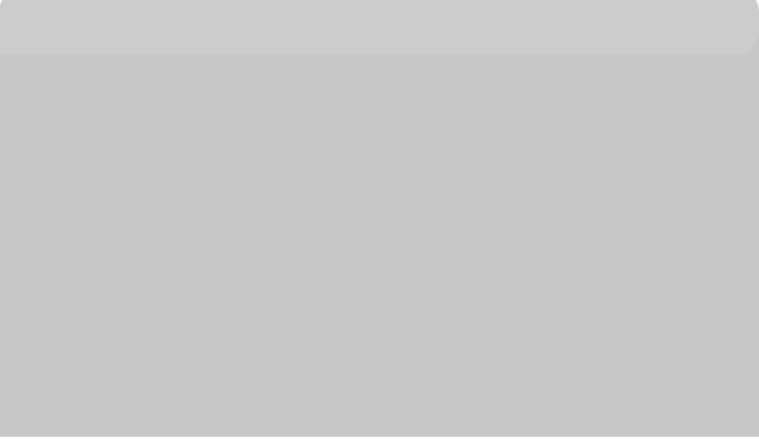
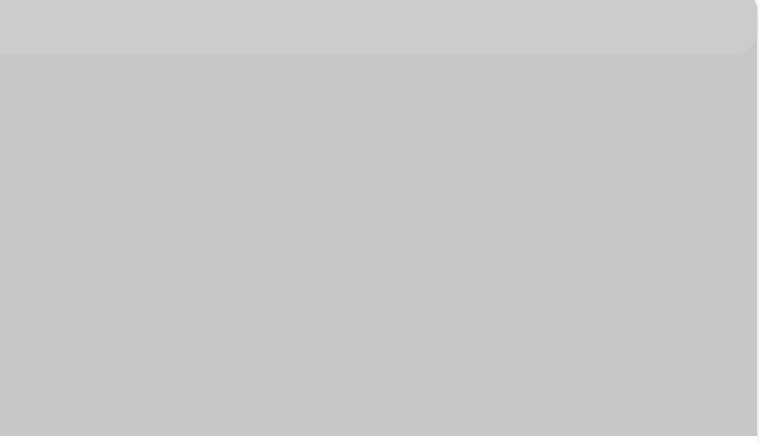
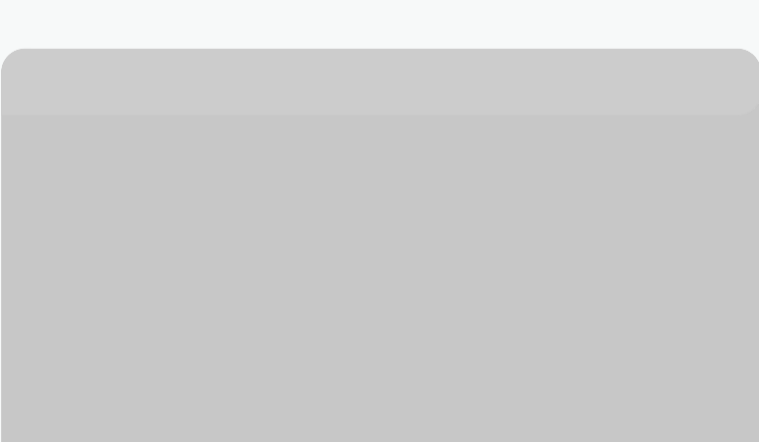
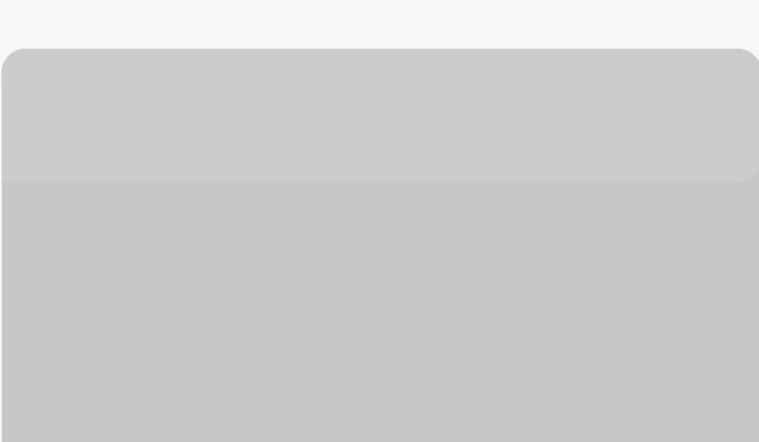
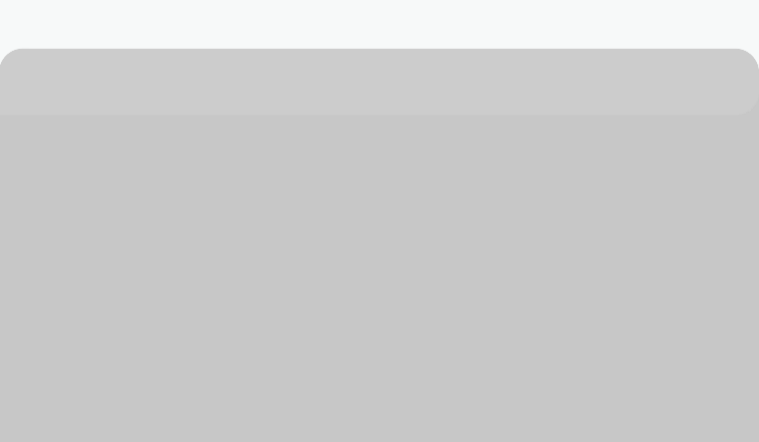
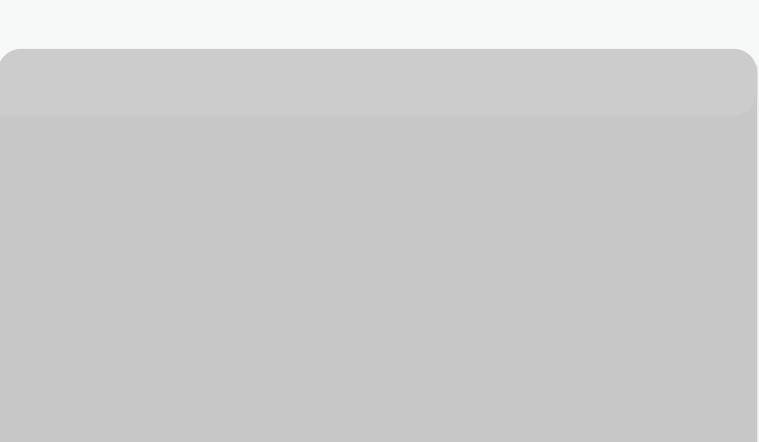
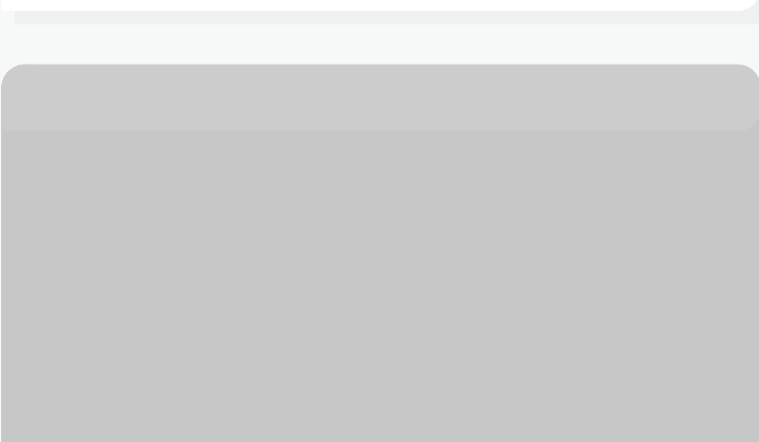
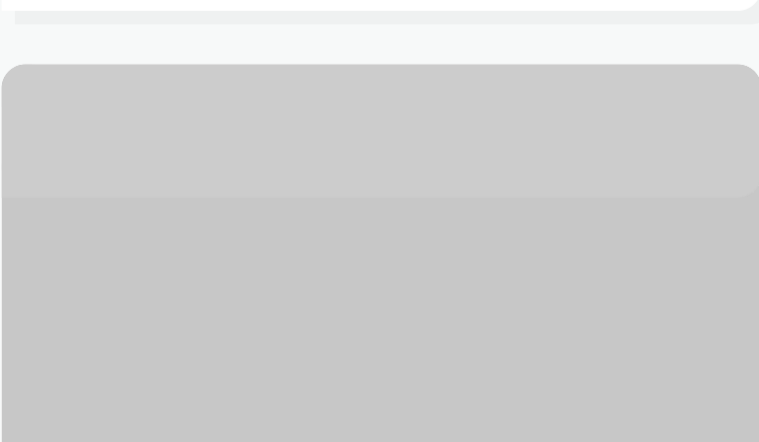
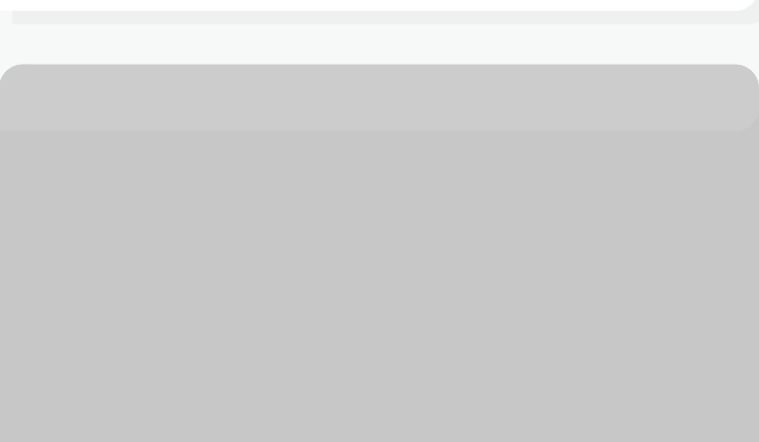
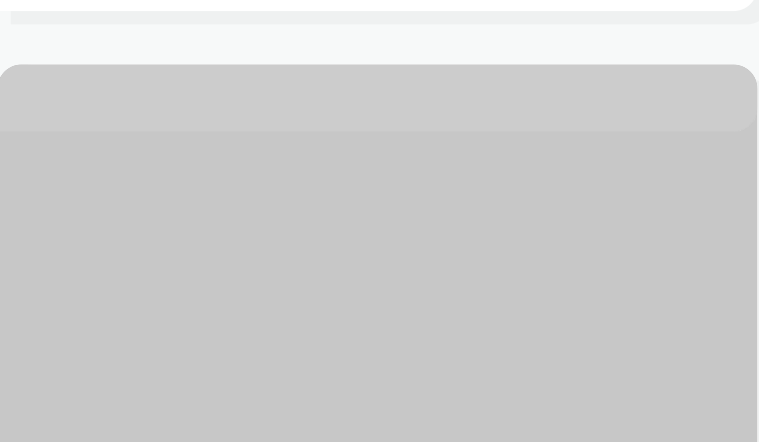
So, ask your doctor to back up a step. Rather than assuming that a stent is the answer, and then concentrating on all of the medical issues that ensue as soon as a stent is used, your doctor should instead ask, “Given this patient’s cardiac condition, general health status, outlook, hopes, and aspirations, what is the optimal therapy for their coronary artery disease?” There are usually a number of treatment options—and all of them should be considered.

A stent may indeed turn out to be the right answer, but that’s a determination that can only be made after asking the right questions.

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