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OREGON DEPARTMENT OF HUMAN SERVICES

HYPERLIPIDEMIA: A STEALTHY PURVEYOR OF PESTILENCE

*Cholesterol is much maligned
Indeed, it's truly hard to find
A champion to pursue, from hence,
The sorry molecule's defense.*

Public Health Poet Laureate

To be fair, cholesterol is important stuff. It is a key component of our cell membranes, particularly in nervous tissue, and a major ingredient in bile acids, essential to digestion of fats.

Most of the bad press, though, stems from its role in the development of atherosclerosis and subsequent cardiovascular disease. This connection was first recognized by German chemist Adolf Windaus, who, in 1910 discovered that atheromatous aortas were laden with 20 times as much cholesterol as non-diseased ones. Four years later Russian pathologist Nikolai Anitschov induced atherosclerosis in rabbits by feeding them a diet of pure cholesterol. Things didn't really get moving, though, until the 1950s, when American physiologist Ancel Keys drew the connection between high levels of dietary saturated fat and heart disease. This issue of the *CD Summary* provides data on the prevalence and knowledge of hypercholesterolemia among Oregonians.

SCREENING RECOMMENDATIONS

The first step in addressing a cholesterol problem is recognizing that it exists. The U.S. Preventive Services Task Force (USPSTF) strongly recommends routine screening for lipid disorders with Total Cholesterol (TC) and High Density Lipoprotein Cholesterol

(HDL-C) among men ≥ 35 years and among women ≥ 45 years. Although the optimal interval for screening is uncertain, the Task Force describes every five years as a "reasonable option" with shorter intervals for patients with levels close to those warranting therapy and longer intervals for low-risk people who have had low or repeatedly normal levels. USPSTF also recommends screening in younger adults who have other risk factors for coronary heart disease, although it doesn't specify a screening interval.¹ The Third Report of the National Cholesterol Education Program Expert Panel (NCEP), on the other hand, calls for hyperlipidemia screening (fasting total cholesterol, LDL, HDL, and triglycerides) once every five years in persons ≥ 20 years.²

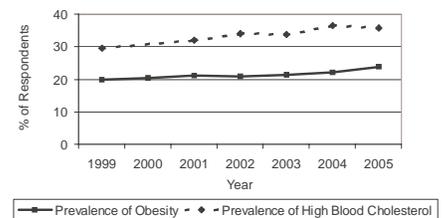
Rates of screening in Oregon are pretty good using USPSTF criteria. On the 2005 Behavioral Risk Factor Surveillance System (BRFSS) Survey, a random telephone survey of Oregon adults, 86% of men ≥ 35 years and 94% of women ≥ 45 years reported they'd had their cholesterol checked at some point.

OREGON PREVALENCE

The same survey indicates that hypercholesterolemia is very common: 36% of adult Oregonians report that they have been clinically diagnosed with high blood cholesterol, a 20% increase over just six years earlier. The condition is somewhat more common in men (38%) than in women (34%). Prevalence increases with age, rocketing from

9% in Oregonians 18-24 years old to almost 50% in those ≥ 55 . Not surprisingly, high cholesterol is associated with a high body mass index (BMI), a measure of whether a person's weight is in a healthy range for their height. It climbs from 27% in people with a BMI < 25 kg/m² (the "healthy" range), to 44% in those with a BMI of ≥ 30 kg/m² (obese). Indeed, the recent increase in reported high cholesterol parallels recent increases in obesity (see figure).

Prevalence of High Cholesterol and Obesity, by Year, Oregon, 1997-2005



TREATMENT

Good evidence exists for the benefit of treatment. The Scandinavian Simvastatin Survival Study demonstrated a 30% reduction in all-cause mortality and a 42% reduction in coronary deaths among patients with known coronary heart disease and hypercholesterolemia who received simvastatin.³ In the Cholesterol and Recurrent Events (CARE) trial, use of a different statin medication led to a 45% risk reduction in coronary deaths among patients 65-75 years of age with prior myocardial infarction and cholesterol in the "average" range (total cholesterol < 240 mg/dl, LDL 115-174 mg/dl)⁴.

In addition to the longer-term benefits produced through reduction of LDL, statins appear to have a direct effect on the coronary endothelium, helping to stabilize



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atherosclerotic plaques and reduce inflammation.^{5,6}

Other medications are also useful in reducing risk for cardiovascular events due to high cholesterol. One tantalizing study from Japan showed a 19% relative reduction in major coronary events in patients who took an omega-3 fatty acid (eicosapentaenoic acid) supplement along with a statin, compared with those who took the statin alone.⁷

Physical activity and changes in diet also play an important role controlling hypercholesterolemia. The NCEP expert panel recommended Therapeutic Lifestyle Changes (TLC) as initial therapy for both borderline and overt hypercholesterolemia. TLC consists of regular moderate physical activity, a diet that limits calories from fat to 25-35% of total calories (7% from saturated or *trans* fat), and reduction of body weight as needed to maintain a BMI in the healthy range.²

CHOLESTEROL CONTROL AMONG OREGONIANS

How aware are Oregonians with high cholesterol of the steps they can take to control it?

In 2004, 44% of Oregonians with high cholesterol said they were taking prescribed medication for the condition. While many people may be attempting to decrease their cholesterol

through TLC, these data show that over half of Oregon adults with high cholesterol are not currently receiving pharmacological treatment, a finding not entirely in the spirit of NCEP recommendations. Lipid control does appear to be a challenge; 42% of respondents with high cholesterol reported that their cholesterol remained high when it was last checked.

Regular physical activity can lower LDL and raise HDL, and can also decrease insulin resistance.² Among Oregonians with high cholesterol, 73% reported being advised by their clinician to exercise regularly. However, only 58% reported actually meeting CDC physical activity recommendations*, similar to the rate in the general population.

Modest weight loss (even 10 pounds) enhances LDL reduction in persons who are overweight and helps reduce other risk factors for cardiovascular disease related to metabolic syndrome. In light of this, NCEP recommends weight reduction in all persons with high cholesterol who have a BMI ≥ 25 kg/m². Among overweight Oregonians with high cholesterol, 70% report being advised by their clinician to lose weight as a means of improving their lipid profile. However, only 48% of respondents with high cholesterol and a BMI of ≥ 25 kg/m² reported that they were ac-

tively trying to lose weight.

RESOURCE

A program available in many parts of Oregon, *Living Well with Chronic Conditions*, helps patients improve their skills in chronic disease self-management. The program consists of 2½ hour sessions once a week for six weeks. To locate a *Living Well* program near you see our website at: <http://www.oregon.gov/DHS/ph/livingwell/index.shtml>.

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* 30 or more min. of moderate activity, ≥ 5 days a week, or 20 or more min. of vigorous activity, ≥ 3 days a week.