

The "MacStatin": Fast food with some ketchup, salt, and a statin to go

AUGUST 13, 2010 | Michael O'Riordan

London, UK (updated) - Pushing the envelope of primary prevention to a point few doctors are likely to be comfortable with, a group of British cardiologists are proposing a rather radical strategy to neutralize the risk of cardiovascular disease caused by unhealthy eating habits.

They suggest that fast-food restaurants, such as McDonald's, offer customers a statin to go with their meal, one that could be found alongside the salt, sugar, ketchup, and mayonnaise. The statin, they say, could be sprinkled atop customers' Quarter Pounders, into their milkshakes, or onto their supersized French fries to offset the mounds of fat found in these unhealthy meals [1].

Consider the irony that you can have harmful condiments provided free of charge, in unlimited quantities, and yet people think this one simple, potentially protective additive would be crazy to add.



The "mischievous" strategy, outlined in the August 15, 2010 issue of the *American Journal of Cardiology*, is not intended to encourage individuals to think they can eat unhealthily because the statin, which the authors dubbed the MacStatin—slogan: "I'm neutralizing it!"—is a panacea for all risks. Instead, they stress that medical direction should continue to place drug therapy behind lifestyle interventions, such as healthy eating, smoking cessation, and regular exercise.

"I am not crazy, and I do not tell my patients that they can eat unhealthily and get away with it," **Dr Darrel Francis** (Imperial College London, UK), senior author of the report, told **heartwire**. "We're simply providing a calculation for the medical community to think about the size of the effect of a statin tablet vs an unhealthy meal and to also consider the irony that you can have harmful condiments provided free of charge, in unlimited quantities, and yet people think this one simple, potentially protective additive would be crazy to add. And I don't know why they would think that."

Can a statin offset the hazards of McDonald's?

In this unique study, the researchers, including first author **Dr Emily Ferenczi** (Imperial College London), attempted to determine whether the relative risks of one activity, in this case, eating an unhealthy meal at McDonald's, could be "neutralized" by an opposing

change in the relative risk of another activity, such as taking a statin. To do so, they compared the increase in the relative risk of cardiovascular disease associated with the meal's total- and trans-fat content with the reduction in relative risk observed from a recent meta-analysis of seven primary-prevention statin trials.

Most of the primary-prevention statin regimens, with the exception of pravastatin, were sufficiently powerful enough to offset the increased risk caused by eating a Quarter Pounder, which contains 19 g of total fat and 1 g of trans fat, or by eating a Quarter Pounder with cheese and drinking a small milkshake, an unhealthy combination that contains 36 g of total fat and 2.5 g of trans fat.

Despite the tongue-in-cheek nature of the study, Francis told **heartwire** the calculation was a serious one and that researchers were able to show that the risk of MI could be lowered, based on the association between saturated-fat intake and adverse outcomes, as well as the association between statin therapy, LDL lowering, and cardiovascular risk. He said the cheeseburger-and-milkshake risk could be offset with one statin tablet.

Francis noted that individuals engage regularly in harmful activities, such as sedentary behavior, eating unhealthily, or immoderate drinking, and can do so without consulting a doctor. If they want to make a healthy decision, such as take a statin for primary prevention, that decision must get the doctor's go-ahead. In the UK, simvastatin 10 mg can be obtained without a prescription, having been made available over the counter for the past six years, but the reality is if patients want to get an "acceptable dose," said Francis, they have to see a physician.

“If patients need to see a doctor before they take a statin, then how come they don't need medical advice to eat a hamburger?.”

"I think it's very reasonable advice, but if patients need to see a doctor before they take a statin, then how come they don't need medical advice to eat a hamburger?" he asked.

To **heartwire**, Francis said there is a concern that patients might think they can eat whatever they want without consequences, a risk that bothers him.

"It's similar to road safety in that the safer people feel, the more dangerously they drive," he said. "Somebody once said that the safest thing you can do for the safety of pedestrians is not to have airbags in cars but a great big, metal spike sticking out from the steering wheel, aimed right at the chest of the driver, and the driver will drive very carefully. So, I am concerned that people would adjust to eat more unhealthy food, that having gone in there they might feel less guilty."

Having said that, Francis said he is unsure individuals are currently limiting their intake at fast-food restaurants because of the effects on their health or the effects on the healthcare system. Most individuals eat until full anyway, he said, and harm does not typically factor into that decision.

What to make of the MacStatin proposal?

A few cardiologists, however, were not entirely sure what to make of the group's recommendations, with some thinking the group was joking entirely, while others lamented that drug therapy appears to be an easy fix, even though it is not, for a chronic disease that requires substantial changes to diet and lifestyle. **Dr Rita Redberg** (University of California, San Francisco) said the MacStatin proposal is not entirely unprecedented, pointing out that **Dr Charles Hennekens** (Florida Atlantic University, Boca Raton) once showed a cartoon of a couple at McDonald's requesting an aspirin to go along with their meal. That cartoon was clearly intended to be a joke, she told **heartwire**.

Speaking with **heartwire**, **Dr Dariush Mozaffarian** (Harvard School of Public Health, Boston, MA) tackled the MacStatin proposal head-on, saying he disagrees with the approach for a number of reasons, the first being that cardiovascular disease is caused by multiple risk factors.

"Dietary habits don't just affect cardiovascular risk through LDL-cholesterol levels or even inflammation," said Mozaffarian. "Dietary habits affect cardiovascular risk through more than a dozen different pathways, including effects on insulin resistance, endothelial function, and other cholesterol particles. Diet also affects arrhythmic risks, as well as satiety and weight gain. The list goes on and on. To try to block two pathways, LDL cholesterol and maybe inflammation partially, and to think you're blocking all of the adverse effects of diet, is incorrect."

In addition, Mozaffarian noted that diet influences more than heart-disease risk and that it affects the risk of diabetes, cancer, and obesity, among other adverse outcomes. He argued that the environment needs to change to make it easier for individuals to eat healthily and that even compliance with drug therapy, such as statins, remains low in the primary-prevention setting.

We wouldn't want to do something good and then do something bad and get a neutral result.



"The last reason that the approach doesn't make a lot of sense to me is that we wouldn't want to do something good and then do something bad and get a neutral result," he added "We want to maximize the good. If somebody needs to take a statin, and they benefit from a statin and are compliant with that statin, then they should take the drug and gain the

benefit. They should also gain the benefit from a healthy diet. Why would you not want to do both?"

Although the article is written somewhat tongue-in-cheek, Mozaffarian told **heartwire** such inconsistencies in the MacStatin strategy, many of which were acknowledged by Francis, get to the heart of the **polypill** concept. The polypill is a very "downstream" approach to prevention, using drugs to block specific pathways in the body, when primary prevention should be focused "upstream," helping larger swaths of the population reduce their risk of cardiovascular disease by advocating a healthy lifestyle.

The approach, according to **Dr Michael Miller** (University of Maryland, Baltimore), is a bit more imaginative than suggesting that statins, like fluoride, just be added to the water supply. It is really akin to placing a small bandage on an oversized wound. "Subliminally, it endorses oversized saturated-fat portions rather than more moderate portion control," Miller told **heartwire**. "Rather, a healthier recommendation would be to enjoy half of that seven-ounce Quarter Pounder with your salad."

Responding to some these issues, Francis said that cardiology, unfortunately, is all about doing some "good" to counteract the patient doing something "bad" in order to get a neutral result. He agrees with the recommendation that eating just half a hamburger is an excellent idea but questions whether the advice will be followed, especially since the individual has already ignored the doctor's advice not to eat junk food in the first place.

Dr Roger Blumenthal (Johns Hopkins University Medical Center, Baltimore, MA) told **heartwire** that his preference to the MacStatin is a menu approach that lists the total calories, as well as the saturated- and trans-fat content of each food item, along with average recommended intake for adults and teenagers.

"That will get people thinking," said Blumenthal. "McDonald's could also hand out top-quality pedometers and encourage folks to walk 10 000-plus steps a day, most days of the week."

*Francis is financially supported to conduct research into heart failure and pacemakers by the **British Heart Foundation** (BHF). The BHF has asked the authors to make clear that this work was not supported, approved, or endorsed by the charity and that, on its **website**, it has criticized the work because of the concern the public may misinterpret it. The authors have no other conflicts of interest.*