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# LIPOSORBER®

Provides Hope When Drug Therapy Fails™

## For patients with Familial Hypercholesterolemia (FH)

Helping you  
achieve your  
recommended  
therapeutic  
target



**Kaneka**

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## Welcome!

If you have been diagnosed with Familial Hypercholesterolemia (FH), high “bad” cholesterol [LDL-C and/or Lp(a)], and coronary artery disease or peripheral artery disease, and you are not reaching your therapeutic targets with your current treatment regimen (statins, PCSK9 inhibitors), then this guide is for you. You should be proud that you are taking the right steps to educate yourself about this disease and available treatment options.

This guide is designed to help you understand what “bad” cholesterol is, how it can affect you and your family, and how LIPOSORBER apheresis therapy can help.

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## Definitions Index

**ACEIs - Angiotensin-Converting Enzyme Inhibitors:** medications used to treat and manage hypertension, which is a significant risk factor for coronary disease, heart failure, stroke, and other cardiovascular conditions.

**ApoB - Apolipoprotein B:** a protein that helps carry fat and cholesterol in the body, binding to lipids to form lipoproteins that are artery-clogging (LDL-C, Lp(a), and VLDL).

**Arteriosclerosis:** A condition where the arteries become narrowed and hardened due to buildup of plaque (fats) in the artery wall.

**FH - Familial Hypercholesterolemia:** an inherited condition characterized by very high levels of cholesterol in the blood.

**CAD - Coronary Artery Disease:** a condition in which the major blood vessels are narrowed, reducing blood flow to the heart.

**Cholesterol:** a waxy, fat-like substance that travels through the blood on proteins called lipoproteins.

**Dextran Sulfate Cellulose Beads:** used in LIPOSORBER LA-15 adsorbent columns to remove apolipoprotein B-containing lipoproteins from the blood.

**HDL-C - High-Density Lipoprotein Cholesterol:** “good” cholesterol, consists primarily of protein. HDL absorbs cholesterol in the blood and carries it back to the liver.

**LA - Lipoprotein-Apheresis:** nonsurgical therapy that removes low-density lipoprotein (LDL) cholesterol and Lipoprotein(a) from the blood.

**LDL-C - Low-Density Lipoprotein Cholesterol:** “bad” cholesterol that collects in the walls of your blood vessels, raising your chances of health problems like a heart attack or stroke.

**Lp(a) - Lipoprotein(a):** a type of protein that transports cholesterol (a fatty substance) in the blood.

**PAD - Peripheral Artery Disease:** a condition in which narrowed arteries reduce blood flow to the arms or legs.

**Plasma:** the liquid part of the blood (about 55%) containing 92% water, 7% vital proteins and 1% mineral salts, sugars, fats, hormones and vitamins.

**Triglycerides:** the most common type of fat in the blood.

**VLDL - Very Low Density Lipoprotein Cholesterol:** a type of “bad” cholesterol that carries different types of fats, including triglycerides, to the cells.



## About Familial Hypercholesterolemia (FH)

Elevated LDL-C levels have long been recognized as one of the principal risk factors of heart and vascular disease. **Familial Hypercholesterolemia (FH)** is an inherited genetic condition which causes LDL-C levels to rise, starting from birth. In some cases, cholesterol levels may reach dangerously high levels greater than 200mg/dl. If untreated, **50% of FH patients experience cardiac and vascular disease** by the age of 55 if one gene is affected, and by the age of 20 (or younger) if two genes are affected.<sup>1,2,3</sup>

### FH Facts:



An estimated **1 in 250** Americans have FH, however **90% may not have been accurately diagnosed**.<sup>5</sup>



Untreated FH patients have **20x the risk of developing coronary artery disease (CAD)**, compared to the general population.



FH patients have a **50% chance of passing it to their children** so it is essential to screen all family members.<sup>6</sup>

## About Lipoprotein(a) [Lp(a)]

Individuals with familial hypercholesterolemia (FH) are more likely to have high Lp(a) levels than the general population. Lp(a) is an LDL-like particle that has an additional protein, **apolipoprotein(a)**, attached to it. Elevated levels of Lp(a) can also increase the risk for both heart attack and stroke. Lp(a) levels are largely inherited, similar to FH, and are not independently associated with diet, exercise, or obesity<sup>2</sup>.

### Lp(a) Facts:



Nearly **1 in 5 individuals** are affected by elevated Lp(a) in the US.<sup>7</sup>

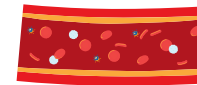


**Elevated Lp(a) is inherited** so it is important to screen all family members.<sup>4</sup>

## Managing "Bad" Cholesterol

It is important to manage your "bad" cholesterol, such as LDL-C (low-density lipoprotein cholesterol) and lipoprotein(a) [Lp(a)]. "Bad" cholesterol causes buildup (arterial plaque) inside of the arteries. This buildup can happen in any artery in the body and can develop into a condition called atherosclerosis, which can lead to coronary artery disease (CAD), heart attack, or stroke.<sup>8</sup>

Healthy Artery



Atherosclerosis



*arterial plaque build-up*

### Elevated Lp(a) + FH: A Duel Threat

According to The SAFEHEART Study, **patients who have elevated Lp(a) plus FH are at higher risk for atherosclerotic cardiovascular disease (ASCVD) and death versus patients who only have elevated Lp(a) or FH alone**.<sup>9</sup>

LIPOSORBER® is approved by the FDA to acutely reduce bad cholesterol levels in FH patients.<sup>11</sup> If you are not meeting your therapeutic goals with diet and maximum lipid lowering drug therapies, your doctor may recommend LIPOSORBER. Speak with your doctor to see if LIPOSORBER treatment is right for you.

# FH Patient's Journey: Exploring Treatment Options

**1** A patient or patient's close relative (parents, siblings, grandparents) has had:

- an **LDL-C level higher than 100 mg/dl** and/or **Lp(a) higher than 60 mg/dl** with documented CAD or PAD
- a **heart attack or stroke before the age of 50** and want to take steps to find out why this happened.



## FAMILY HEALTH ASSESSMENT

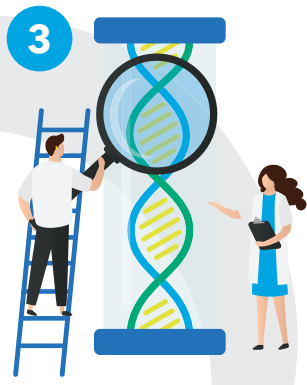


**2**

The patient goes to their physician, who will likely check their risk factors, including cholesterol levels and current medical therapies and lifestyle, with the **goal of improving the patient's health status.**

Since high LDL-C and Lp(a) are genetically passed down, it is **important for the patient to have all their close relatives tested**, especially their children.

## TACKLING HIDDEN RISKS



**3**



**5**

## DRUG THERAPY & LIFESTYLE CHANGES



**4**

The physician recommends that the patient implement lipid-lowering strategies (drug therapy, diet and lifestyle changes).

## TREATMENT RECOMMENDATION

In cases where the patient has CAD or PAD and their LDL-C and/or Lp(a) does not meet treatment goals (LDL-C less than 100 mg/dl and or Lp(a) less than 60 mg/dl), the physician may determine that **lipoprotein-apheresis (LA)** may be the best treatment option and connects the patient with nearest center.

**6**

## ONBOARDING

The patient will meet with the LA team to see what they need to do before the first treatment (such as a switch or addition of medication, vascular access discussion, etc.).



**7**

## ADHERENCE: MANAGING LDL & Lp(a)

The patient starts treatment and should expect to be there for **2-4 hours**, per session. The physician will check patient's cholesterol each session to ensure the levels are lowering and meeting treatment goals. Studies show that meeting LDL-C and Lp(a) targets help **reduce the risk of future heart attacks/strokes.**<sup>10</sup>



**8**

The patient should expect to have **treatments 2-4 times per month** (depending on cholesterol levels). Since LIPOSORBER® is a lifelong therapy, it is important that the patient follow their doctor's recommendation.



## PATIENT CAN ENJOY A FULL LIFE

## About LIPOSORBER®

LIPOSORBER LA-15 is a procedure that separates plasma from whole blood, selectively removing the bad cholesterol to enable FH patients with elevated LDL-C and Lp(a) levels to attain their recommended therapeutic targets.

The system is FDA approved and has been used to treat patients since 1996. LIPOSORBER is intended for patients with either documented Coronary Artery Disease (CAD) or Peripheral Artery Disease (PAD), if:

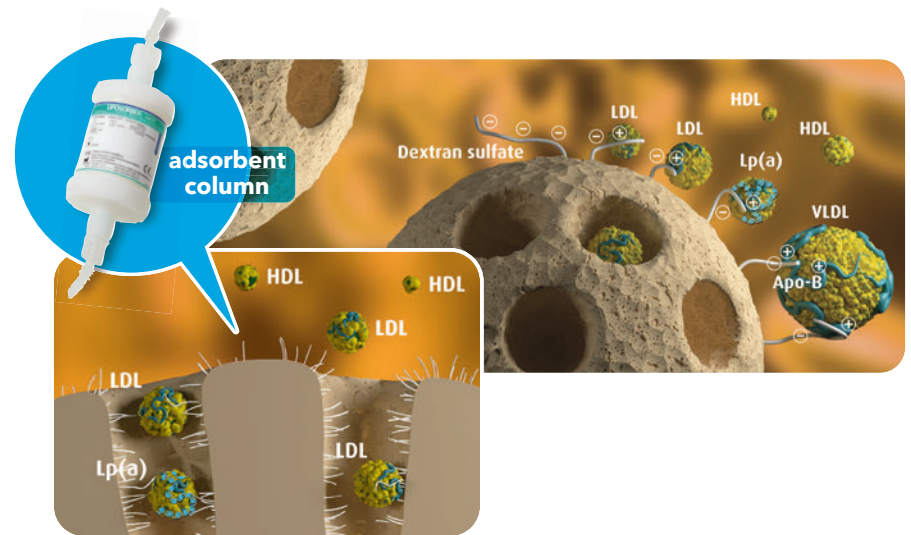
- **LDL-C**  $\geq 100$  mg/dl  
-or-
- **Lp(a)**  $\geq 60$  mg/dl and LDL-C  $\geq 100$  mg/dl

*And diet and maximum lipid-lowering drug therapies (statins, PCSK9 inhibitors) have failed to achieve the established therapeutic targets per professional guidelines.<sup>11</sup>*



## How LIPOSORBER® Works

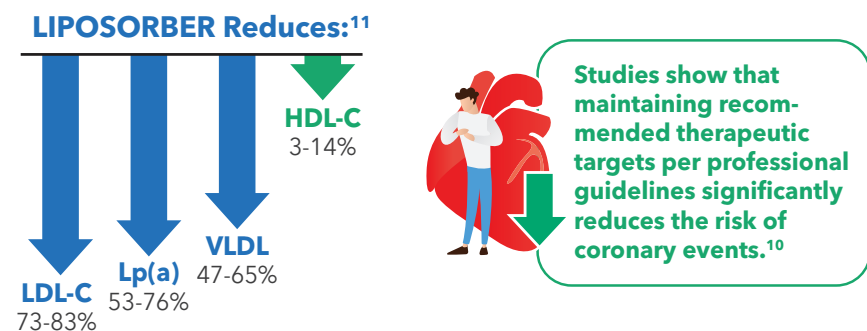
LIPOSORBER therapy **selectively removes LDL-C and Lp(a) from the blood**. This technique of removing bad cholesterol from the blood while minimally affecting other components such as blood cells, proteins, antibodies, and HDL is called **lipoprotein-apheresis**.



The LIPOSORBER system uses **adsorbent columns** containing **dextran sulfate cellulose beads**, which provide specific binding to ApoB containing lipoproteins such as LDL-C, Lp(a), and VLDL.<sup>11</sup>

These three “bad cholesterol” are selectively removed by the electro-static interaction between the negatively charged dextran sulfate (-) and the positively charged ApoB (+).

A typical LIPOSORBER® treatment can take anywhere from **2-4 hours**. During the procedure, you are seated in a comfortable chair while your blood is withdrawn from your arm and passed through the LIPOSORBER System. Special filters in the machine selectively remove harmful cholesterol. **LIPOSORBER has been shown to reduce LDL-C by 73-83% and Lp(a) by 53-76% after a single treatment.**<sup>10,11</sup>



In order to maintain LIPOSORBER LDL-C and Lp(a)'s lowering benefits, **patients will typically require treatment every two weeks**. Diet and drug therapy must also be maintained. Studies have shown that lowering cholesterol with LIPOSORBER therapy significantly reduces the risk of coronary events in FH patients with progressive cardiovascular disease.<sup>10</sup>

## LIPOSORBER Safety Profile<sup>11</sup>

**ADVERSE EVENTS:** The most common adverse events are hypotension (0.8%), nausea/vomiting (0.5%), and flushing/blotching (0.4%). Other adverse reactions may occur, including angina/chest pain, shortness of breath, fainting, lightheadedness and anemia.

**CONTRAINDICATION:** Angiotensin converting enzyme [ACEI(s)] inhibitors are contraindicated with LIPOSORBER® due to possible bradykinin reaction. ACEI(s) should be replaced with angiotensin II receptor blockers (ARBs) or any other antihypertensive agent as determined by the prescribing physician.

For complete safety information and contraindications, please contact your physician. You may also access the Instructions For Use manual by visiting: [bit.ly/31UDfnc](https://bit.ly/31UDfnc)

## Tips for Successful Treatment Sessions

- 1. Do not take ACE inhibitor medication.** Talk to your doctor about other medications, such as ARBs (angiotensin receptor blockers).
- 2. Do not take other anti-hypertensive (for high blood pressure) medications on the day of treatment.** You can resume following your LIPOSORBER® treatment. Again, talk to your doctor before stopping your medication.
- 3. Eat a low fat meal and hydrate before your treatment.** Also, avoid drinking alcohol 24 hours prior.
- 4. Do not perform strenuous exercise** on the day of your procedure.
- 5. Avoid activities that could increase the risk of physical injury** for 24 hours after your treatment because of the blood thinning medication being used.
- 6. Come to treatment wearing comfortable clothes** and bring items to help pass the time (book, tablet, headphones, etc.)

## Reimbursement & Resources

Most insurance plans, including Medicare and Medicaid, cover the cost of LIPOSORBER treatment. Make sure to talk to your doctor about your insurance coverage options prior to starting treatment.

To learn more about FH, Lp(a) and LIPOSORBER, please scan the resources below.



### Find a Treatment Center Near You

There are 50+ locations across the US and Canada that offer LIPOSORBER treatment with new facilities being added regularly.



### Family Heart Foundation

Scan here to access information about familial hypercholesterolemia and elevated Lp(a) and connect with patients in the community.



### Connect on Social Media

Follow LIPOSORBER and get updates delivered to your social media channels.

