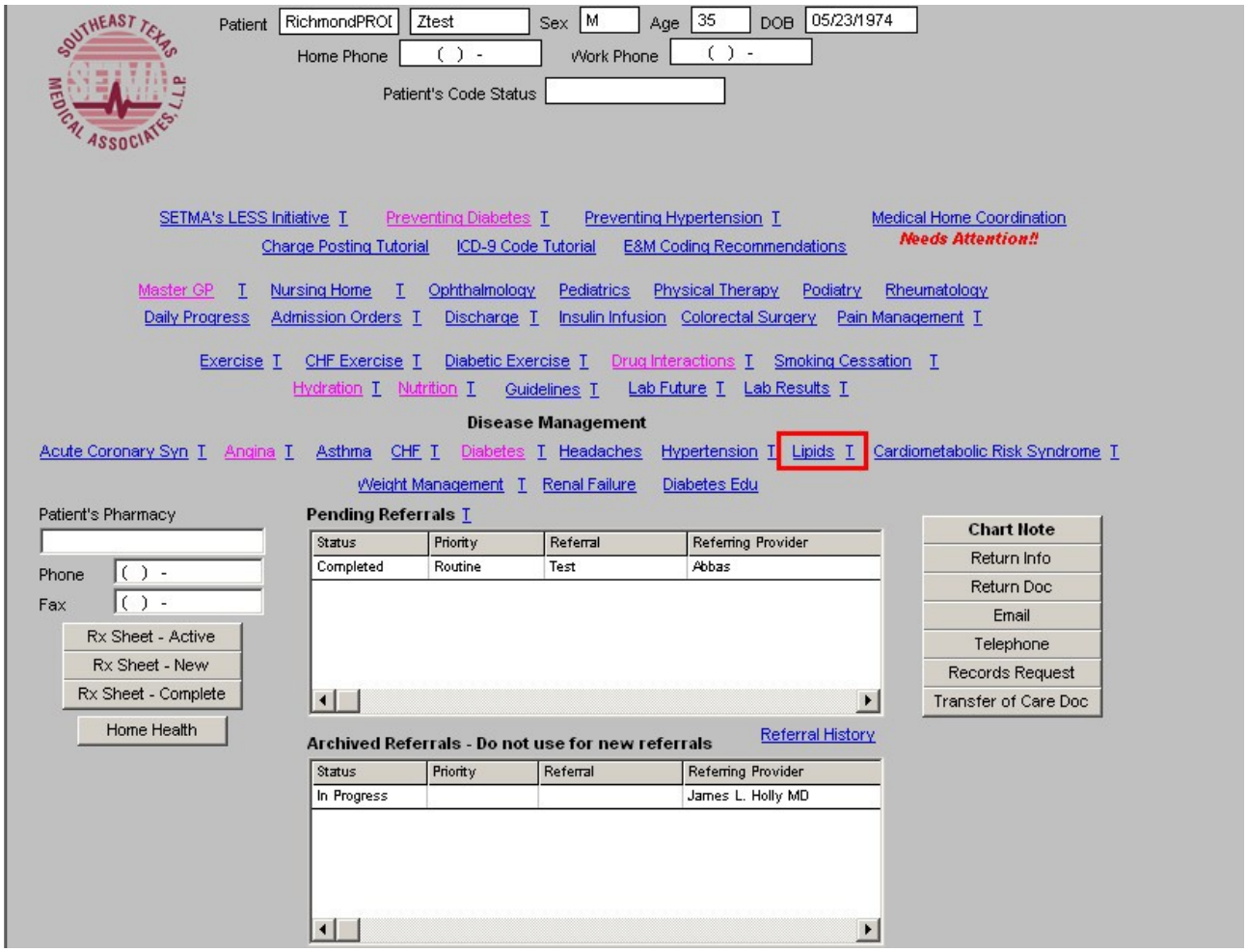
Lipids

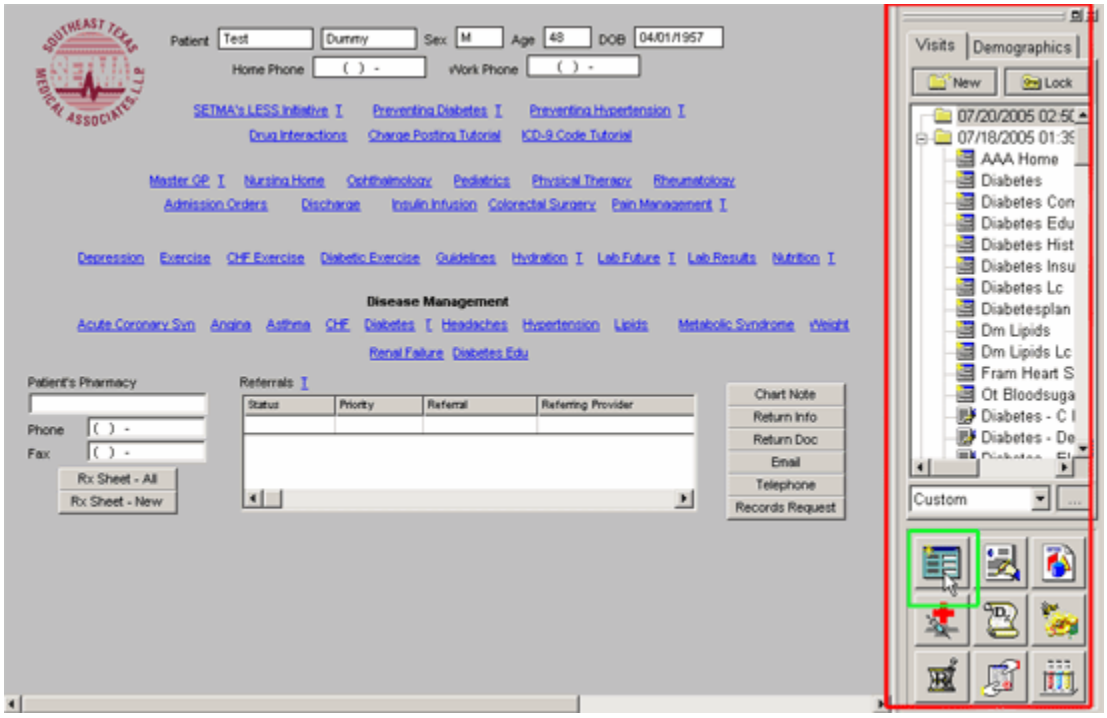
Dyslipidemia is one of six major, independent cardiovascular disease risk factors, The aggressive and successful management of lipids is critical to the well being of anyone with diabetes, hypertension, heart disease, or high risk for heart disease. SETMA's Lipids Suite of Templates provides a foundation for the treatment of dyslipidemia.

The Lipids Suite of Templates can be accessed from:

- AAA Home



- NextGen's Main Tool Bar's Template Icon



  - When the Template button is clicked you will be presented with the preference list.
  - If the Diabetes Master Template is listed as one of your preferences, select it.
  - If it is not one of your preferences, select the All radio button and then scroll down until you find it in the list.

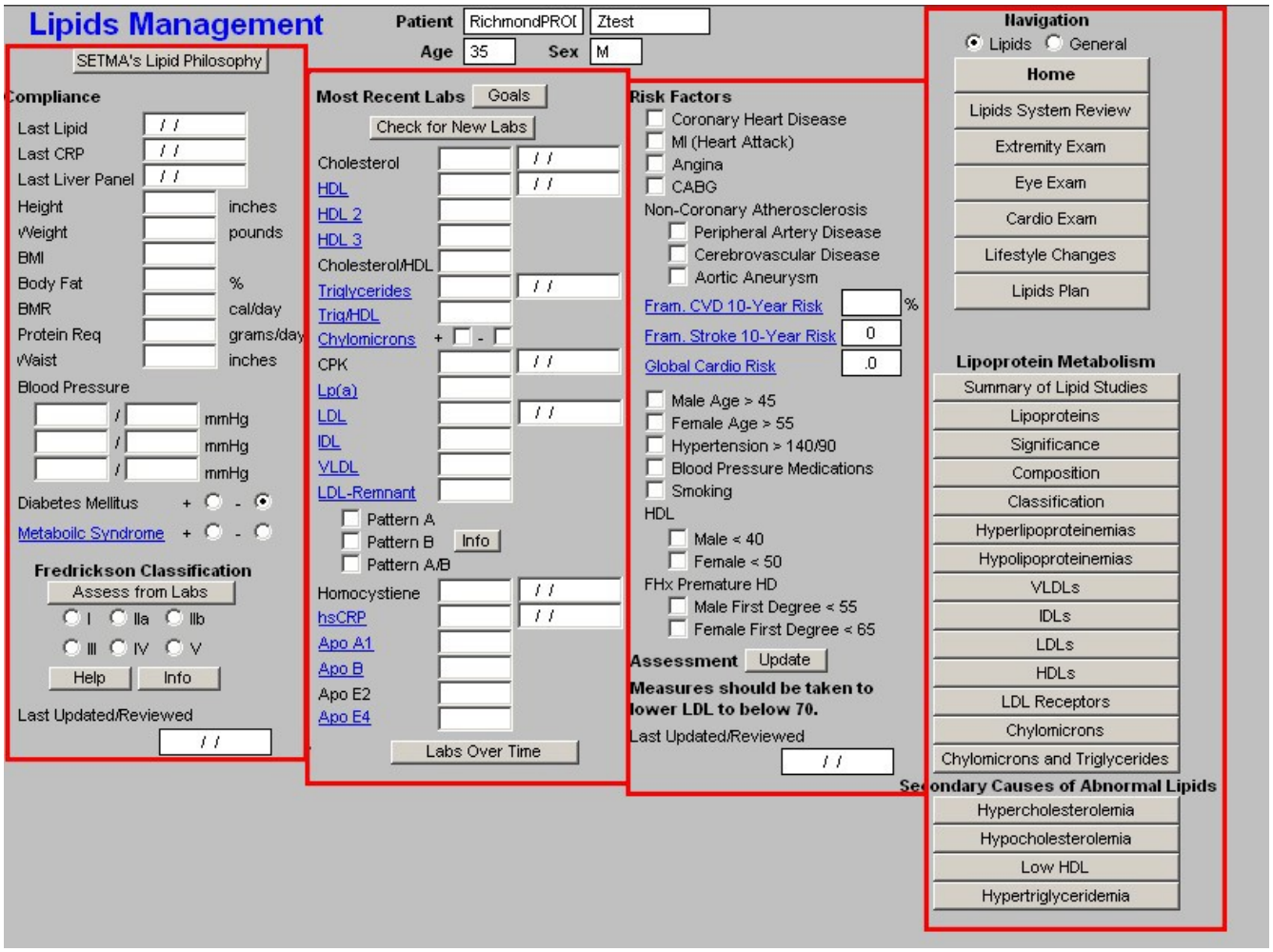
NOTE: For more on how to set up your preferences, Click Here

- All other disease management suites of templates

The organization and content of SETMA's Lipids Suite of Templates is as follows.

Master Lipids Template

The Maser Lipids Template is organized into four columns:



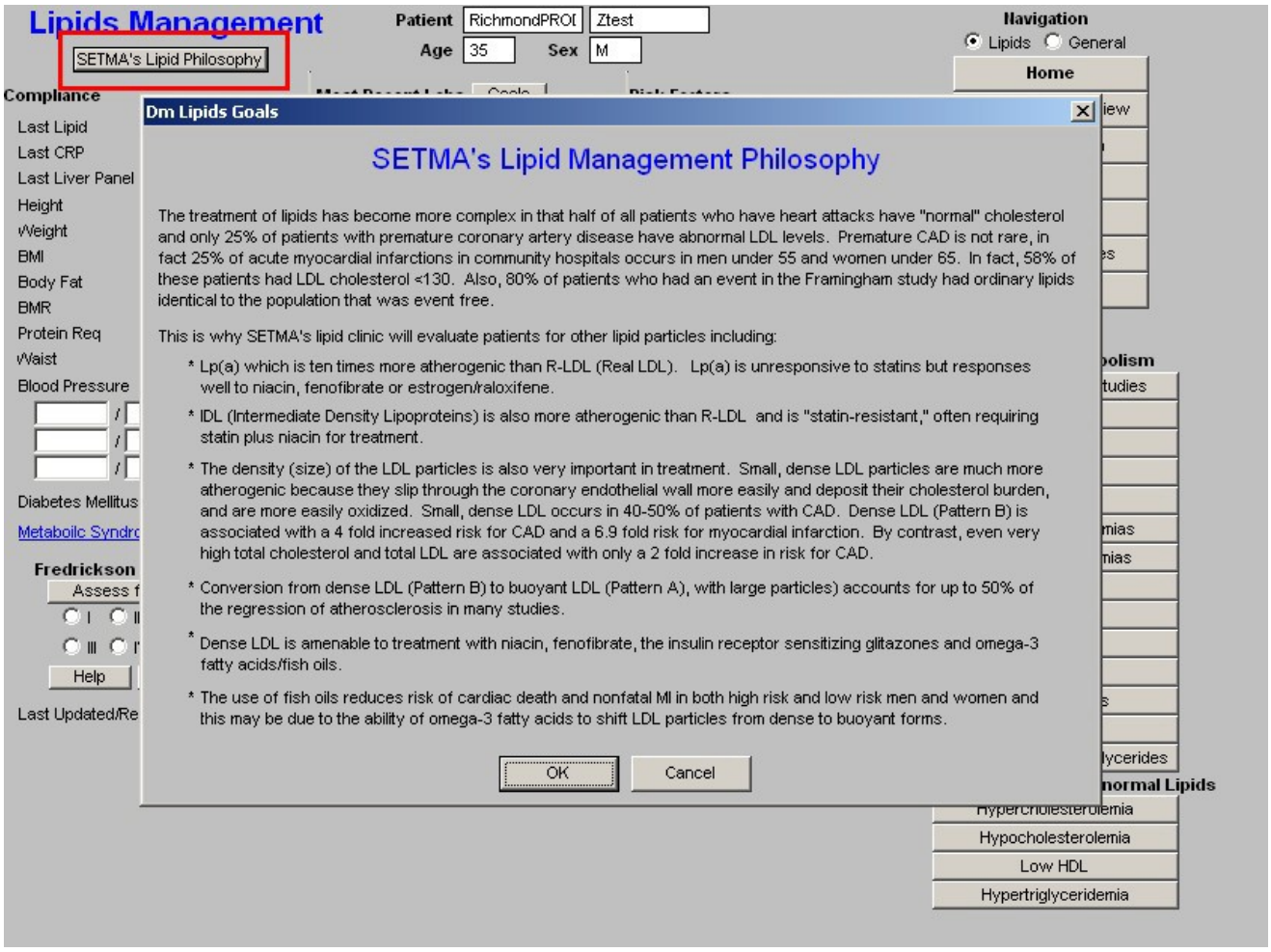
Column 1 --

At the top, is a button entitled "**SETMA's Lipid Philosophy**"; the pop-up which is launched by depressing this button states:

"The treatment of lipids has become more complex in that half of all patients who have heart attacks have 'normal' cholesterol and only 25% of patients with premature coronary artery disease have abnormal LDL levels. Premature CAD is not rare in fact 25% of acute myocardial infarctions in community hospitals occur in men under 55 and women under 65. In fact, 58% of these patients had LDL cholesterol less than 130. Also, 80% of patients who had an event in the Framingham study had ordinary lipid identical to the population that was event free.

This is why SETMA's lipid clinic will evaluate patients for other lipid particles including:

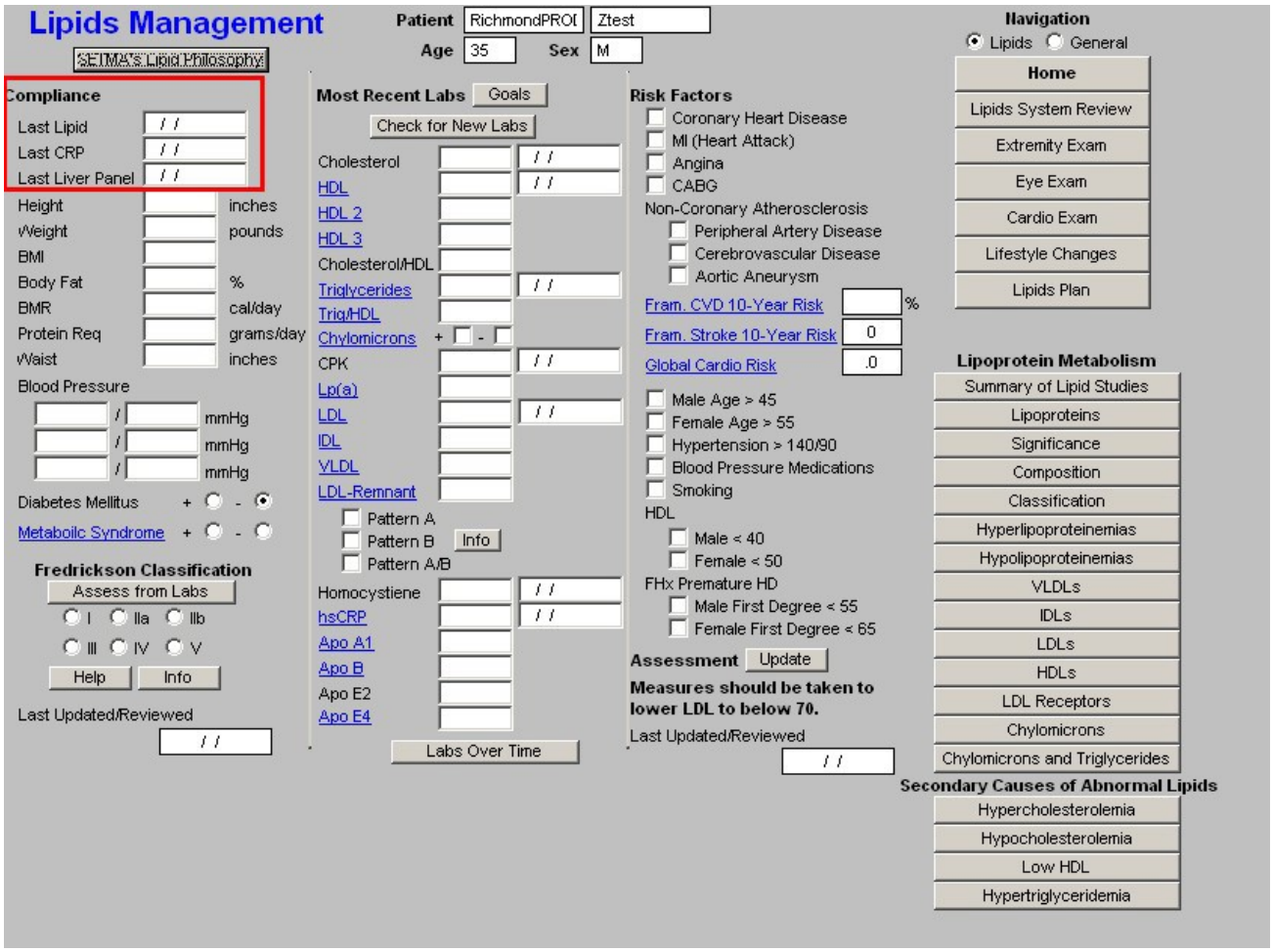
- Lp(a) which is ten times more atherogenic than R-LDL (Real LDL). Lp(a) is unresponsive to statins but responses well to niacin, fenofibrate or estrogen/raloxifene.
- IDL (Intermediate Density Lipoproteins) is also more atherogenic than R-LDL and is "statin- resistant," often requiring statin plus niacin for treatment
- The density (size) of the LDL particles is also very important in treatment. Small, dense LDL particles are much more atherogenic because they slip through the coronary endothelial wall more easily and deposit their cholesterol burden, and are more easily oxidized. Small, dense LDL occurs in 40-50% of patients with CAD. Dense LDL (Pattern B) is associated with a 4 fold increased risk for CAD and a 6.9 fold risk for myocardial infarction, by contrast, even very high total cholesterol and total LDL are associated with only a 2-fold increase in risk for CAD.
- Conversion from dense LDL (Patter B) to buoyant LDL (Pattern A), with larger particles, accounts for up to 50% of the regression of atherosclerosis in many studies.
- Dense LDL is amenable to treatment with niacin, fenofibrate, the insulin receptor sensitizing glitazones and omega-3 fatty acids (fish oils).
- The use of fish oils reduces risk of cardiac death and nonfatal MI in both high risk and low risk men and woman and this my b due to the ability of omega-3 fatty acids to shift LDL particles from dense to forms."



Note: In order to evaluate many of these lipid particles specialized lipids testing such as the **VAP** test must be ordered. However, most insurance companies do not cover these tests; therefore, the patient will need to know their responsibility for payment for these tests before they are performed. **Beneath this button are the following:**

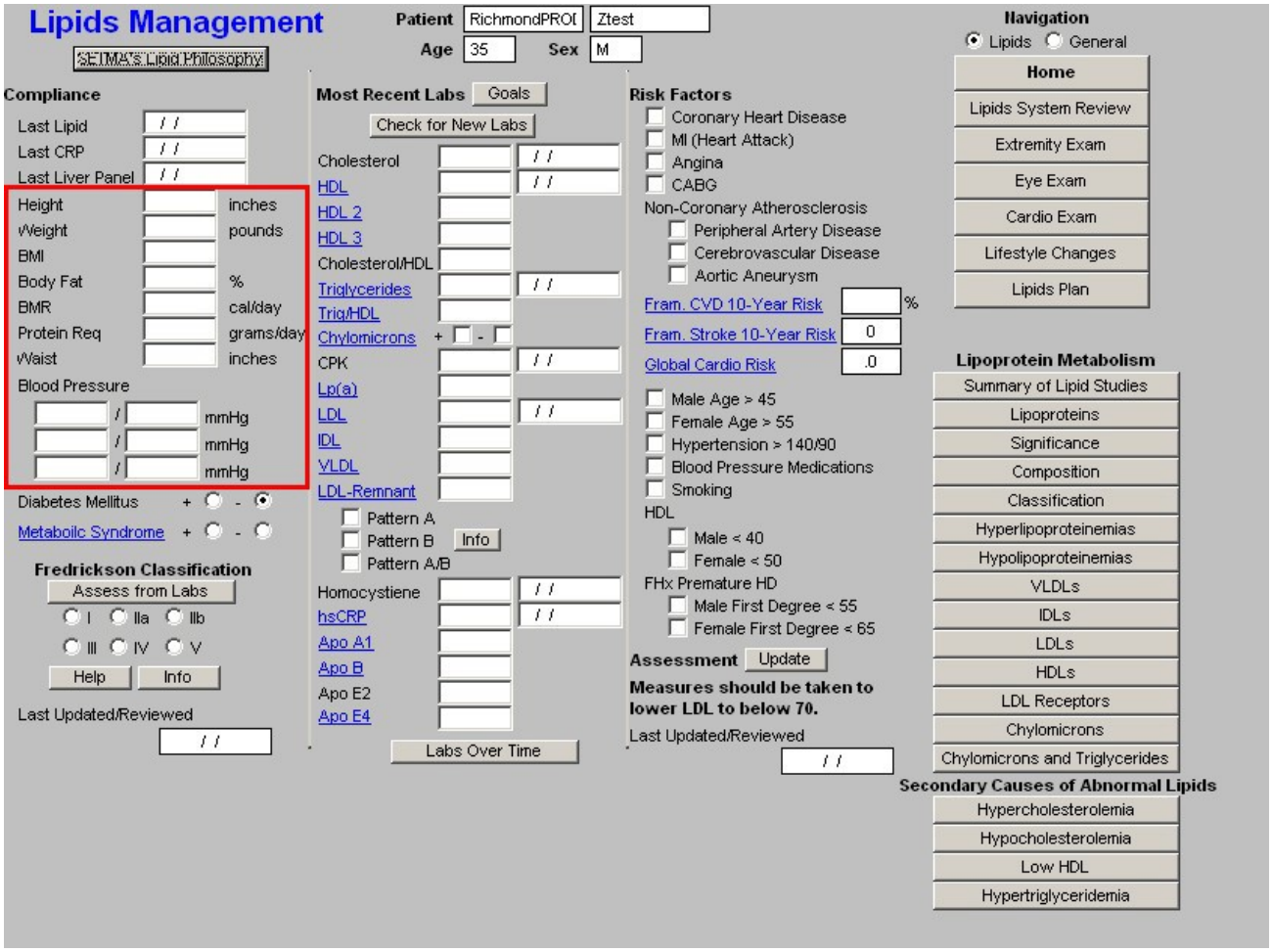
Compliance

- **LastLipid** – this displays the date of the last lipid lab values. This is automatically updated from the lab order templates.
- **Last CRP** – c - reactive protein – this displays the date of the last hsCRP. This is automatically updated from the lab order templates.
- **Last Liver Panel** – this displays the date of the last live panel. This is automatically updated from the lab order templates.

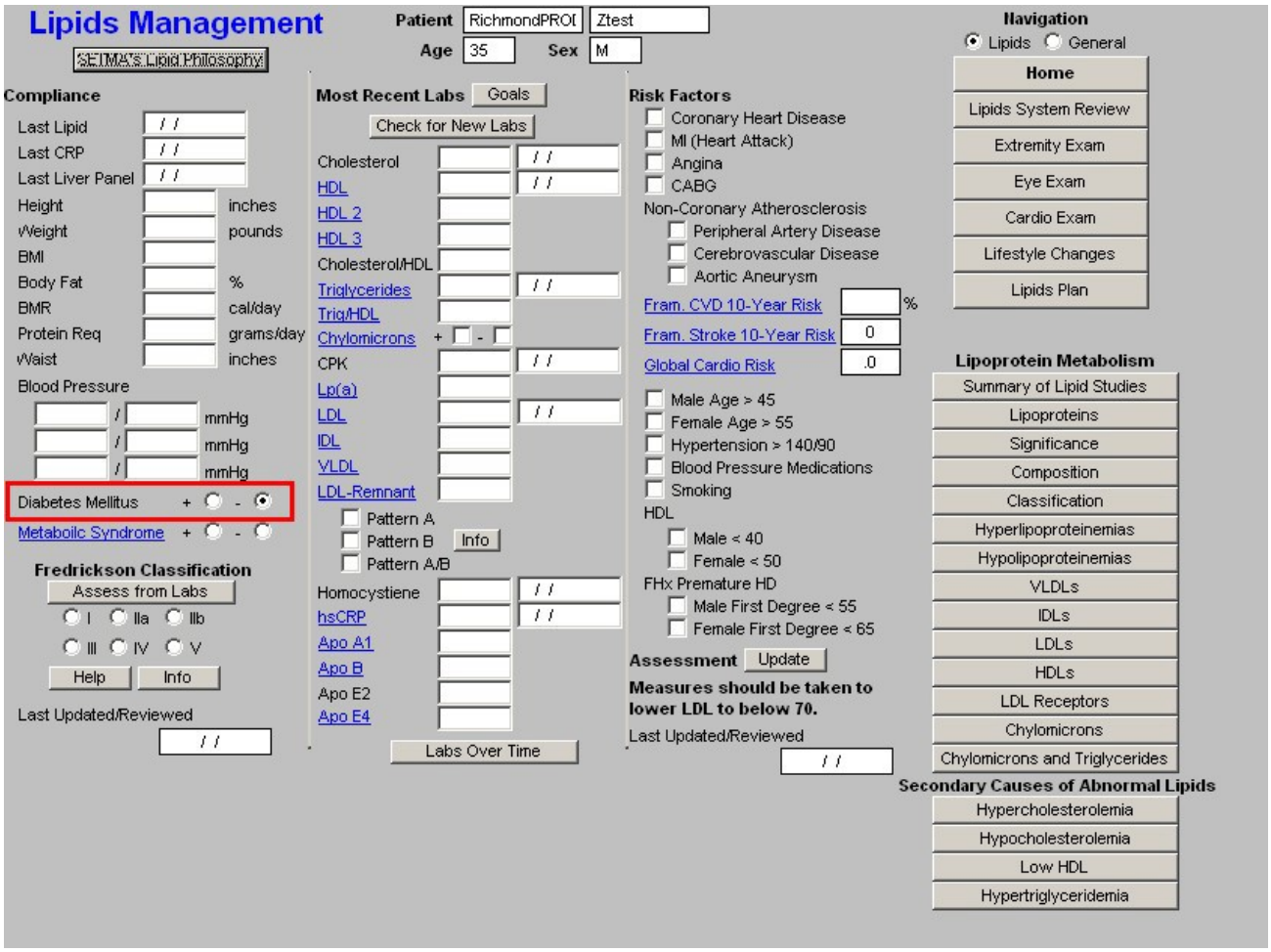

Lipids Management
SETMA's Lipid Philosophy
Patient RichmondPROI Ztest
Age 35 Sex M
Navigation
Lipids General
Home
Lipids System Review
Extremity Exam
Eye Exam
Cardio Exam
Lifestyle Changes
Lipids Plan
Compliance
Last Lipid
Last CRP
Last Liver Panel
Height inches
Weight pounds
BMI
Body Fat %
BMR cal/day
Protein Req grams/day
Waist inches
Blood Pressure
mmHg
mmHg
mmHg
Diabetes Mellitus
Metaboilc Syndrome
Fredrickson Classification
Assess from Labs
I IIa IIb
III IV V
Help
Info
Last Updated/Reviewed
Most Recent Labs
Goals
Check for New Labs
Cholesterol
HDL
HDL 2
HDL 3
Cholesterol/HDL
Triglycerides
Trig/HDL
Chylomicrons
CPK
Lp(a)
LDL
IDL
VLDL
LDL-Remnant
Pattern A
Pattern B
Info
Pattern A/B
Homocystiene
hsCRP
Apo A1
Apo B
Apo E2
Apo E4
Labs Over Time
Risk Factors
Coronary Heart Disease
MI (Heart Attack)
Angina
CABG
Non-Coronary Atherosclerosis
Peripheral Artery Disease
Cerebrovascular Disease
Aortic Aneurysm
Fram. CVD 10-Year Risk %
Fram. Stroke 10-Year Risk 0
Global Cardio Risk .0
Male Age > 45
Female Age > 55
Hypertension > 140/90
Blood Pressure Medications
Smoking
HDL
Male < 40
Female < 50
FHx Premature HD
Male First Degree < 55
Female First Degree < 65
Assessment
Update
Measures should be taken to lower LDL to below 70.
Last Updated/Reviewed
Lipoprotein Metabolism
Summary of Lipid Studies
Lipoproteins
Significance
Composition
Classification
Hyperlipoproteinemias
Hypolipoproteinemias
VLDLs
IDLs
LDLs
HDLs
LDL Receptors
Chylomicrons
Chylomicrons and Triglycerides
Secondary Causes of Abnormal Lipids
Hypercholesterolemia
Hypocholesterolemia
Low HDL
Hypertriglyceridemia

Vital Signs

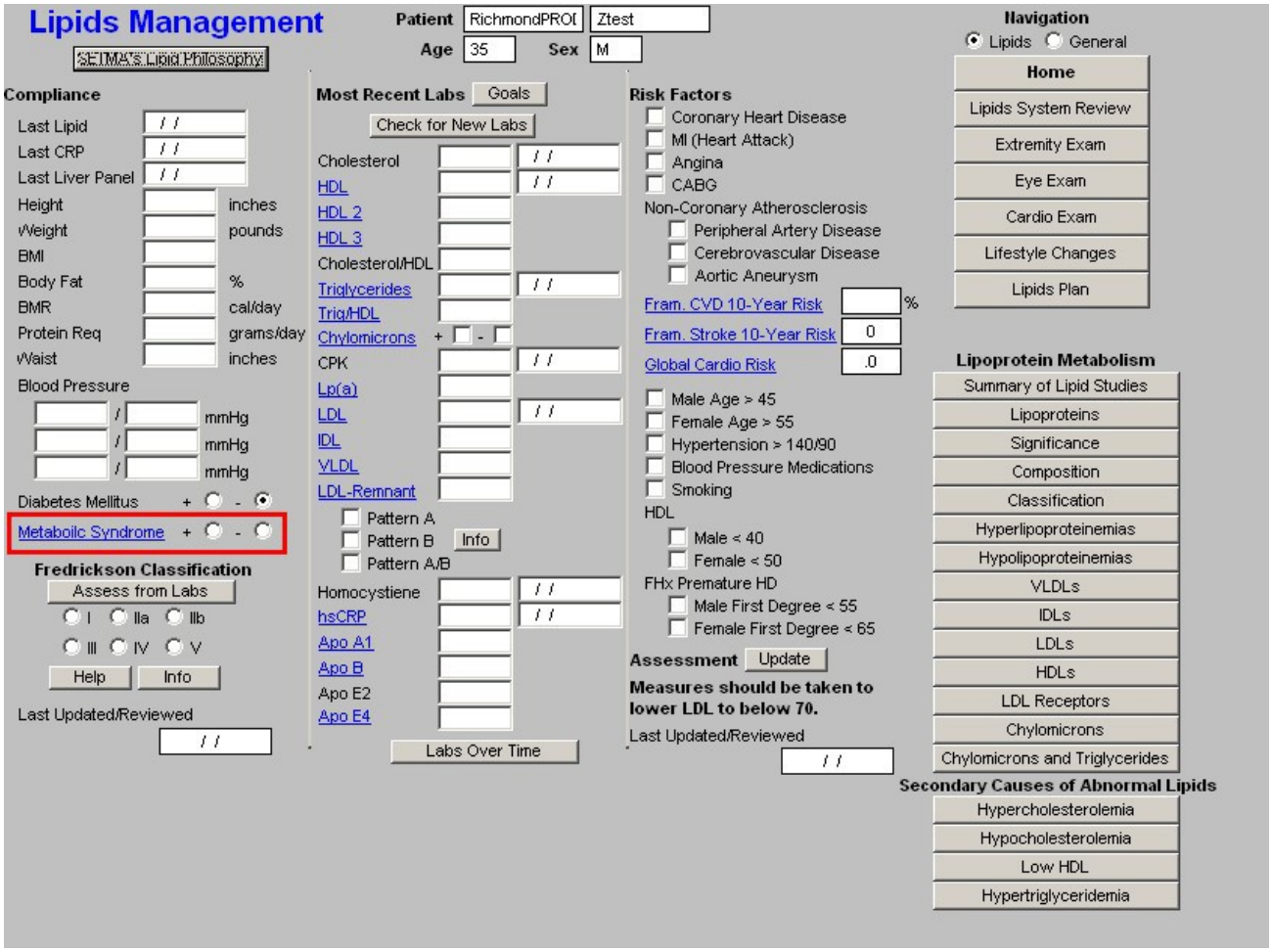
- Height
- Weight
- BMI
- Protein Req
- Waist
- **Blood Pressure** – three boxes are available for documenting subsequent readings.

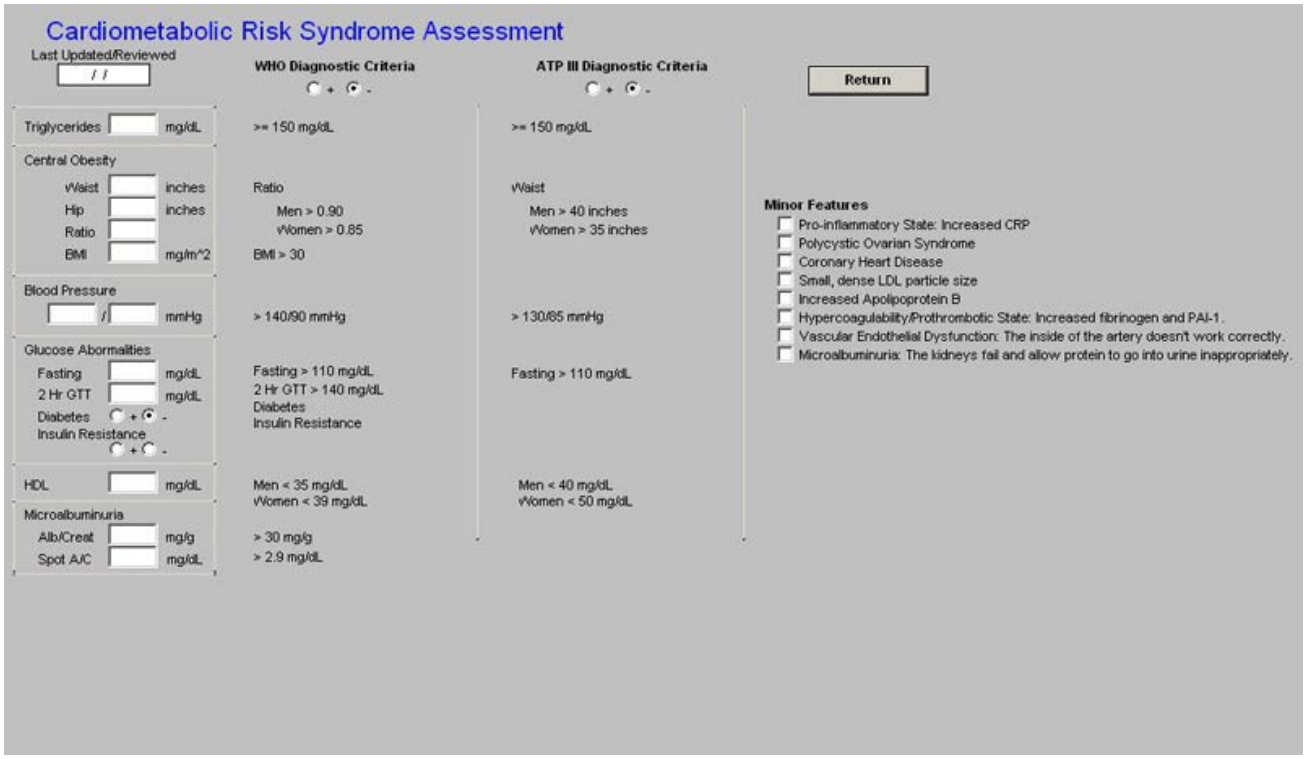


Diabetes Mellitus – check boxes are present for indicating whether or not the patient has diabetes.

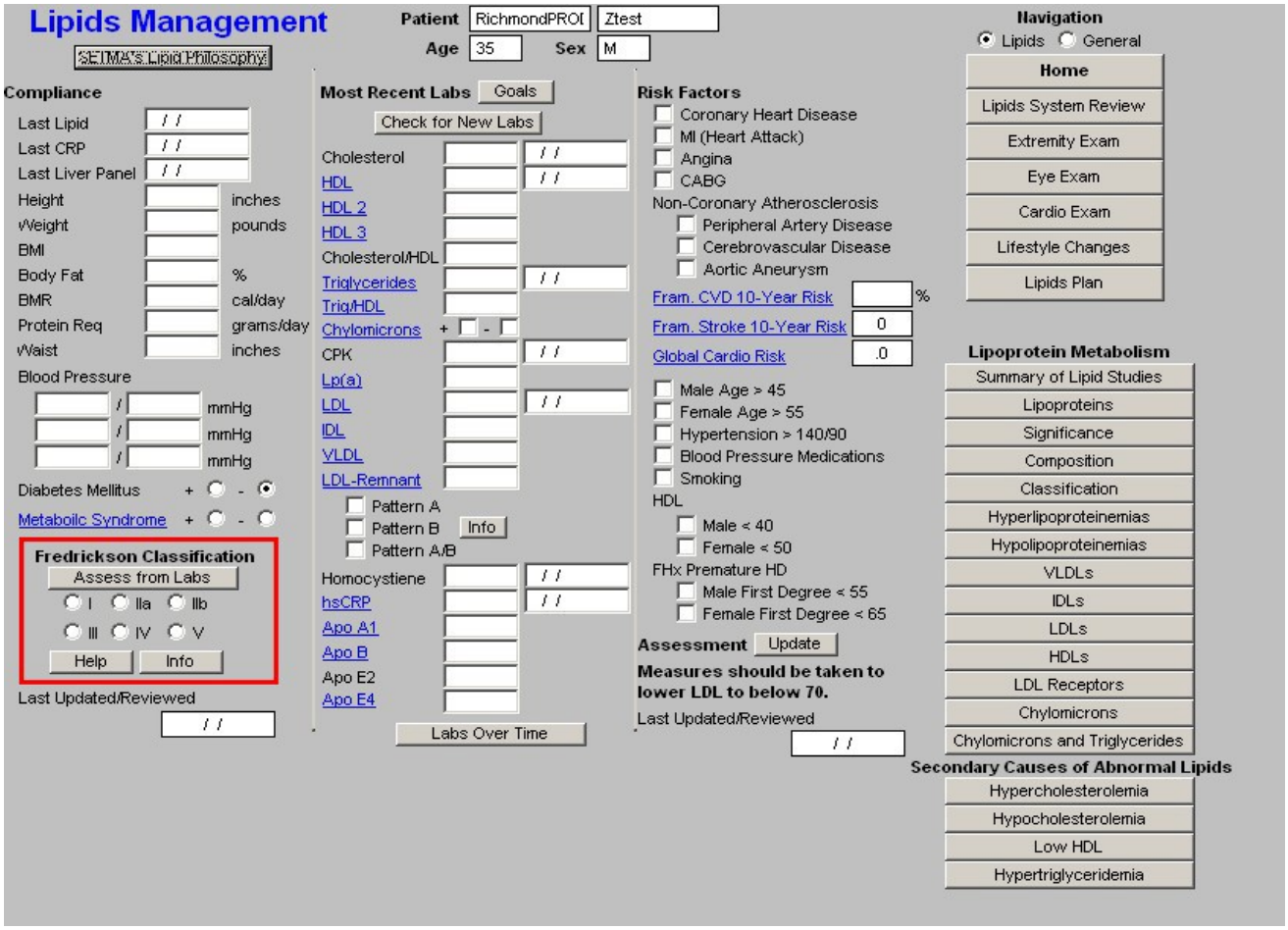


Metabolic Syndrome – this is a link to the assessment template for the Metabolic Syndrome. The elements of diagnosing the Metabolic Syndrome are automatically populated and the determination is made as to whether the patient has the Metabolic Syndrome or not. Both the World Health Organization and the ATP-III criteria are displayed, but the notation for the presence of the Metabolic Syndrome in SETMA's templates is based on ATP-III.




Cardiometabolic Risk Syndrome Assessment
Last Updated/Reviewed
/ /
WHO Diagnostic Criteria
+ -
ATP III Diagnostic Criteria
+ -
Return
Triglycerides mg/dL
>= 150 mg/dL
>= 150 mg/dL
Central Obesity
vWaist inches
Hip inches
Ratio
BMI mg/m^2
Ratio
Men > 0.90
vWomen > 0.85
BMI > 30
vWaist
Men > 40 inches
vWomen > 35 inches
Blood Pressure
/ mmHg
> 140/90 mmHg
> 130/85 mmHg
Glucose Abormalities
Fasting mg/dL
2 Hr GTT mg/dL
Diabetes + -
Insulin Resistance + -
Fasting > 110 mg/dL
2 Hr GTT > 140 mg/dL
Diabetes
Insulin Resistance
Fasting > 110 mg/dL
HDL mg/dL
Men < 35 mg/dL
vWomen < 39 mg/dL
Men < 40 mg/dL
vWomen < 50 mg/dL
Microalbuminuria
Alb/Creat mg/g
Spot A/C mg/dL
> 30 mg/g
> 2.9 mg/dL
Minor Features
Pro-inflammatory State: Increased CRP
Polycystic Ovarian Syndrome
Coronary Heart Disease
Small, dense LDL particle size
Increased Apolipoprotein B
Hypercoagulability/Prothrombotic State: Increased fibrinogen and PAI-1.
Vascular Endothelial Dysfunction: The inside of the artery doesn't work correctly.
Microalbuminuria: The kidneys fail and allow protein to go into urine inappropriately.

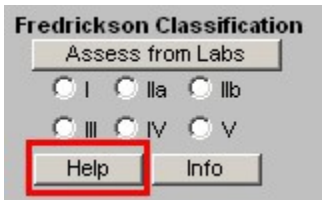
Fredrickson Classification

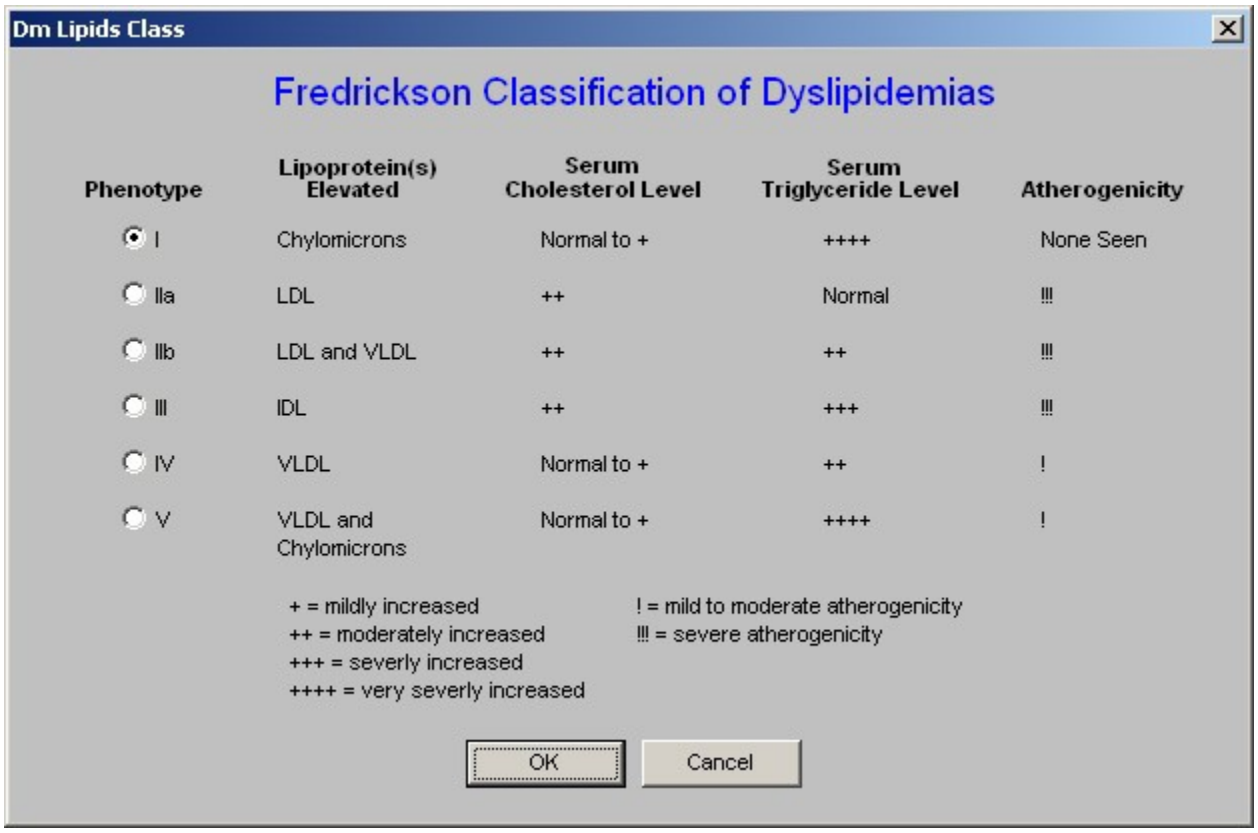


- **Assess from Labs** – this button (**Assessment from Labs**) launches a calculation which evaluates the laboratory data displayed in column 2 to determine which one of **six Fredrickson Classes of Lipids** is present in this patient. There are times, particularly when the patient is treated, that the classification will not automatically calculate. And, there are many times, of course, when the patient's lipids are normal and therefore the classification does not calculate because it does not apply.
- **Types I, IIa, IIb, III, IV, V** – when the Assess from Labs button is depressed and when there is a clear Fredrickson category present, the appropriate check box is automatically indicated

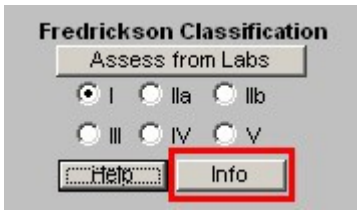
- **Help** – this help button launches a pop-up which displays the six **Fredrickson Classifications** and gives the details of each based on:
    1. Lipoproteins Elevated,

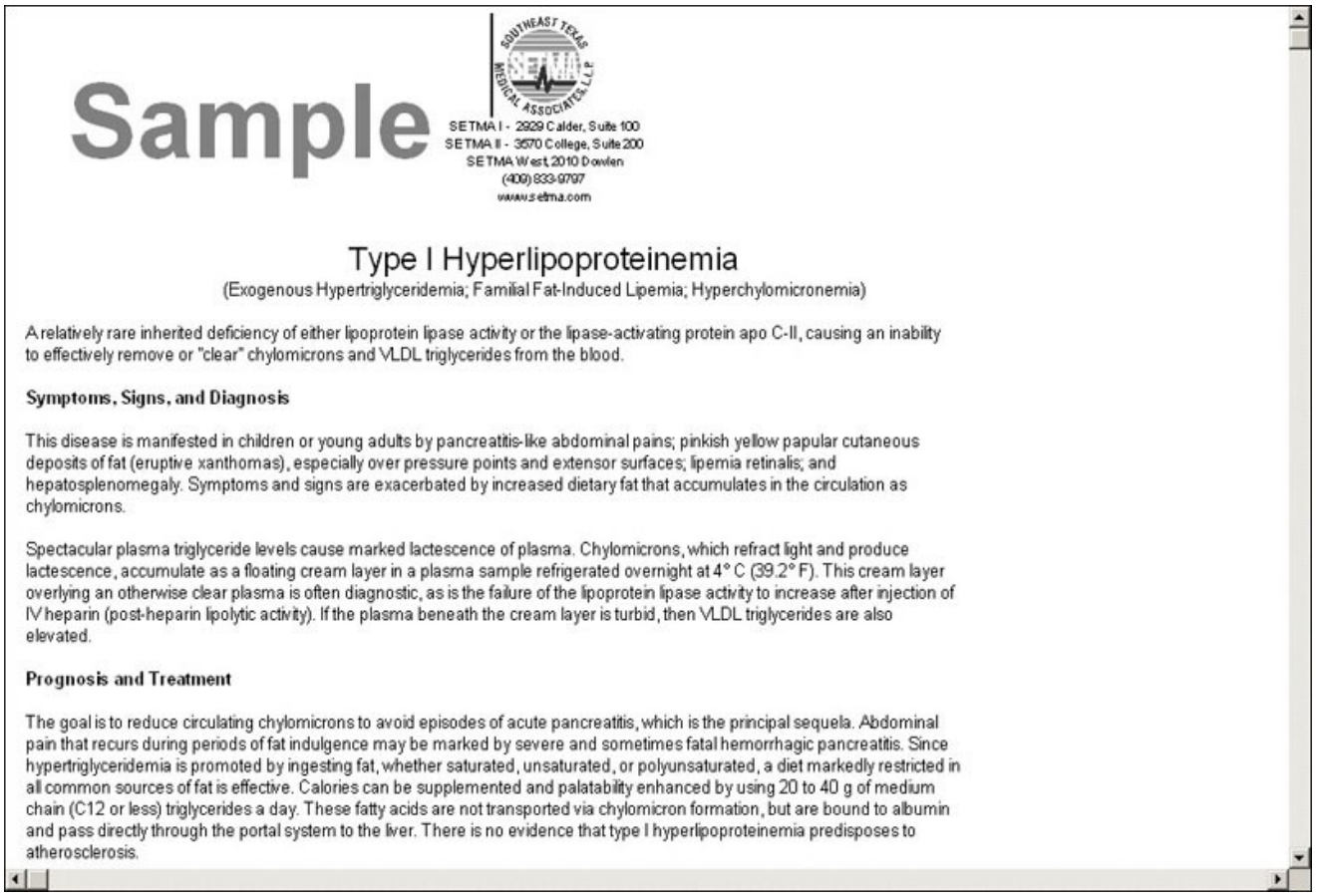
2. Serum Cholesterol Level,
3. Serum Triglyceride Level.
4. Atherogencicity.





- **Info** – this button launches a monograph about the particular **Fredrickson Classification** which is indicated by the **Assess from Lab** function. This article can be printed and given to the patient or read by the provider.





Sample

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SETMA West, 2010 Dowlen
(409) 833-9797
www.setma.com

Type I Hyperlipoproteinemia

(Exogenous Hypertriglyceridemia; Familial Fat-Induced Lipemia; Hyperchylomicronemia)

A relatively rare inherited deficiency of either lipoprotein lipase activity or the lipase-activating protein apo C-II, causing an inability to effectively remove or "clear" chylomicrons and VLDL triglycerides from the blood.

Symptoms, Signs, and Diagnosis

This disease is manifested in children or young adults by pancreatitis-like abdominal pains; pinkish yellow papular cutaneous deposits of fat (eruptive xanthomas), especially over pressure points and extensor surfaces; lipemia retinalis; and hepatosplenomegaly. Symptoms and signs are exacerbated by increased dietary fat that accumulates in the circulation as chylomicrons.

Spectacular plasma triglyceride levels cause marked lactescence of plasma. Chylomicrons, which refract light and produce lactescence, accumulate as a floating cream layer in a plasma sample refrigerated overnight at 4° C (39.2° F). This cream layer overlying an otherwise clear plasma is often diagnostic, as is the failure of the lipoprotein lipase activity to increase after injection of IV heparin (post-heparin lipolytic activity). If the plasma beneath the cream layer is turbid, then VLDL triglycerides are also elevated.

Prognosis and Treatment

The goal is to reduce circulating chylomicrons to avoid episodes of acute pancreatitis, which is the principal sequela. Abdominal pain that recurs during periods of fat indulgence may be marked by severe and sometimes fatal hemorrhagic pancreatitis. Since hypertriglyceridemia is promoted by ingesting fat, whether saturated, unsaturated, or polyunsaturated, a diet markedly restricted in all common sources of fat is effective. Calories can be supplemented and palatability enhanced by using 20 to 40 g of medium chain (C12 or less) triglycerides a day. These fatty acids are not transported via chylomicron formation, but are bound to albumin and pass directly through the portal system to the liver. There is no evidence that type I hyperlipoproteinemia predisposes to atherosclerosis.

Column 2 --

At the top, you will find the patient's name, age and sex

Beneath that is a button entitled "**Goals**," this gives SETMA's goals in treating dyslipidemia. They are:

Total Cholesterol	<120
HDL	>50
HDL2	>10
HDL3	>30
Triglycerides	<90
Lp(a)	<10
Total LDL	<70
IDL	<20

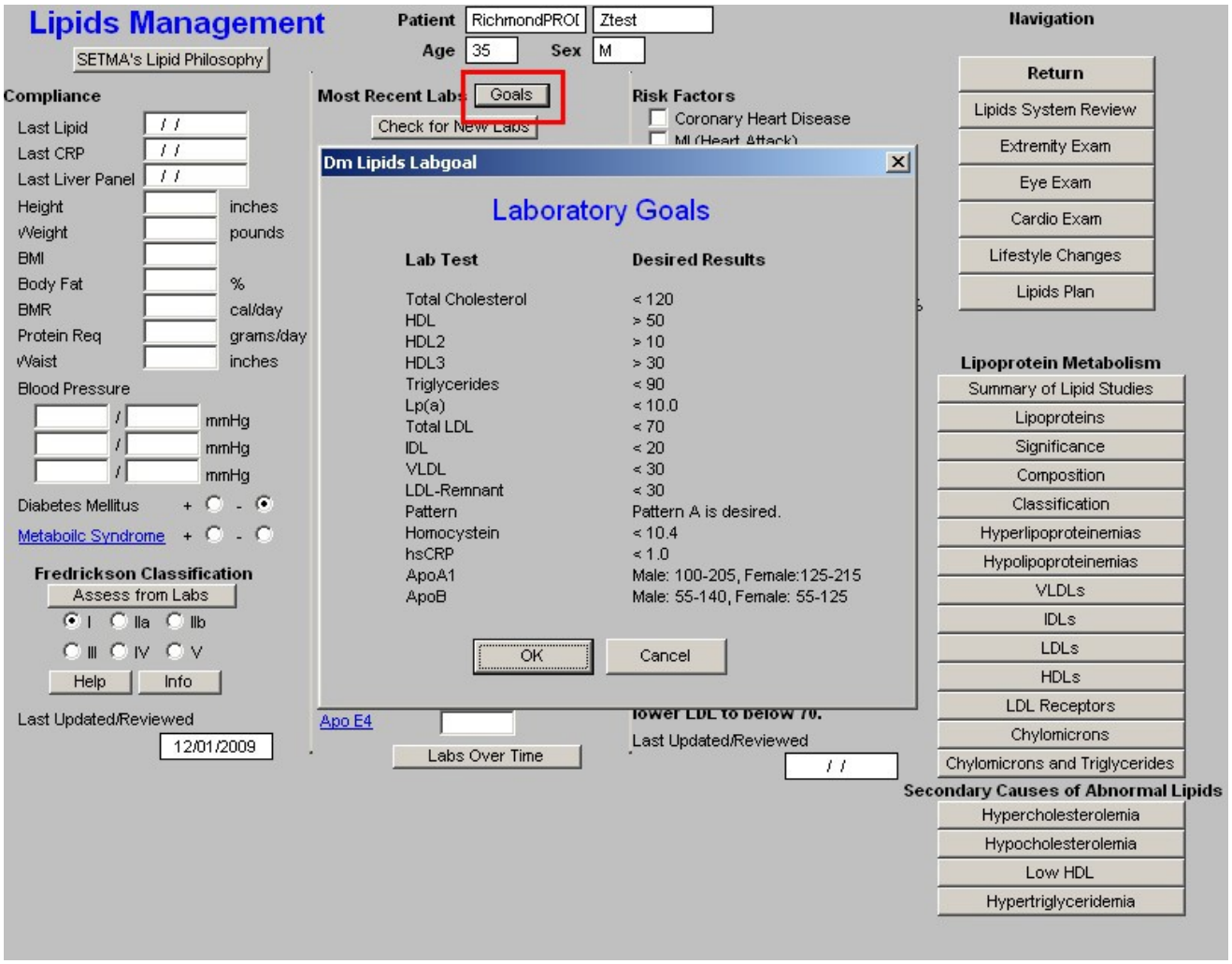
VLDL	<30
LDL-Remnant	<30
Pattern	Pattern A
Homocysteine	<10.4
hsCRP	<1.0
ApoA1	Male 100-205; Females 125-215
ApoB	Male 55-140; Females 55-125

These are aggressive goals but emerging research data is supporting these as appropriate goals for those who are either at "high risk" as determined by:

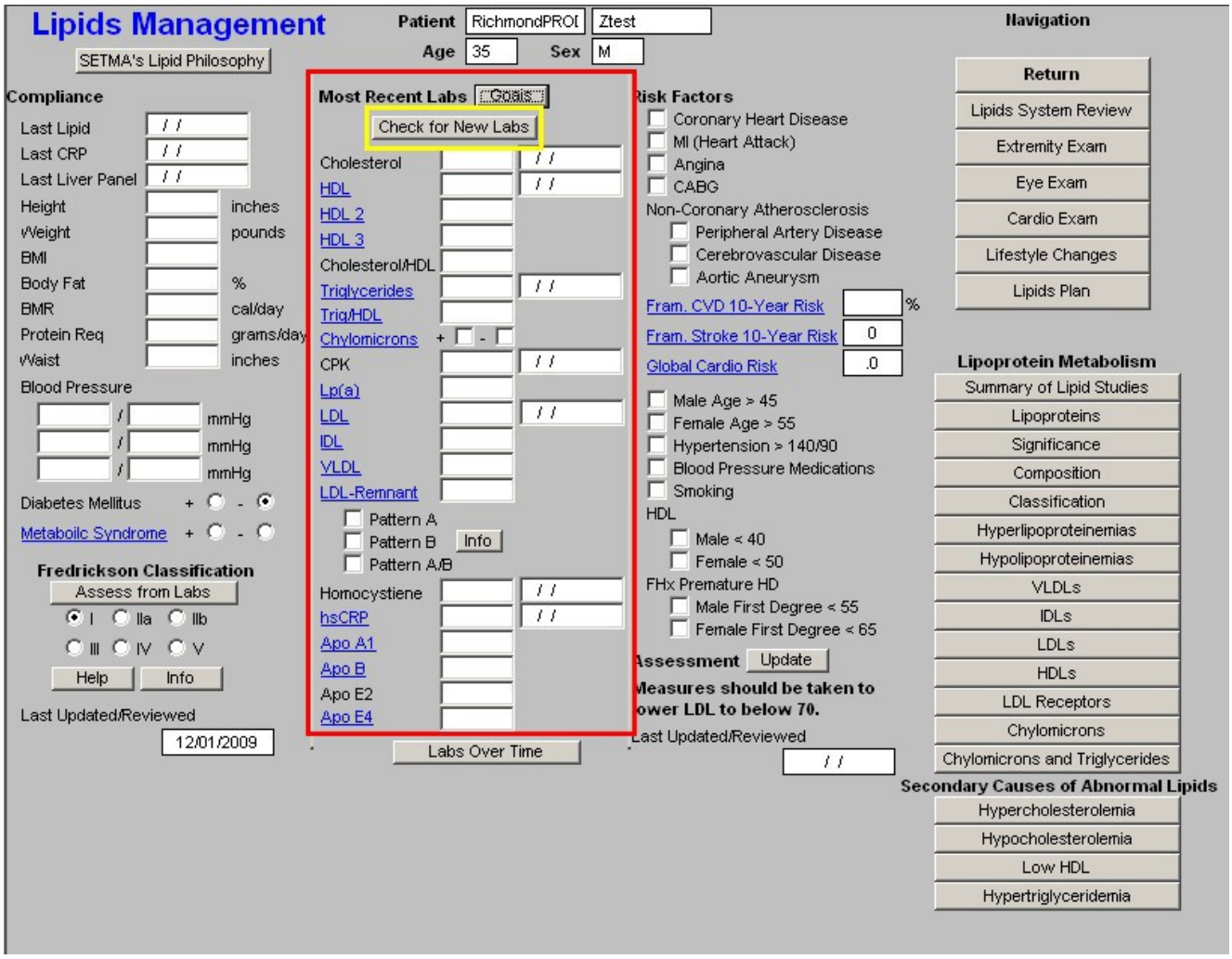
- the Framingham Risk Score,
- a personal history of cardiovascular disease,
- the presence of diabetes,
- having the metabolic syndrome

and/or

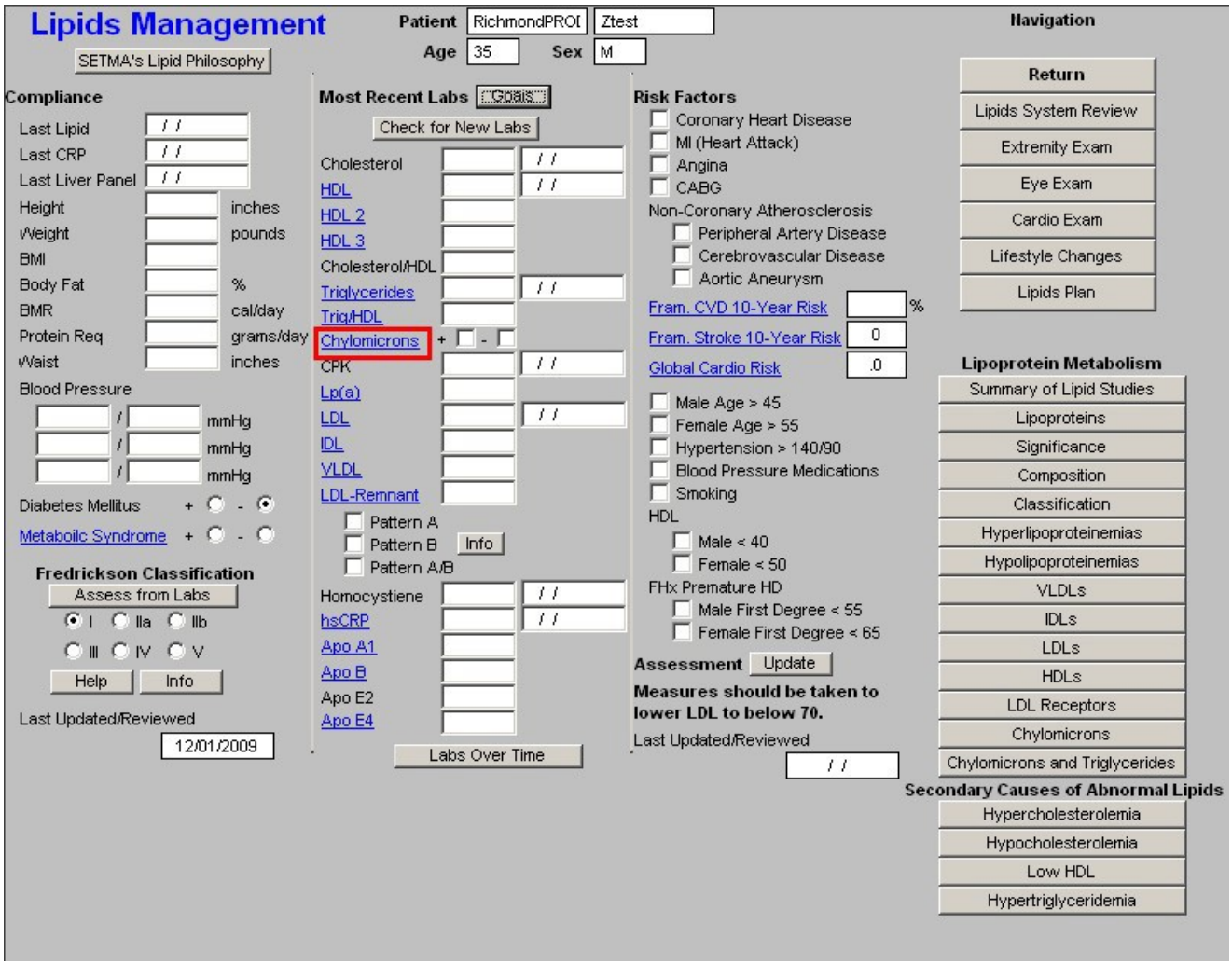
- a personal desire to eliminate atherosclerosis risk so far as is possible.



Beneath this is a button entitled "**Check for new labs**" – when this button is depressed the system finds the latest laboratory values available and populates the template with them. The date on which each lab test was performed is indicated in the box to the right of each lab value.



Note: Any Lab Name which is in Blue has a explanatory document attached to it which can be accessed by the clicking of the name. The document launched by these buttons can also be printed.


Lipids Management
Patient RichmondPRO[Ztest
Age 35 Sex M
SETMA's Lipid Philosophy
Navigation
Return
Lipids System Review
Extremity Exam
Eye Exam
Cardio Exam
Lifestyle Changes
Lipids Plan
Compliance
Last Lipid
Last CRP
Last Liver Panel
Height inches
Weight pounds
BMI
Body Fat %
BMR cal/day
Protein Req grams/day
Waist inches
Blood Pressure
mmHg
mmHg
mmHg
Diabetes Mellitus
Metaboilc Syndrome
Fredrickson Classification
Assess from Labs
I IIa IIb
III IV V
Help
Info
Last Updated/Reviewed
12/01/2009
Most Recent Labs
Goals
Check for New Labs
Cholesterol
HDL
HDL 2
HDL 3
Cholesterol/HDL
Triglycerides
Trig/HDL
Chylomicrons
CPK
Lp(a)
LDL
IDL
VLDL
LDL-Remnant
Pattern A
Pattern B
Info
Pattern A/B
Homocystiene
hsCRP
Apo A1
Apo B
Apo E2
Apo E4
Labs Over Time
Risk Factors
Coronary Heart Disease
MI (Heart Attack)
Angina
CABG
Non-Coronary Atherosclerosis
Peripheral Artery Disease
Cerebrovascular Disease
Aortic Aneurysm
Fram. CVD 10-Year Risk %
Fram. Stroke 10-Year Risk 0
Global Cardio Risk .0
Male Age > 45
Female Age > 55
Hypertension > 140/90
Blood Pressure Medications
Smoking
HDL
Male < 40
Female < 50
FHx Premature HD
Male First Degree < 55
Female First Degree < 65
Assessment
Update
Measures should be taken to lower LDL to below 70.
Last Updated/Reviewed
Lipoprotein Metabolism
Summary of Lipid Studies
Lipoproteins
Significance
Composition
Classification
Hyperlipoproteinemias
Hypolipoproteinemias
VLDLs
IDLs
LDLs
HDLs
LDL Receptors
Chylomicrons
Chylomicrons and Triglycerides
Secondary Causes of Abnormal Lipids
Hypercholesterolemia
Hypocholesterolemia
Low HDL
Hypertriglyceridemia

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Chylomicrons

Chylomicrons transport dietary fat from gut to adipose tissue, liver and muscle cells. They have the heaviest mass of any lipid-containing particle and are the richest in triglyceride. In general, fat absorption is complete within a few hours of ingesting food, and the chylomicron concentration fluctuates during this period. In fit, healthy people chylomicrons account for a modes postprandial rise in triglycerides. However in individuals where the clearance of chylomicrons from the circulation is delayed there may be a marked rise in triglyceride following [illegible]

Chylomicrons are initially secreted into the [illegible] and [illegible] lymphatic circulation to enter the blood via the thoracic duct in the chest.

They consist of approximately:

* 80% triglyceride
* 9% phospholipids
* 6% cholesterol and cholesterol-esters
small proportion of protein:
    * apolipoprotein B from small intestine
    * apolipoprotein C from HDL

Lipoprotein lipase, an enzyme located on the surface of endothelial capillaries, works in the presence of apolipoprotein C to degrade triglyceride within the chylomicron to free fatty acids and glycerol. These products may be taken up and either respired or resynthesized into triglycerides for storage.

Thus, the chylomicron is reduced in size by the removal of lipid. The resulting particle is a chylomicron remnant which is phagocytosed in hepatocytes via receptors that recognize apolipoprotein E (apo E).

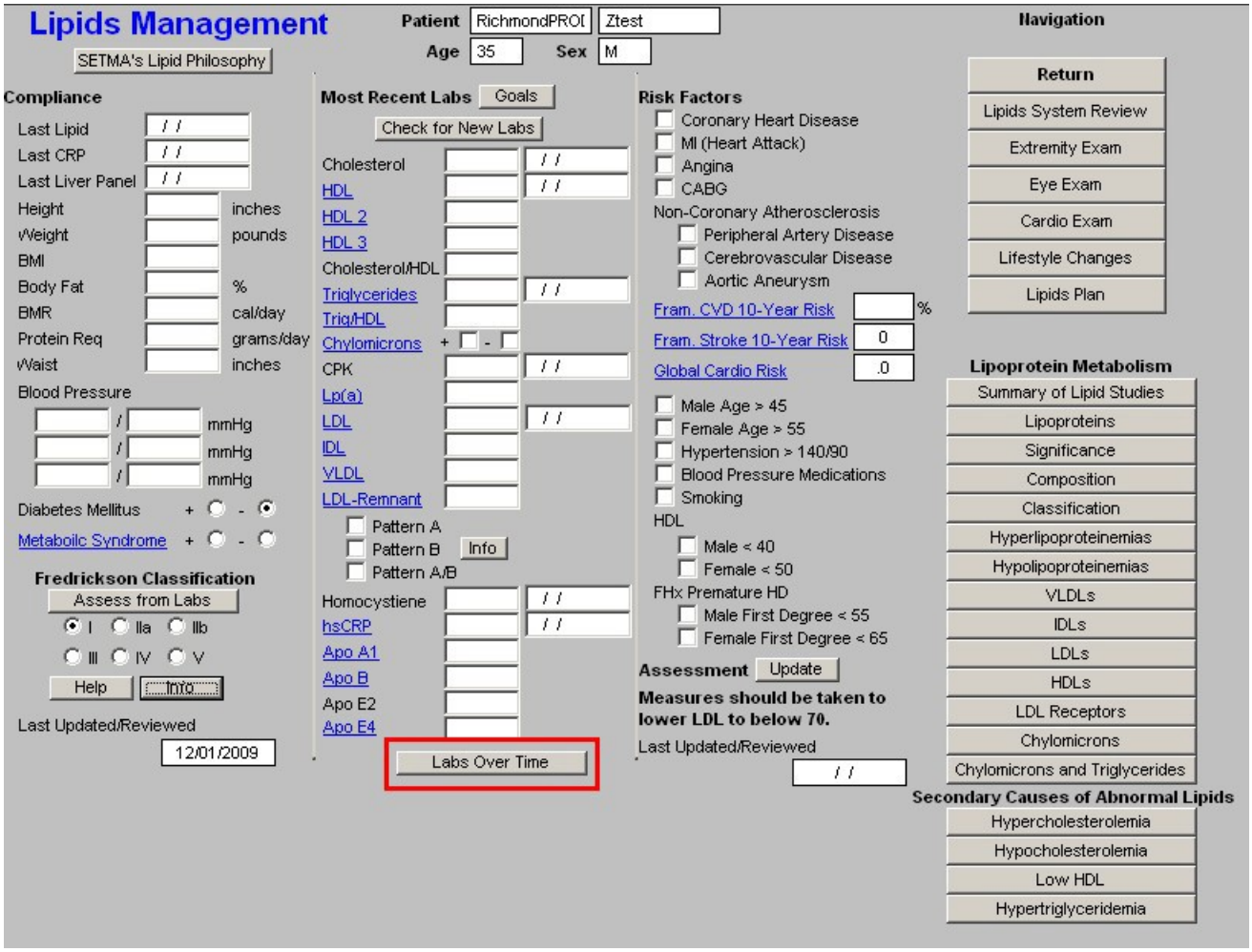
The lab results which are automatically pulled from NextGen's Laboratory Module into SETMA's Master Lipid Template are:

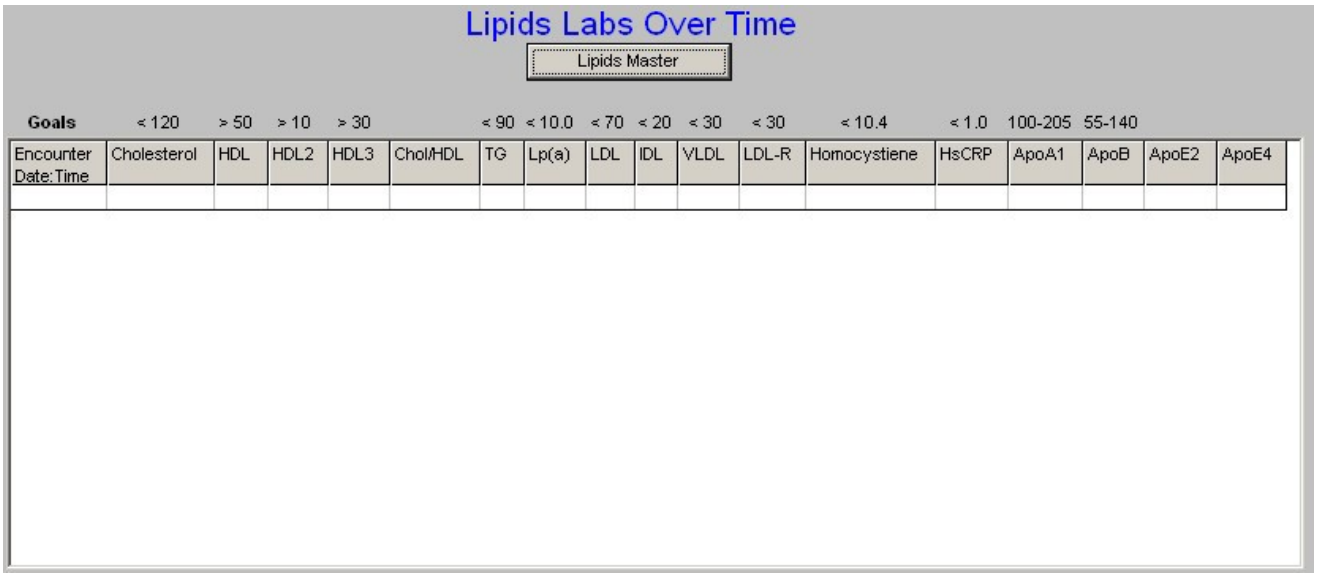
- Cholesterol
- HDL
- HDL 2
- HDL 3
- Cholesterol/HDL Ratio
- Triglycerides
- Trig/HDL
- Chylomicrons
- CPK
- Lp(a)
- LDL
- IDL
- VLDL
- LDL-Remnant
    0. Pattern A

0. Pattern B
0. Pattern A/B

- Homocsyteine
- hsCRP
- ApoA1
- ApoB
- ApoE2
- Apo E4

At the bottom of this column is a button entitled "**Lab Over Time**," which allows you to simultaneously view the results of multiple lab values on different dates.





Note: The **Menu Bar's File/Graph** function allows you to display any lab value in graph form. For information on using this function go to SETMA's Intranet and see the Tutorial on "**How to Navigate within NextGen**."

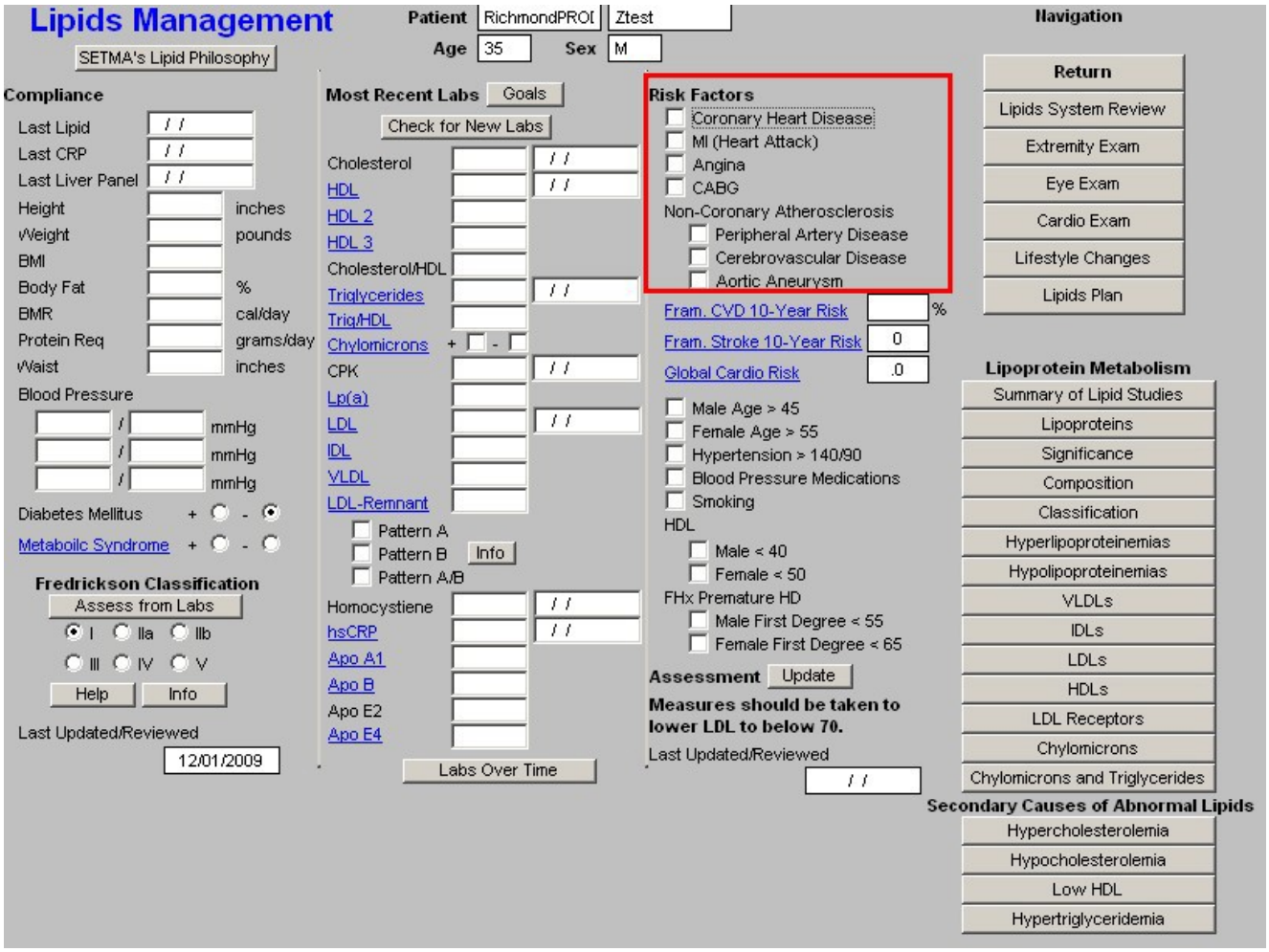
Column 3 --

Risk Factors – these, along with Diabetes and the Metabolic Syndrome, which are documented in column 1, identify the factors which increase the patient's risk of cardiovascular disease and consequently increases the need to control the patient's lipids aggressively. They are:

Note: If the **Cardiac Hx** data is properly filled out on the **History** template, this data will automatically populate. For details go to **SETMA's Intranet** and review the **Master GP Tutorial** with particular attention to the **History Template**.

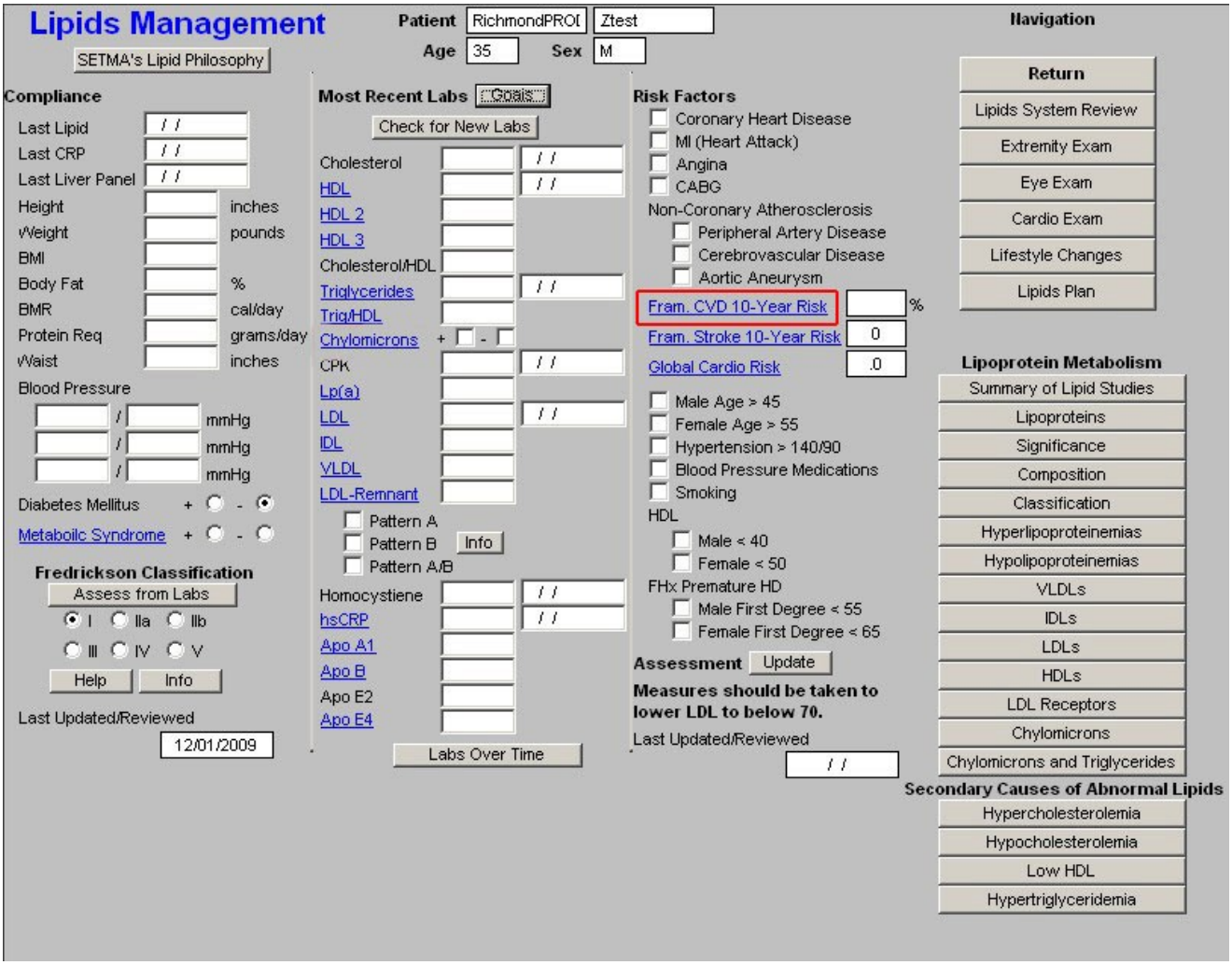
- Coronary Heart Disease
- MI (Heart Disease)
- Angina
- CABG
- Non-Coronary Atherosclerosis

    0. Peripheral Vascular Disease
    0. Cerebrovascular Disease
    0. Aortic Aneurysm

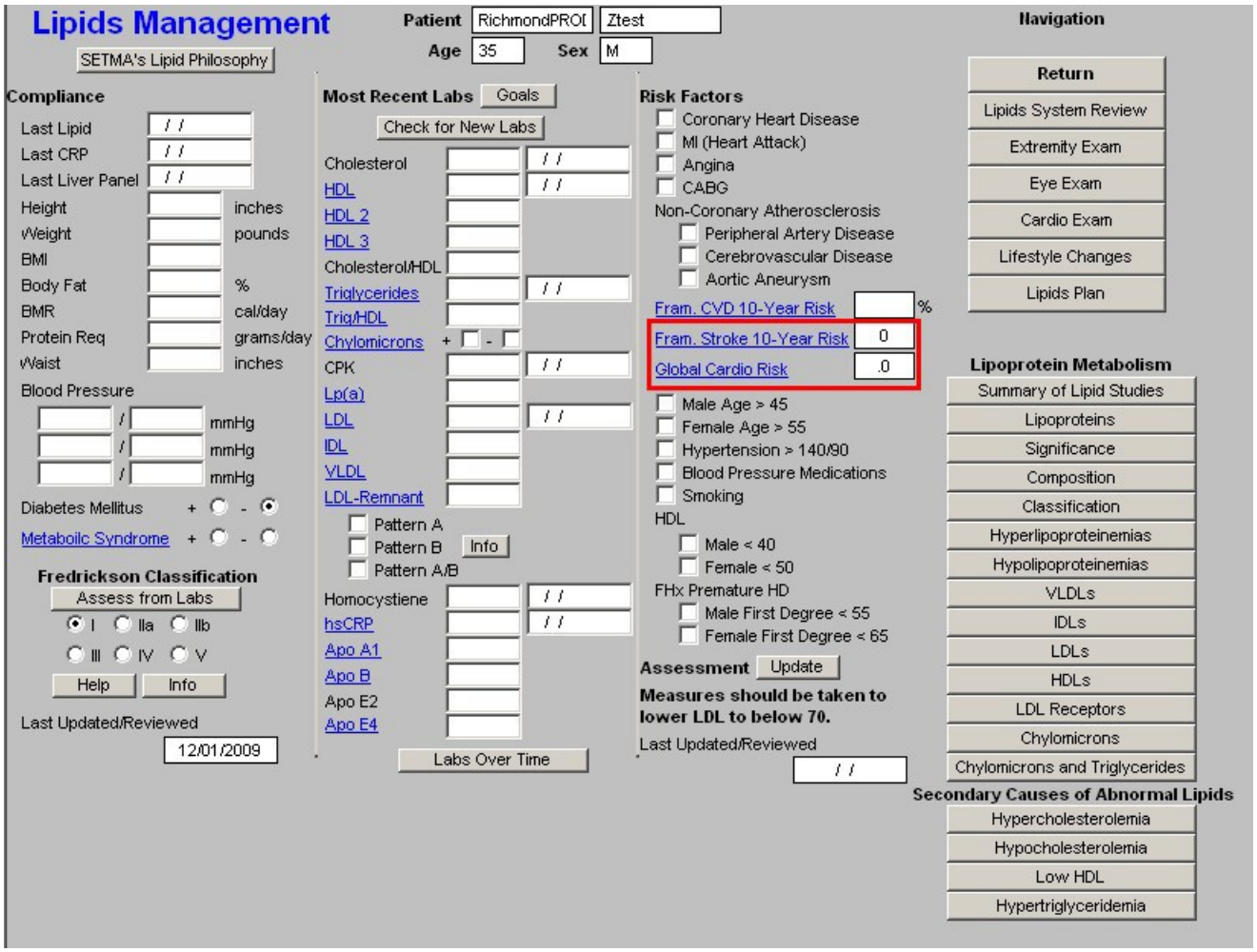


Beneath these Risk Factors are three links which evaluates the cumulative risk of a number of risk factors based on the Framingham Data:

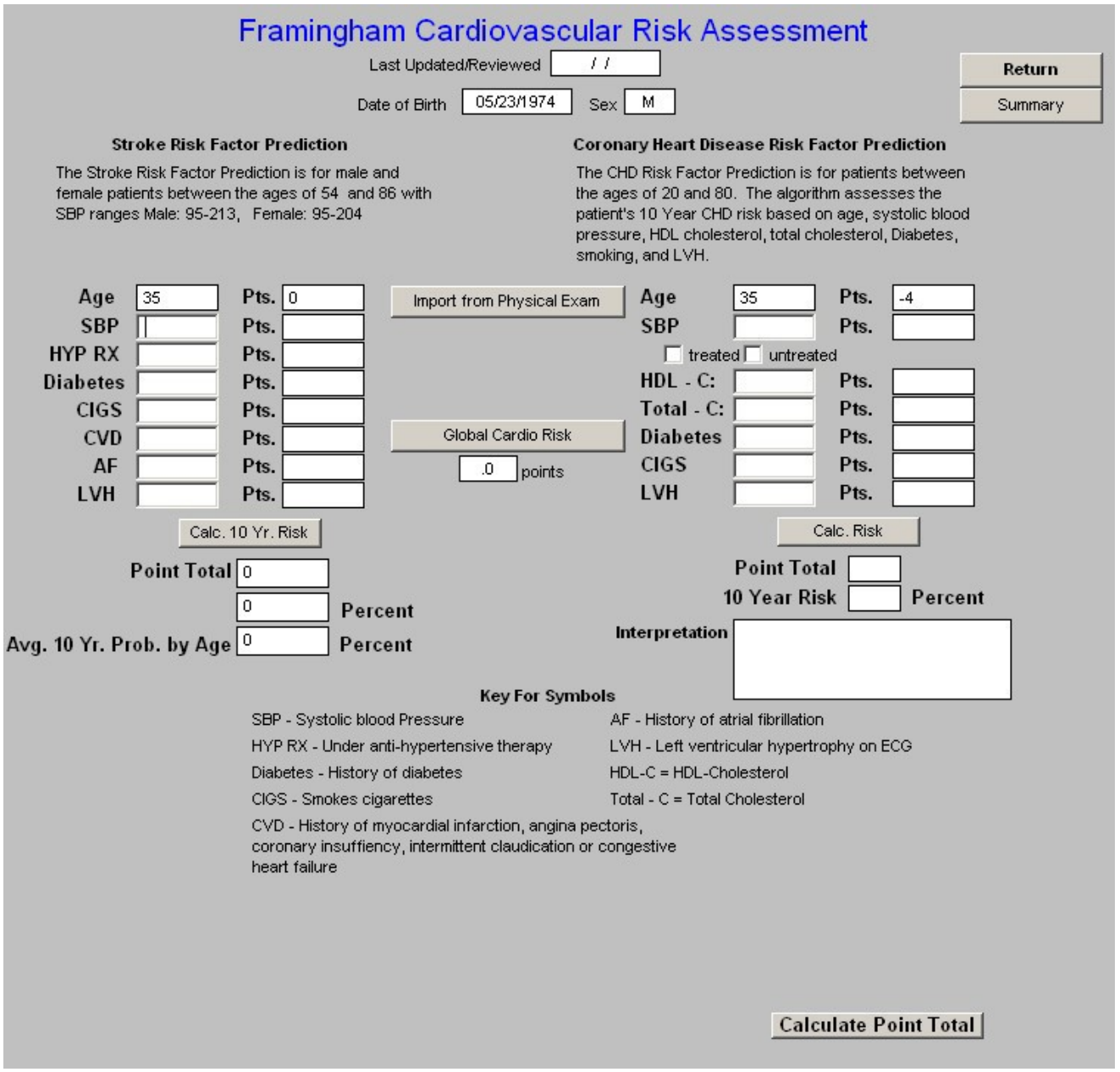
- Framingham 10-Year CVD Risk



- Framingham 10-year Stroke Risk

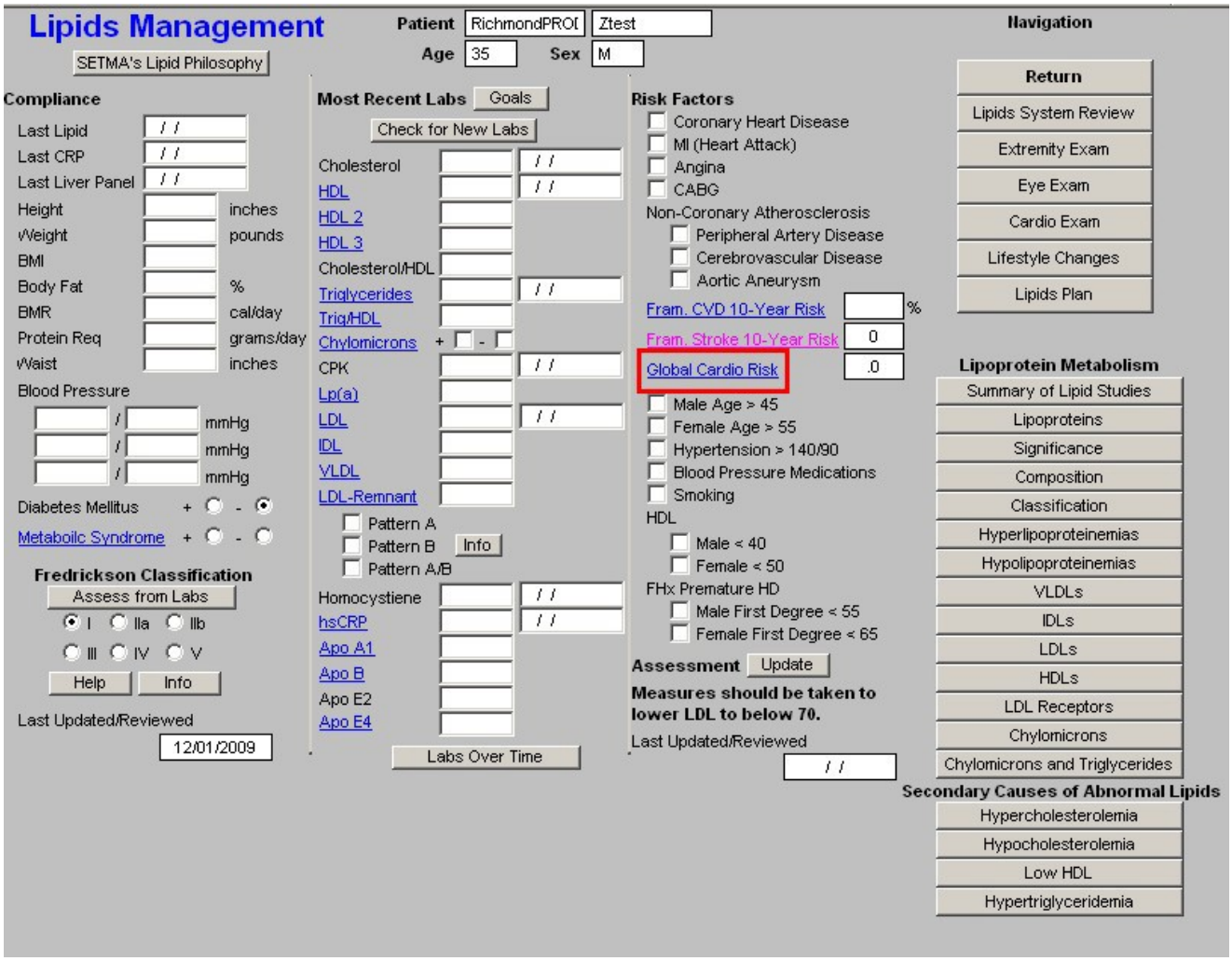


NOTE: Both of the above hyperlinks will access the "**Framingham Cardiovascular Risk Assessment**" template.



- **Global Cardio Risk** – this is a new calculation which is based on the Framingham Data but which only addresses the five modifiable risk factors. A score above 4 indicates an increased cardiovascular risk burden. The five modifiable risk factors are:

    0. Cholesterol
    0. HDL
    0. Hgb A1C
    0. Systolic Blood Pressure
    0. Smoking


Lipids Management
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Height inches
Weight pounds
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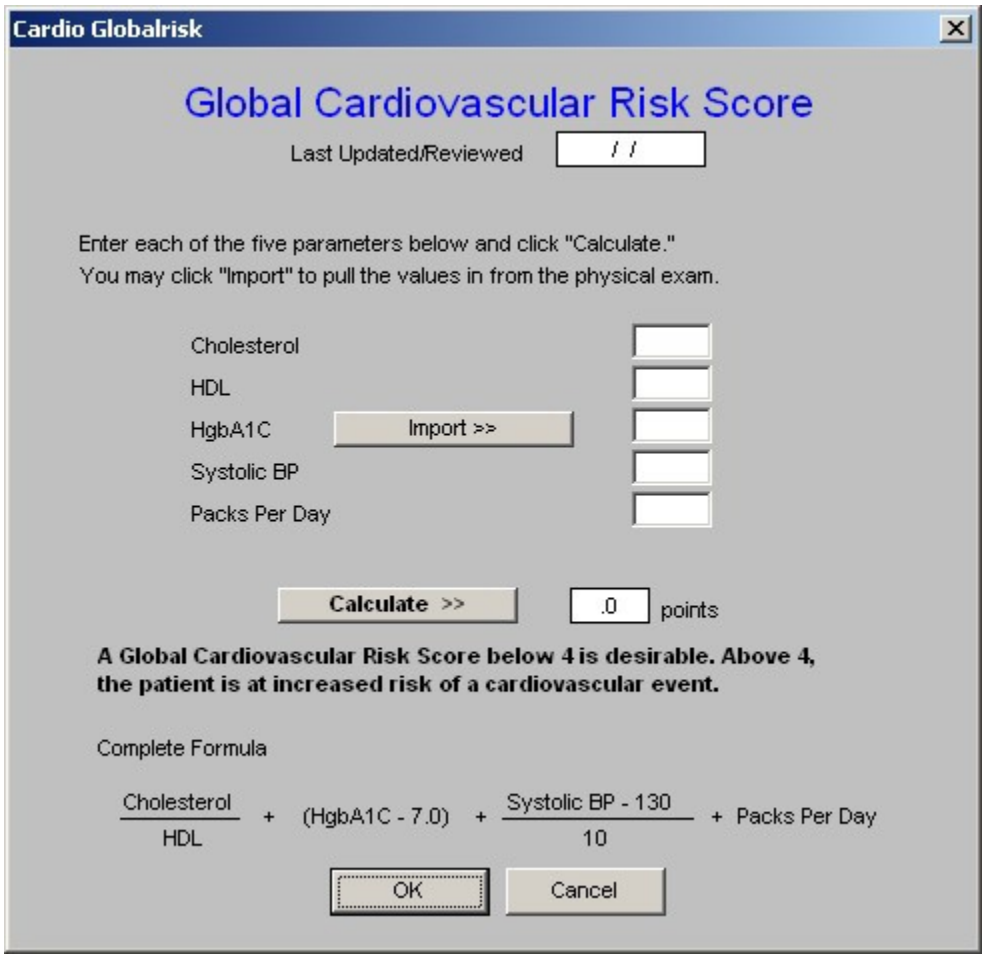
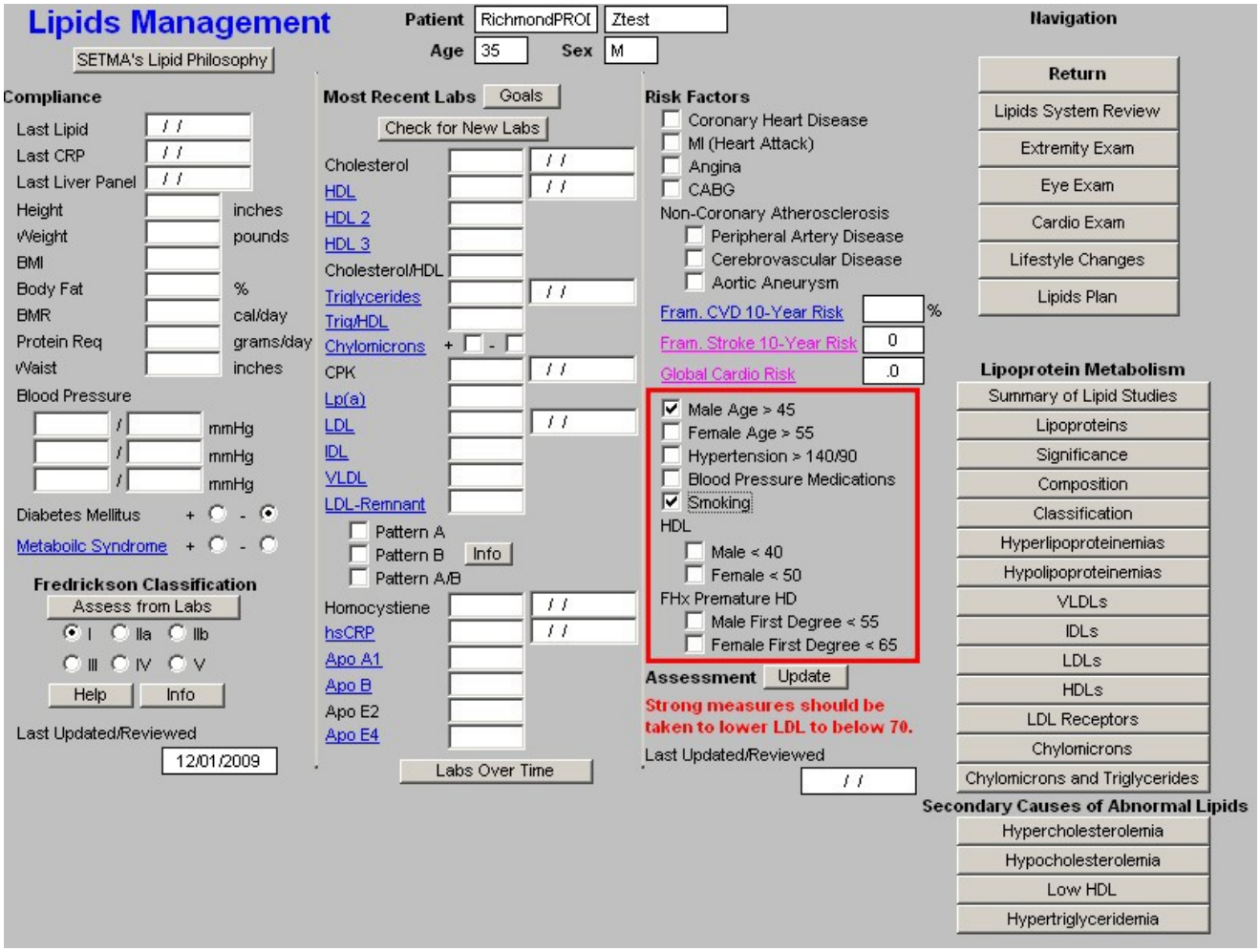
BMR cal/day
Protein Req grams/day
Waist inches
Blood Pressure
mmHg
mmHg
mmHg
Diabetes Mellitus
Metaboilc Syndrome
Fredrickson Classification
Assess from Labs
I IIa IIb
III IV V
Help
Info
Last Updated/Reviewed
12/01/2009
Most Recent Labs
Goals
Check for New Labs
Cholesterol
HDL
HDL 2
HDL 3
Cholesterol/HDL
Triglycerides
Trig/HDL
Chylomicrons
CPK
Lp(a)
LDL
IDL
VLDL
LDL-Remnant
Pattern A
Pattern B
Info
Pattern A/B
Homocystiene
hsCRP
Apo A1
Apo B
Apo E2
Apo E4
Labs Over Time
Risk Factors
Coronary Heart Disease
MI (Heart Attack)
Angina
CABG
Non-Coronary Atherosclerosis
Peripheral Artery Disease
Cerebrovascular Disease
Aortic Aneurysm
Fram. CVD 10-Year Risk %
Fram. Stroke 10-Year Risk 0
Global Cardio Risk .0
Male Age > 45
Female Age > 55
Hypertension > 140/90
Blood Pressure Medications
Smoking
HDL
Male < 40
Female < 50
FHx Premature HD
Male First Degree < 55
Female First Degree < 65
Assessment
Update
Measures should be taken to lower LDL to below 70.
Last Updated/Reviewed
Lipoprotein Metabolism
Summary of Lipid Studies
Lipoproteins
Significance
Composition
Classification
Hyperlipoproteinemias
Hypolipoproteinemias
VLDLs
IDLs
LDLs
HDLs
LDL Receptors
Chylomicrons
Chylomicrons and Triglycerides
Secondary Causes of Abnormal Lipids
Hypercholesterolemia
Hypocholesterolemia
Low HDL
Hypertriglyceridemia



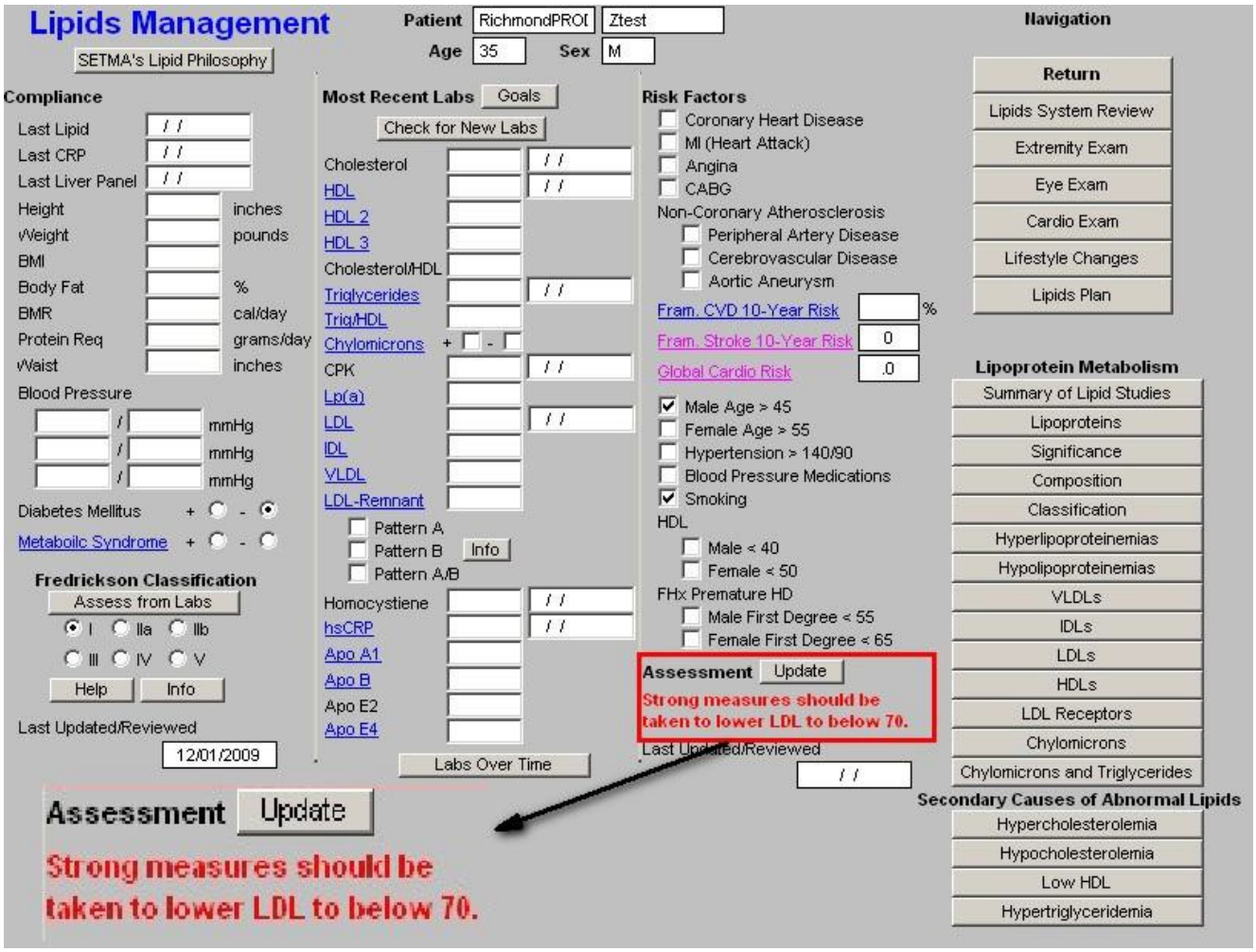
Following the links to these three calculated cumulative risk scores are additional risk factors for cardiovascular disease:

- **Male age over 55**
- **Female age over 65**
- **Hypertension (blood pressure over 140/90)** – while a blood pressure of 140/90 is used as a "cut off" for assessing a patient with dyslipidemia as being hypertensive, this is NOT the treatment goal for high risk patients. A blood pressure of 110/70 ought to be the goal for all patients with cardiovascular disease and with cardiovascular disease equivalents such as diabetes.
- **Blood Pressure Medication** – not only is the blood pressure over 140/90 a risk factor, but also treatment with blood pressure medication represents an additional risk factor which increases the necessity for aggressively treating lipids.
- **Smoking** -- for smoking cessation initiatives see tutorial on Smoking Cessation in the LESS Initiative tutorial.
- **HDL**
    0. Male <40
    0. Female <50

- **FHx Premature Heart Disease** – family history of premature heart disease
    0. Male <55
    0. Female <65



- **Assessment** – when the button next to **Assessment**, which is entitled "**Update**" is depressed, a conclusion will appear as to how aggressively the patient's lipids should be treated.



Column 4 –

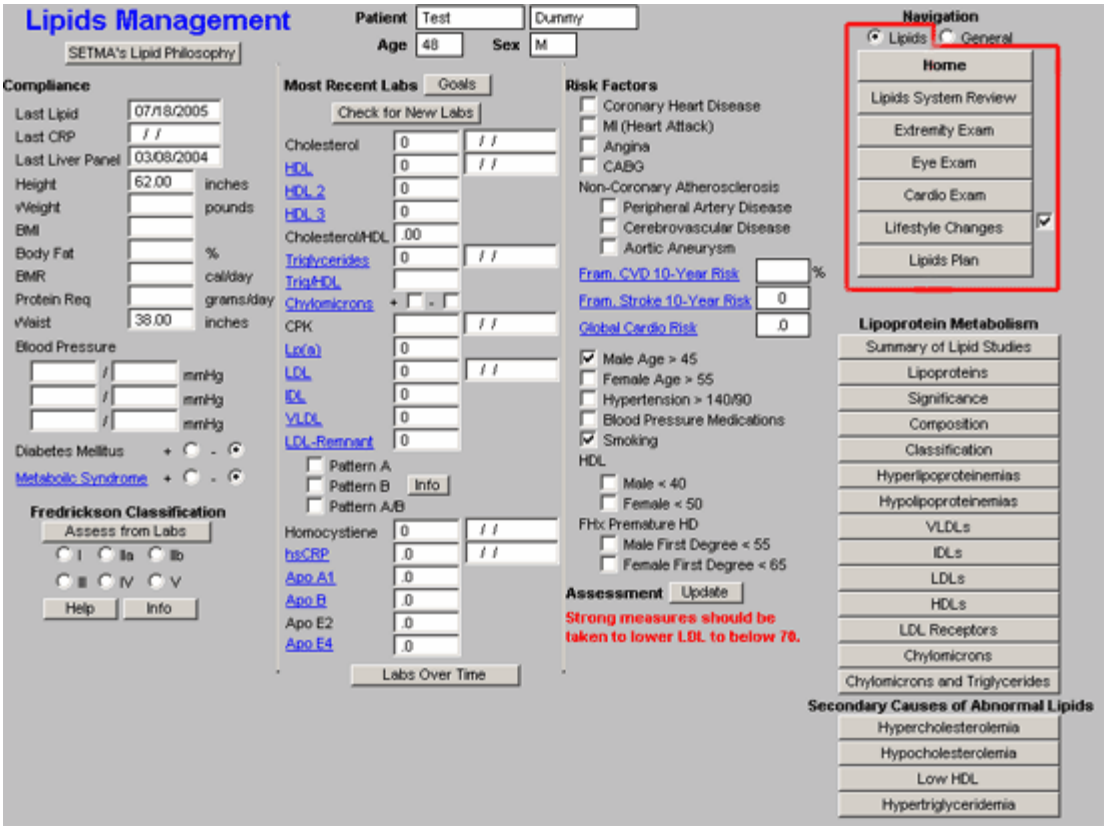
This column has two sections organized from top to bottom.

Top Section of Column 4

– Navigation Buttons

There are two check boxes at the top of this list of Navigation Buttons. When the left check box entitled **Lipids** is activated, there will be a list of navigation buttons which take you through the lipid templates. They are:

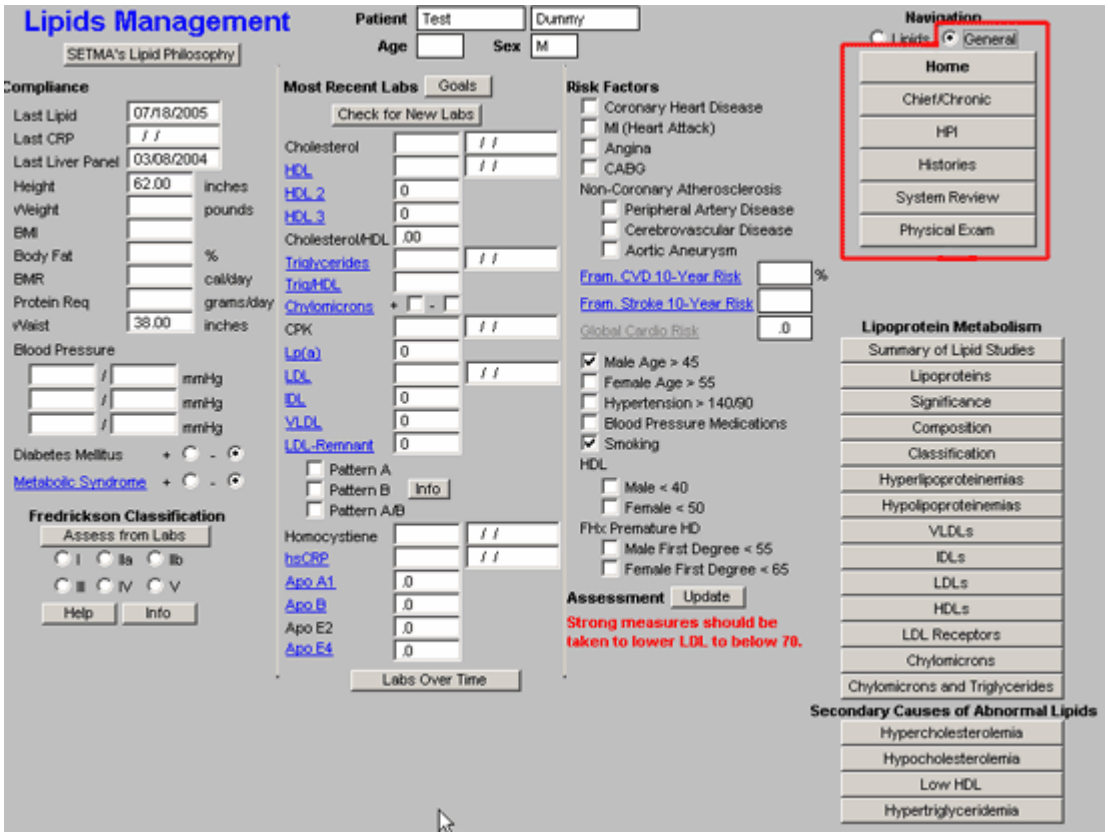
- **Home** – this takes you back to AAA Home
- **Lipids Review of Systems** – this is a focused review of systems which is relevant to the treatment of Lipids. All of the fields in this Review of Systems interact with the Master GP Review of Systems.
- **Extremity Exam** – for details of this template see the tutorial for Master GP Extremity Exam
- Eye Examination
- Cardio Exam
- Lifestyle changes
- Lipid Plan



For details on the **Lipid Lifestyle Changes** and **Lipid Plan** see below.

When the box next to **General** is activated, there will be a list of navigation buttons which take you though **the Master GP** Templates which are associated with Lipid Management. They are:

- Home
- Chief/chronic
- Histories
- Review of System
- Physical Exam



For how to use these templates see **Master GP Suite of Templates tutorial** under the name of each of these templates.

By switching back and forth from the **Lipids** and **General** set of templates, it is possible to complete an entire visit which is focused only on Lipids – a rare circumstance – from the Lipid Suite of templates.

Column 4 Section 2 –

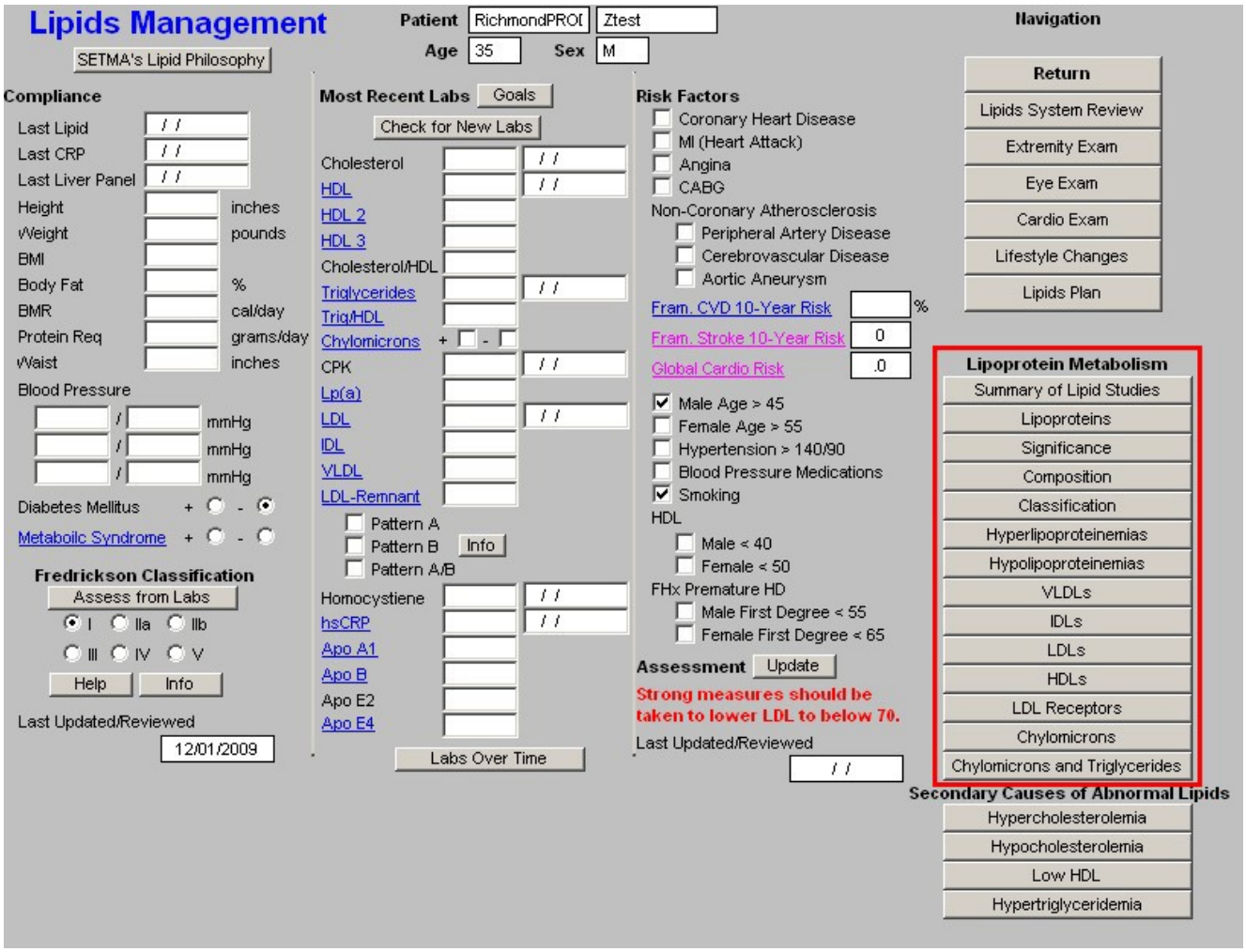
The second section of column 4 of the Master Lipids Template is comprised of **Educational materials on Lipids**. The following will be found there:

Lipoprotein Metabolism

- **Summary of Lipid Studies** -- "Lessons Learned from Recent Lipid-Lowering Trials: Why Physicians Should Change Clinical Practices." This is a summary of the six major lipid studies and what we have learned from them.
- Lipoproteins
- **Significance** – This launches and prints a document entitled, "Clinical Significances of Lipoprotein Metabolism."
- Composition
- Classification
- Hyperlipoproteinemias
- Hypolipoproteinemias
- **VLDLs** – This launches and prints a brief discussion of the origins and significance of **Very**

Low Density Lipoproteins.

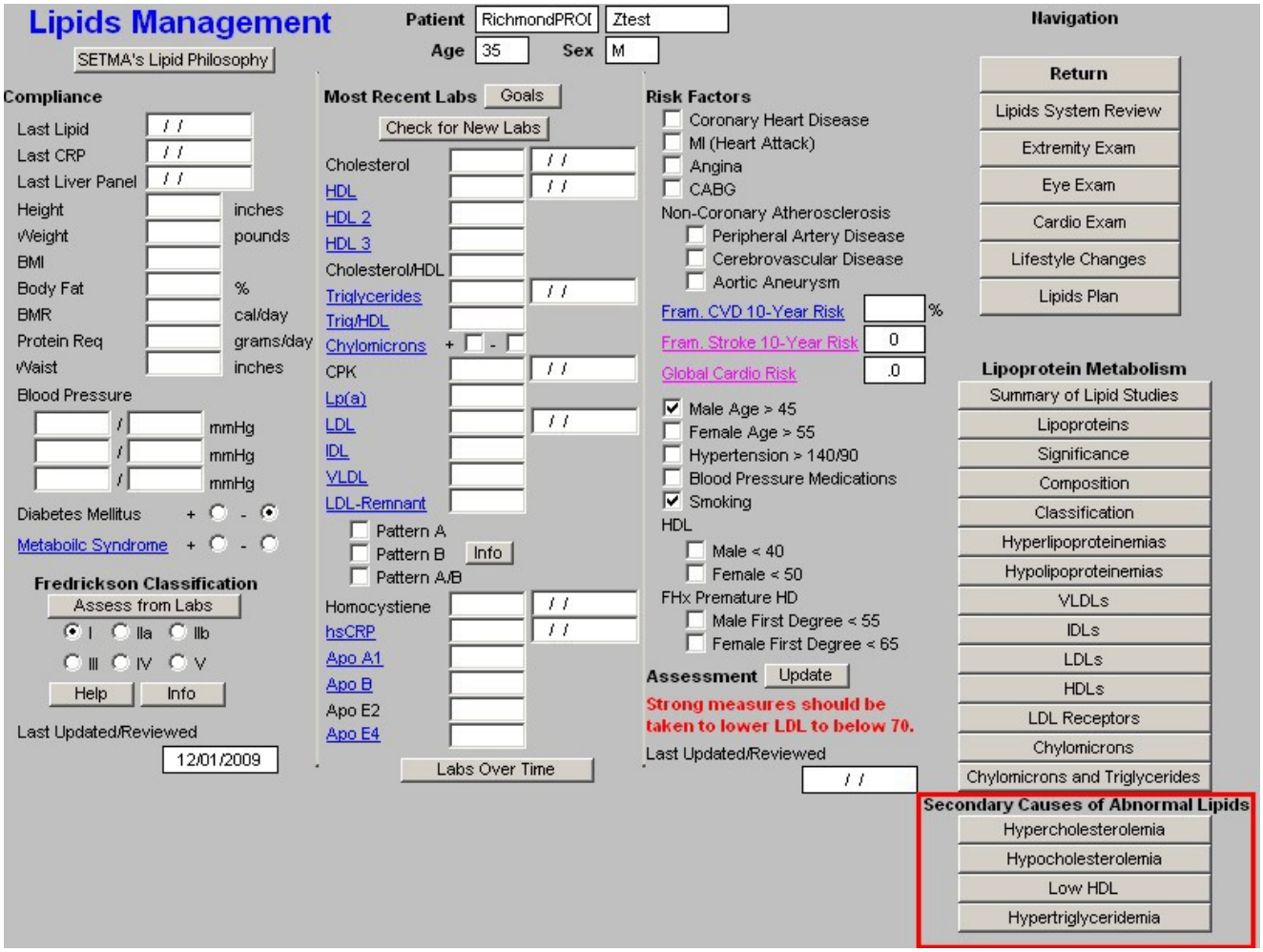
- **IDLs** -- This launches and prints a brief discussion of the origins and significance of **Intermediate Density Lipoproteins**.
- **LDLs** – This launches and prints a brief discussion of the origins and significance of **Low Density Lipoproteins**.
- **HDLs** – This launches and prints a brief discussion of the origins and significance of **High Density Lipoproteins**.
- LDL Receptors
- **Chylomicrons** -- This launches and prints an article entitled, "Exogenous Lipid Transport Pathway: Chylomicrons," which answers questions about the origin and significance of chylomicrons.
- **Chylomicrons and Triglycerides** – this document discusses the difference between chylomicrons and triglycerides.



Secondary Cause of Abnormal Lipids – these documents list the conditions which contribute to abnormalities of these four lipid abnormalities.

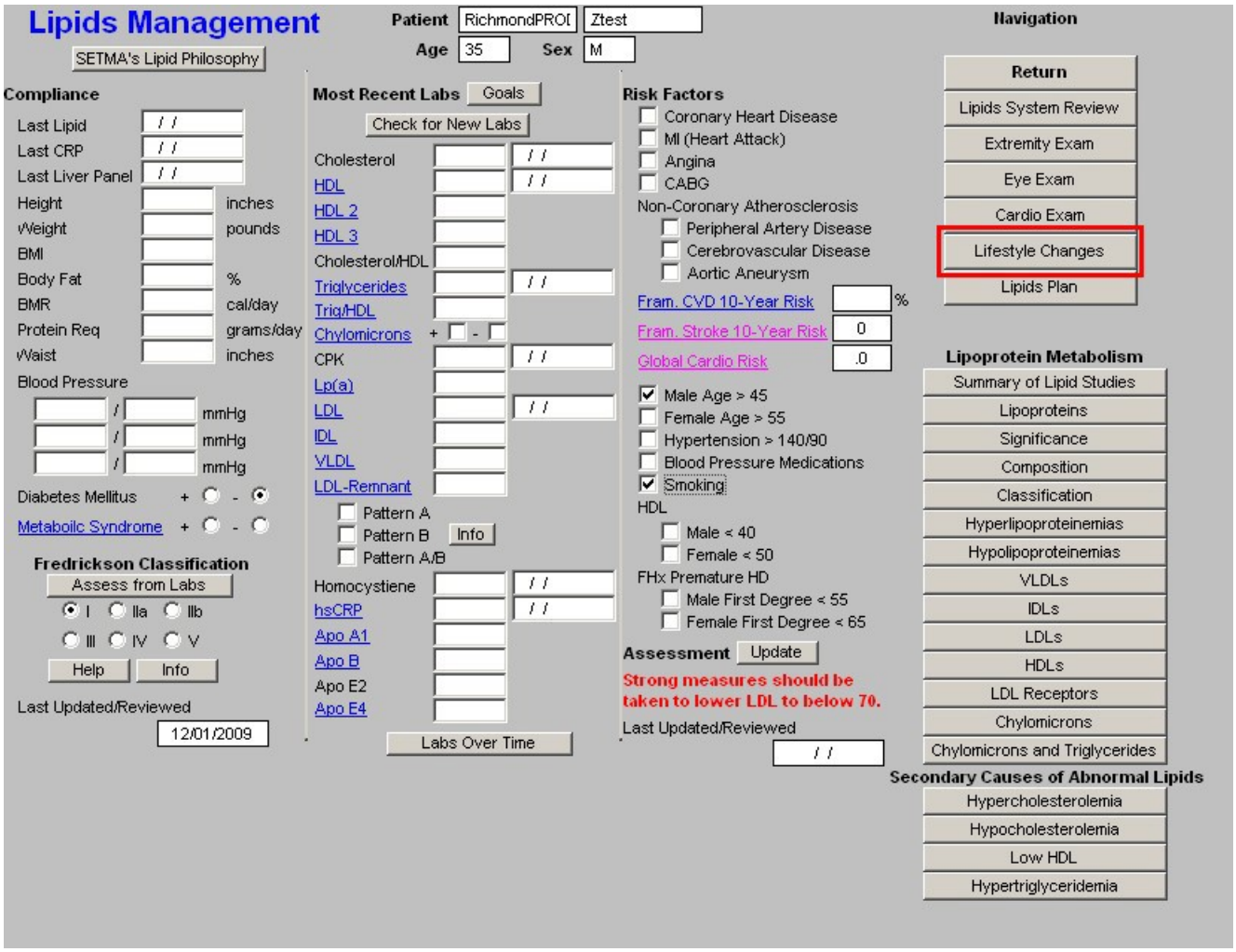
- Hypercholesterolemia
- Hypocholesterolemia
- Low HDL

- Hypertiglyceridemia

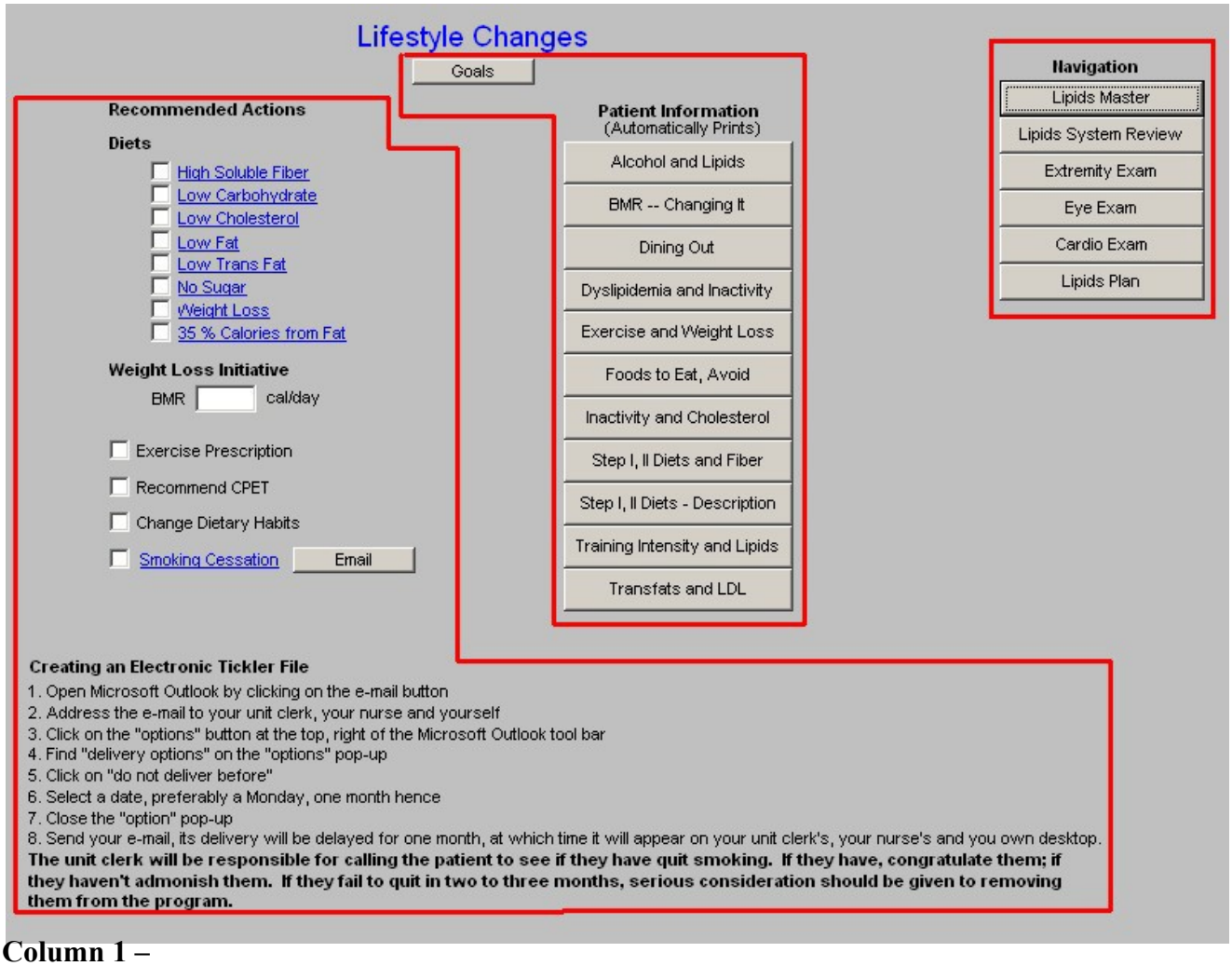


Lipids Lifestyle Changes Template

Without doubt, the first and most critical issue in lipid management is lifestyle modification. This template organizes the approach to those changes which will benefit lipid management.



This template is organized into three columns.



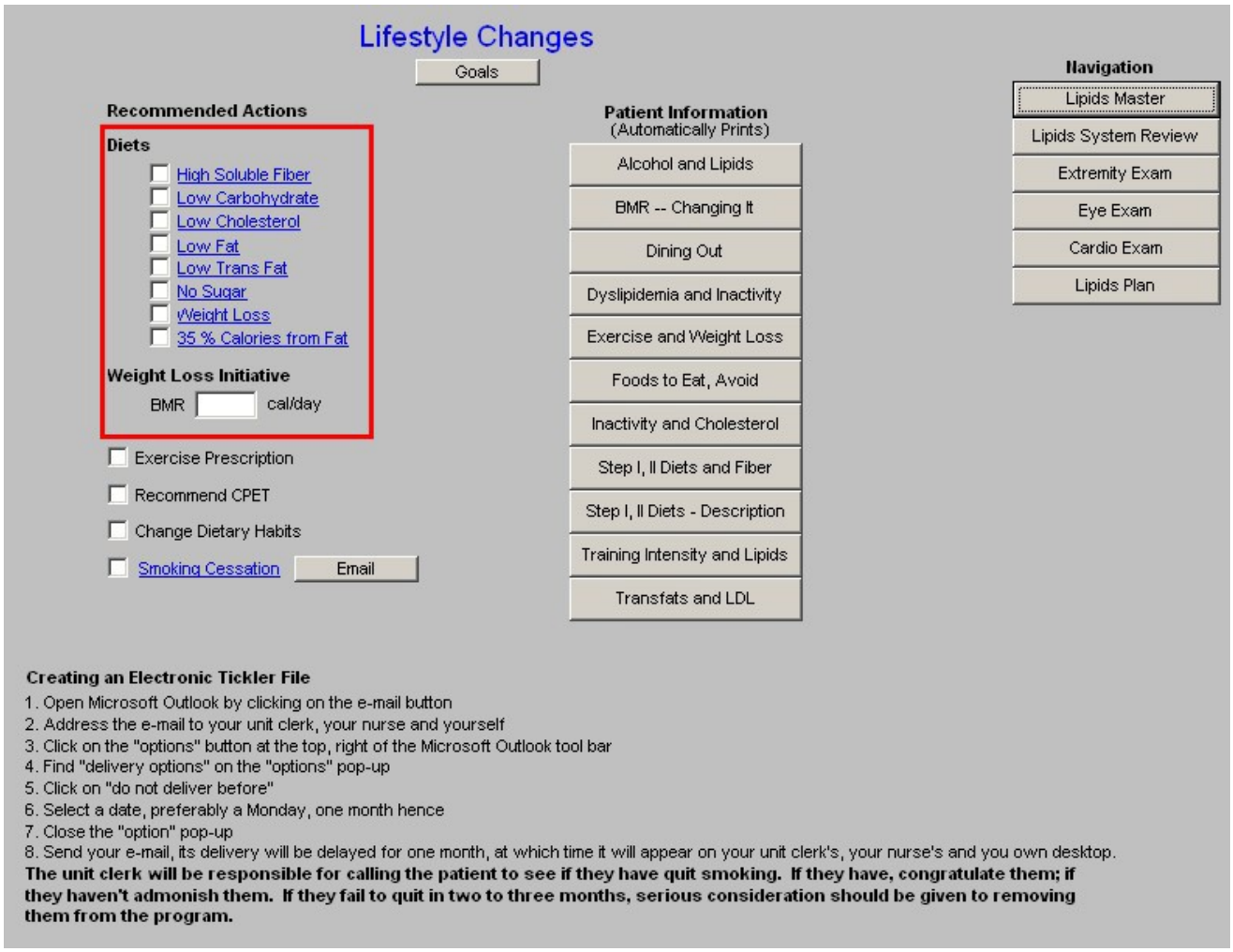
Column 1 –

Recommended

Actions

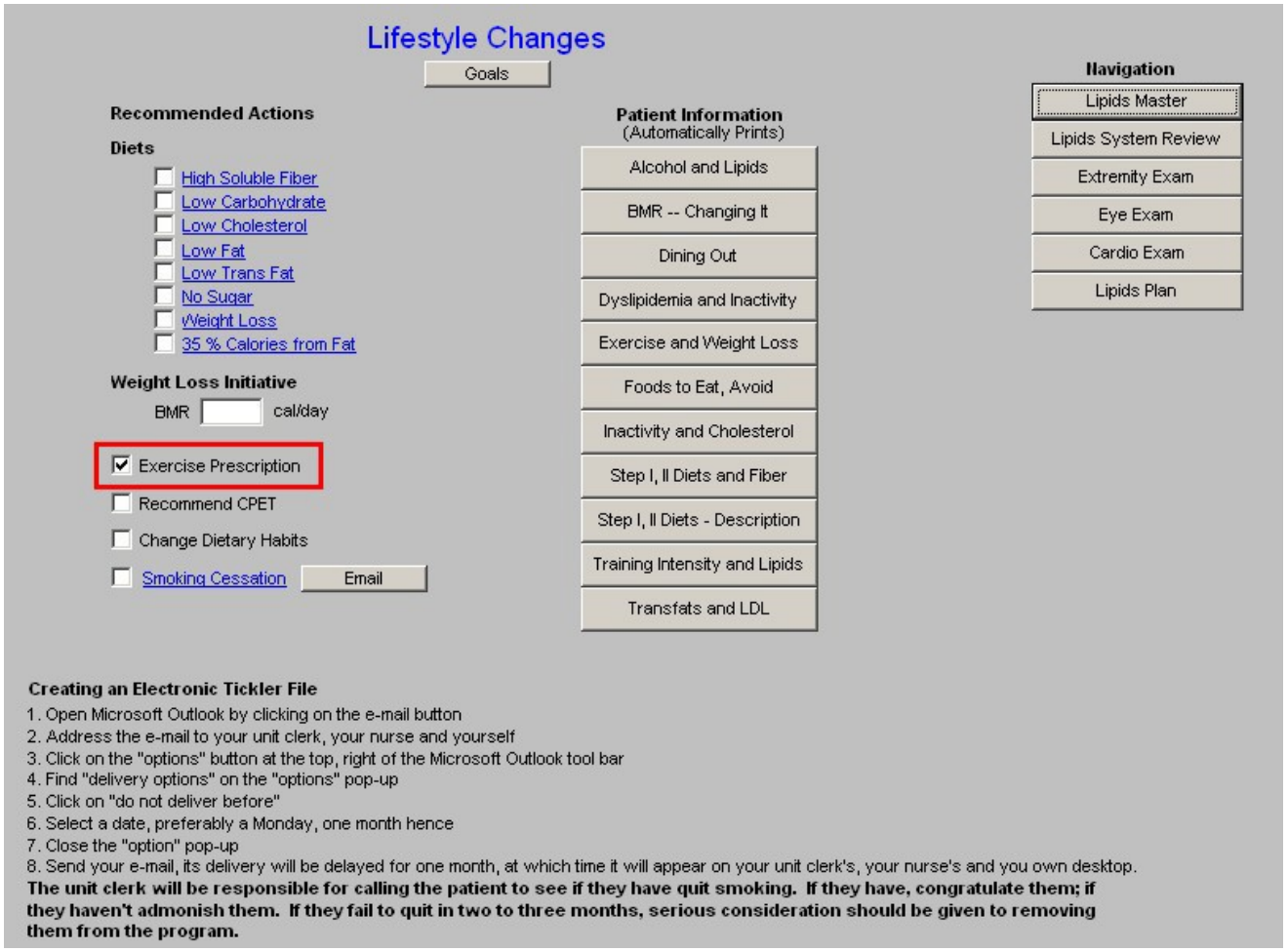
Diets – each of the below provides a patient-information document on the type of diet named.

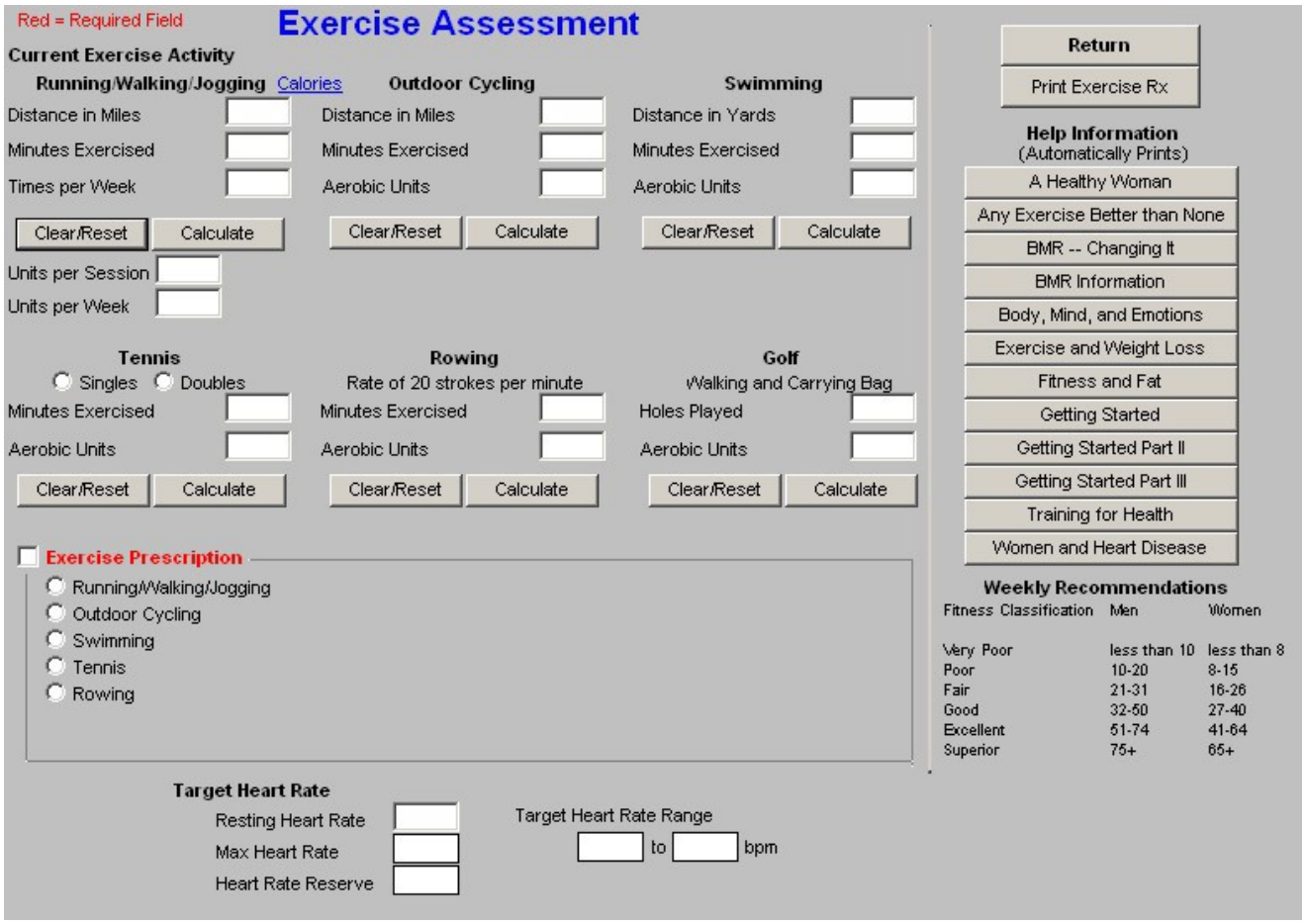
- High Soluble Fiber
- Low Carbohydrate
- Low Cholesterol
- Low Fat
- Low Trans Fat
- No Sugar
- Weight Loss
- 35% Calories from Fat


Lifestyle Changes
Goals
Navigation
Lipids Master
Lipids System Review
Extremity Exam
Eye Exam
Cardio Exam
Lipids Plan
Recommended Actions
Diets
High Soluble Fiber
Low Carbohydrate
Low Cholesterol
Low Fat
Low Trans Fat
No Sugar
Weight Loss
35 % Calories from Fat
Weight Loss Initiative
BMR cal/day
Exercise Prescription
Recommend CPET
Change Dietary Habits
Smoking Cessation
Email
Patient Information
(Automatically Prints)
Alcohol and Lipids
BMR -- Changing It
Dining Out
Dyslipidemia and Inactivity
Exercise and Weight Loss
Foods to Eat, Avoid
Inactivity and Cholesterol
Step I, II Diets and Fiber
Step I, II Diets - Description
Training Intensity and Lipids
Transfats and LDL
Creating an Electronic Tickler File
1. Open Microsoft Outlook by clicking on the e-mail button
2. Address the e-mail to your unit clerk, your nurse and yourself
3. Click on the "options" button at the top, right of the Microsoft Outlook tool bar
4. Find "delivery options" on the "options" pop-up
5. Click on "do not deliver before"
6. Select a date, preferably a Monday, one month hence
7. Close the "option" pop-up
8. Send your e-mail, its delivery will be delayed for one month, at which time it will appear on your unit clerk's, your nurse's and you own desktop.
The unit clerk will be responsible for calling the patient to see if they have quit smoking. If they have, congratulate them; if they haven't admonish them. If they fail to quit in two to three months, serious consideration should be given to removing them from the program.

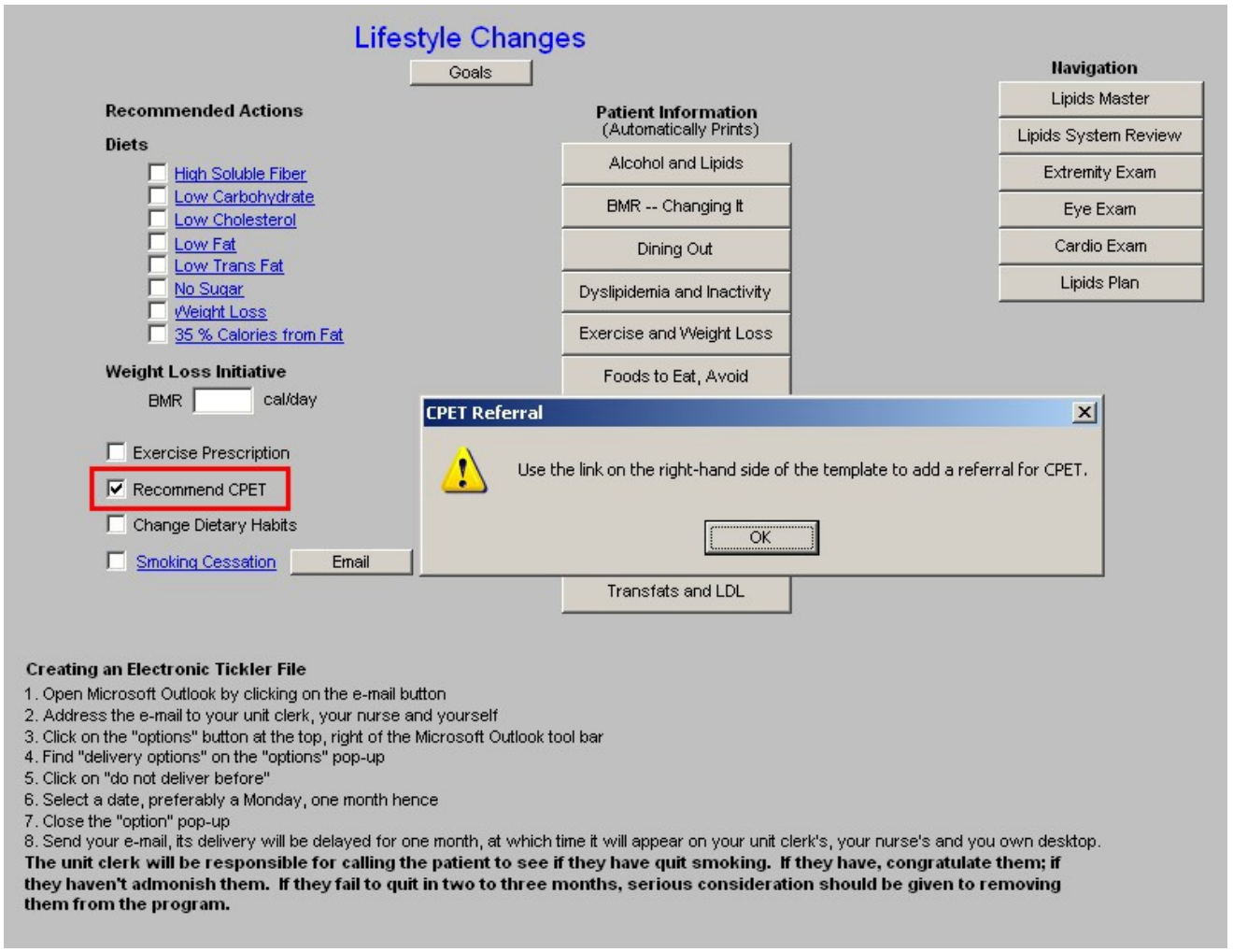
Weight Loss Initiative – any initiative in treating lipid abnormalities must include weight reduction. Below are elements of weight management in any patient.

- **Exercise Prescription** – this is a link to the exercise prescription. A weight management effort without consistent structured exercise and/or life-style changes which result in increased activity WILL NOT be successful.

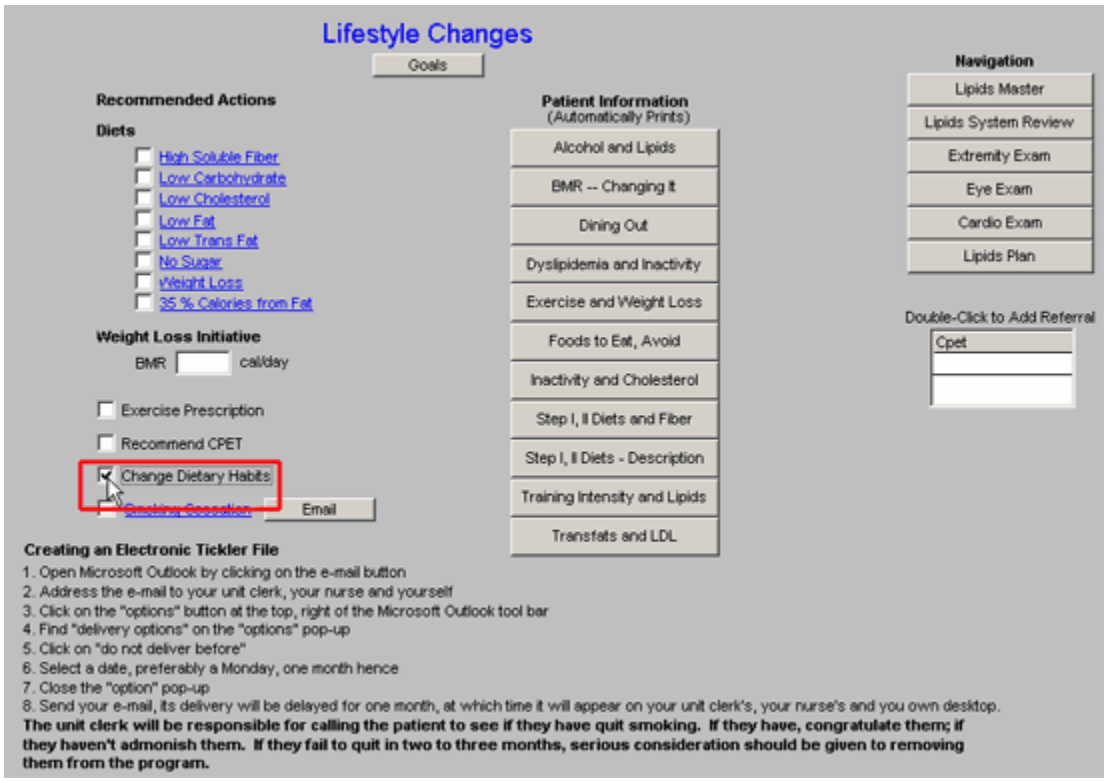




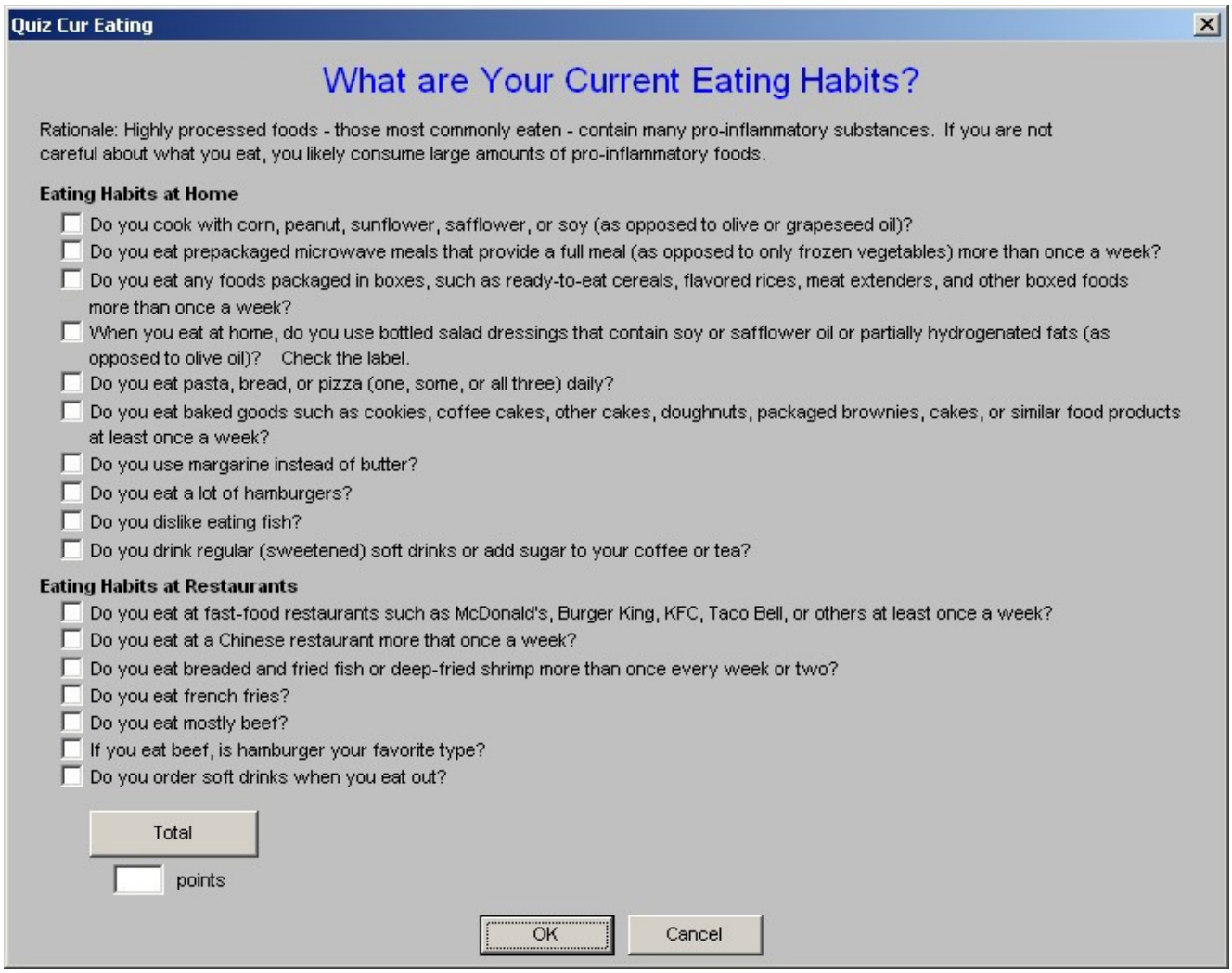
- **Recommended CPET** – Cardiopulomary Exercise Testing is a key element of prescribing a proper exercise program for any patient. CPET distinguishes between shortness of breath which is due to coronary artery disease, pulmonary disease and/or deconditioning. It should be a starting point for improving the overall health of any patient who is over 40.



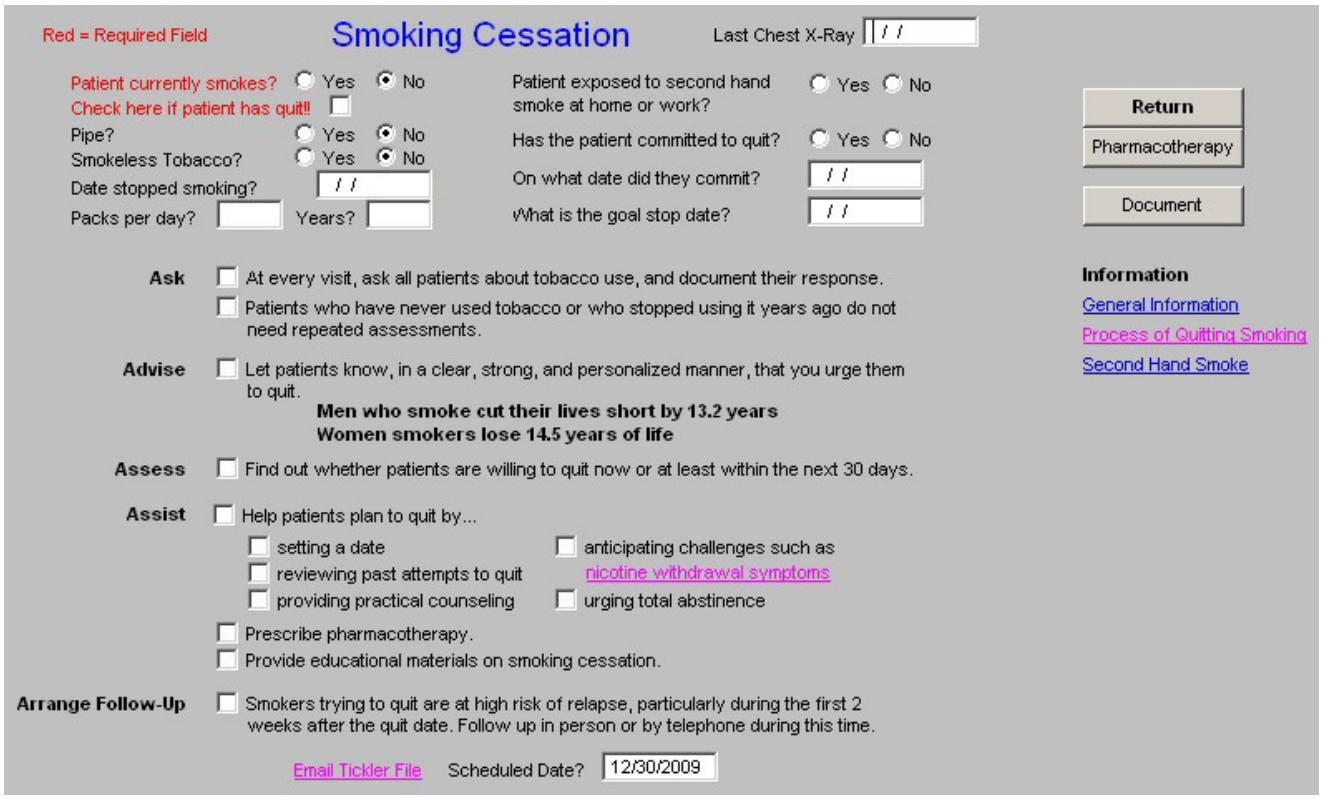
- **Change Dietary Habits** – this is a check box to document that you have discussed dietary changes with the patient. If the hyperlink is clicked, a template entitled "**What are Your Current Eating Habits?**" will be launched.



NOTE: When this template is completed it will provide a risk score for the potential of inflammation in the body.



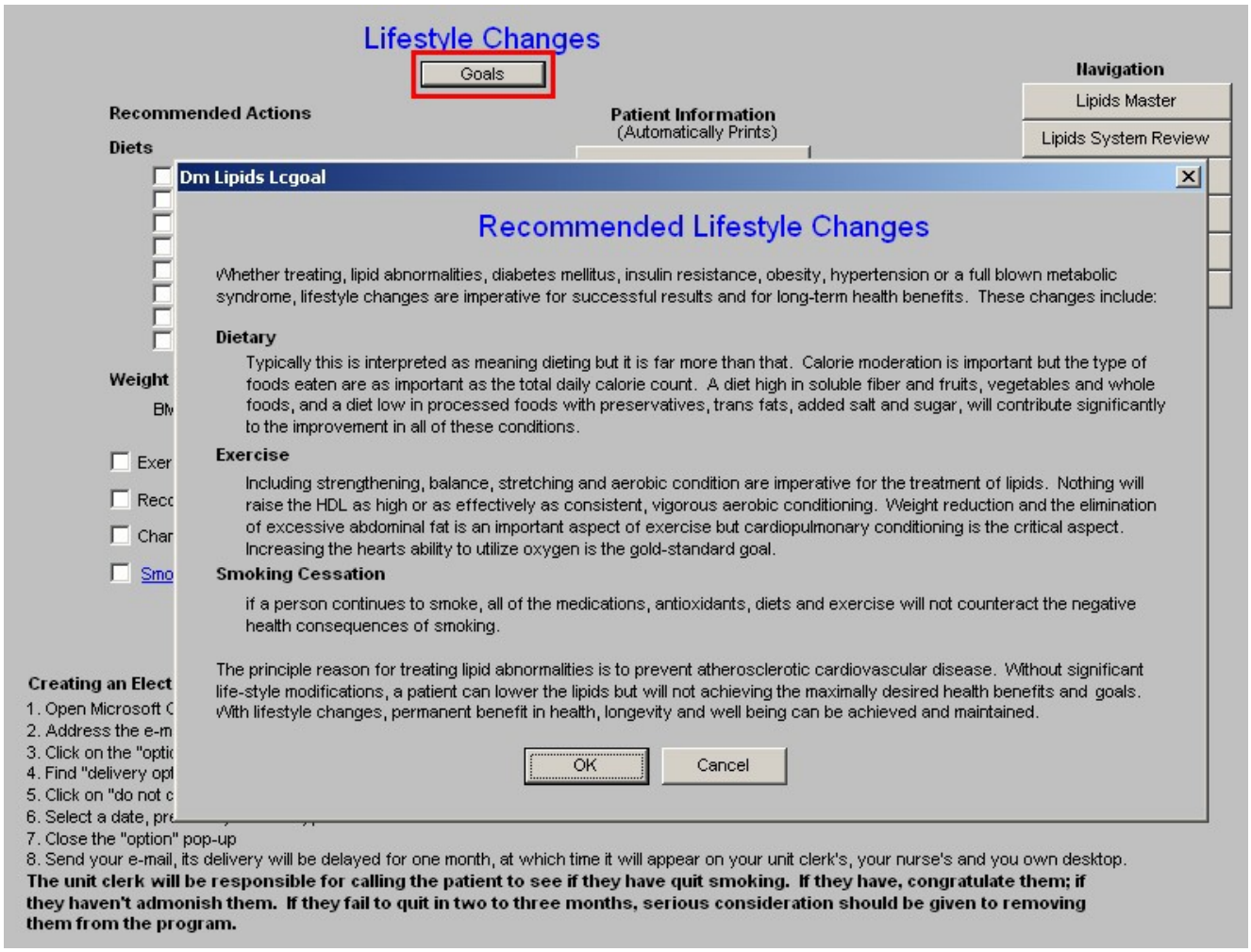
- **Smoking Cessation** – lipid management without smoking cessation will not significantly improve a patient's cardiovascular risk profile.



0. **E-Mail** – this button launches a preprogrammed e-mail which provides follow-up instructions for a patient who is attempting to stop smoking.
0. **Creating an Electronic Tickler File** – this gives instructions of how to create an electronic tickler file.

Column 2 –

Goals – this button launches a pop-up with the following information:



Whether treating, lipid abnormalities, diabetes mellitus, insulin resistance, obesity, hypertension or a full blown metabolic syndrome, lifestyle changes are imperative for successful results and for long- term health benefits. These changes include:

Dietary

Typically this is interpreted as meaning dieting but it is far more than that. Calorie moderation is important but the type of foods eaten are as important as the total daily calorie count. A diet high in soluble fiber and fruits, vegetables and whole foods, and a diet low in processed foods with preservatives, trans fats, added salt and sugar, will contribute significantly to the improvement in all of these conditions.

Exercise

Including strengthening, balance, stretching and aerobic condition are imperative for the treatment of lipids. Nothing will raise the HDL as high or as effectively as consistent, vigorous aerobic conditioning. Weight reduction and the elimination of excessive abdominal fat is an important aspect of exercise but cardiopulmonary conditioning is the critical aspect. Increasing the hearts ability to

utilize oxygen is the gold-standard goal.

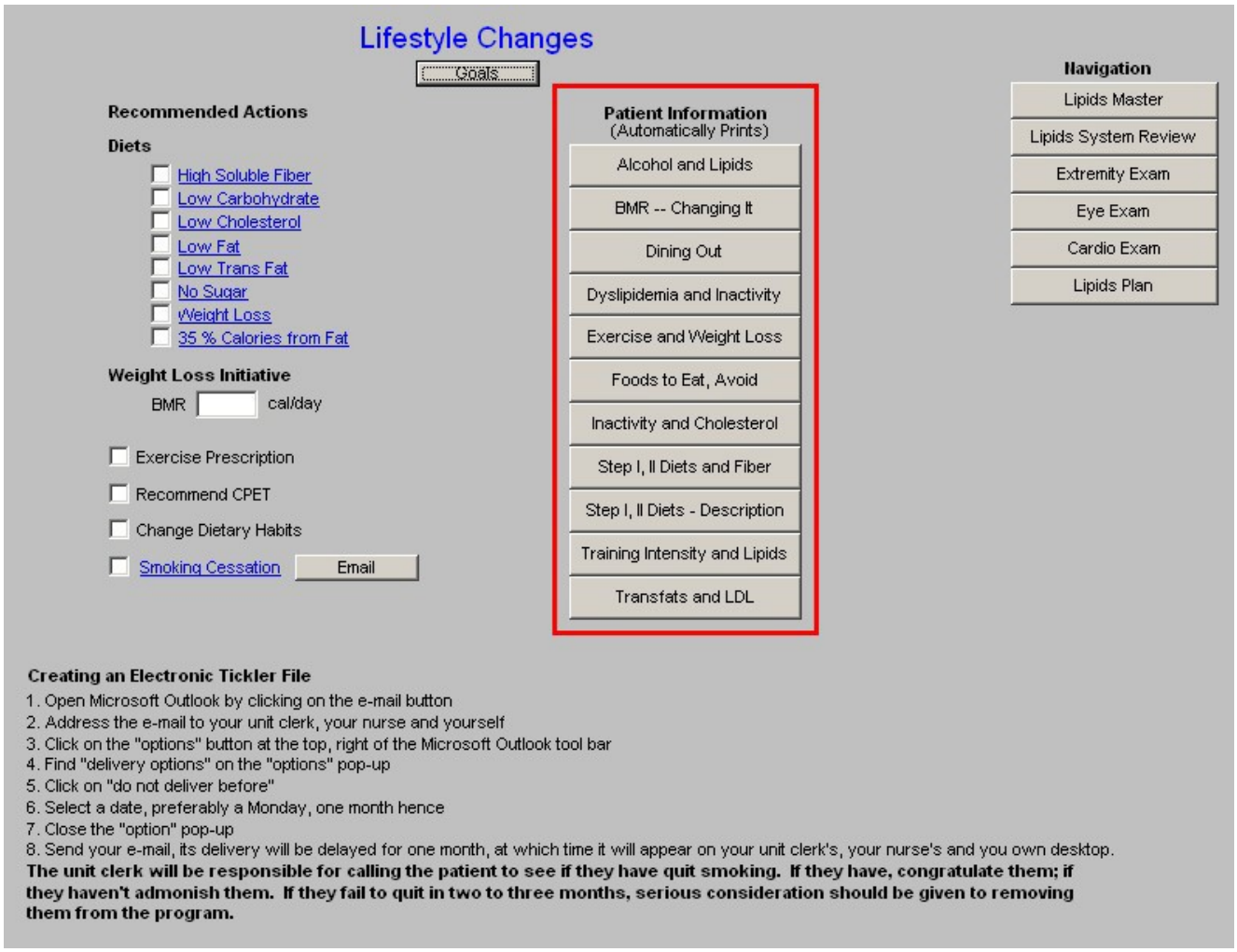
Smoking Cessation

If a person continues to smoke, all of the medications, antioxidants, diets and exercise will not counteract the negative health consequences of smoking.

The principle reason for treating lipid abnormalities is to prevent atherosclerotic cardiovascular disease. Without significant life-style modifications, a patient can lower the lipids but will not achieving the maximally desired health benefits and goals. With lifestyle changes, permanent benefit in health, longevity and well being can be achieved and maintained.

Patient information – these documents provide helpful information to patient's as to steps they can take to improve their lipid profiles.

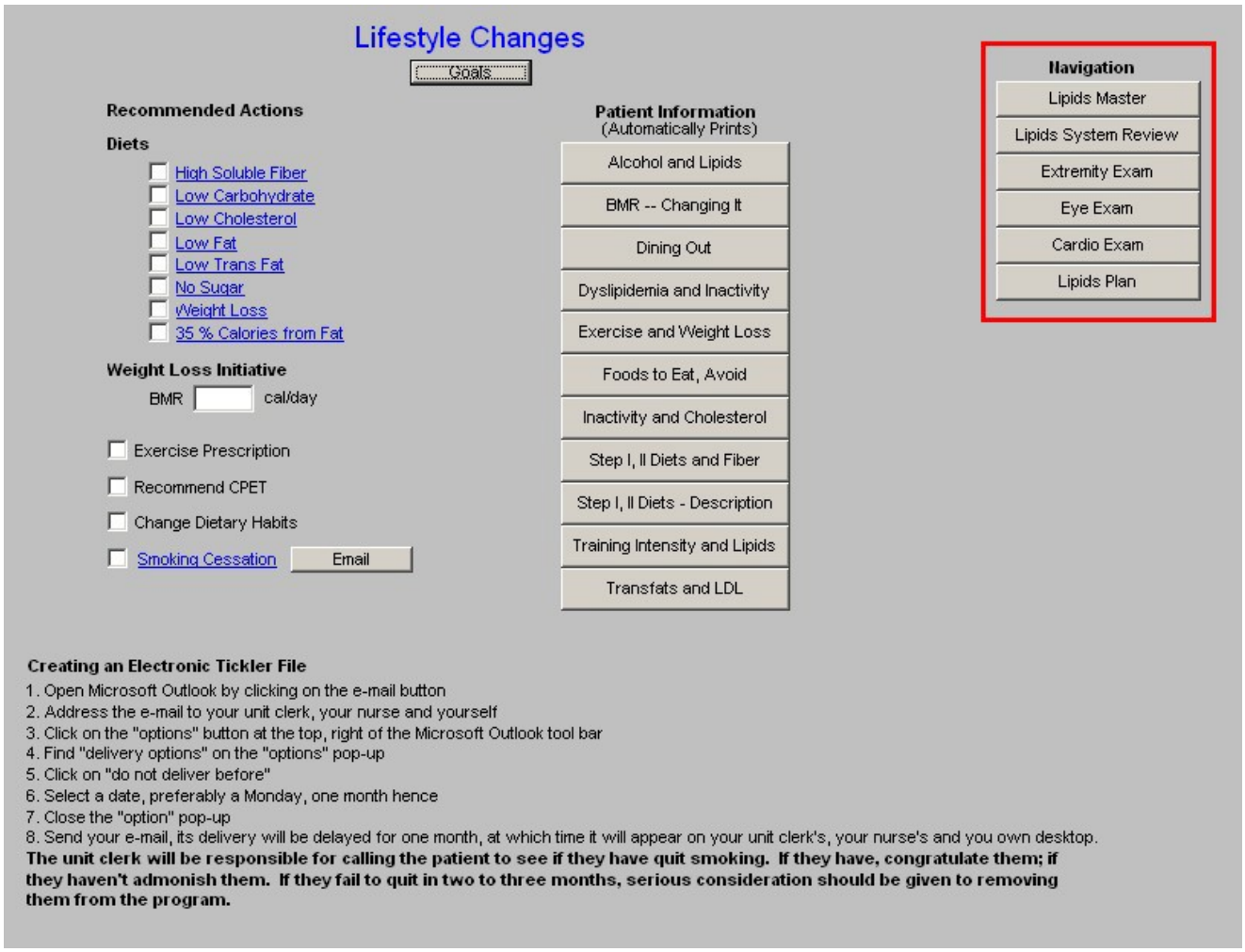
- Alcohol and Lipids
- BMR – Changing It
- Dining Out
- Dyslipidemia and Inactivity
- Exercise and Weight Loss
- Foods to Eat, Avoid
- Inactivity and Cholesterol
- Step 1, II Diets and Fiber
- Step 1, II Diet – Description
- Training Intensity and Lipids
- Transfats and LDL



Column 3 –

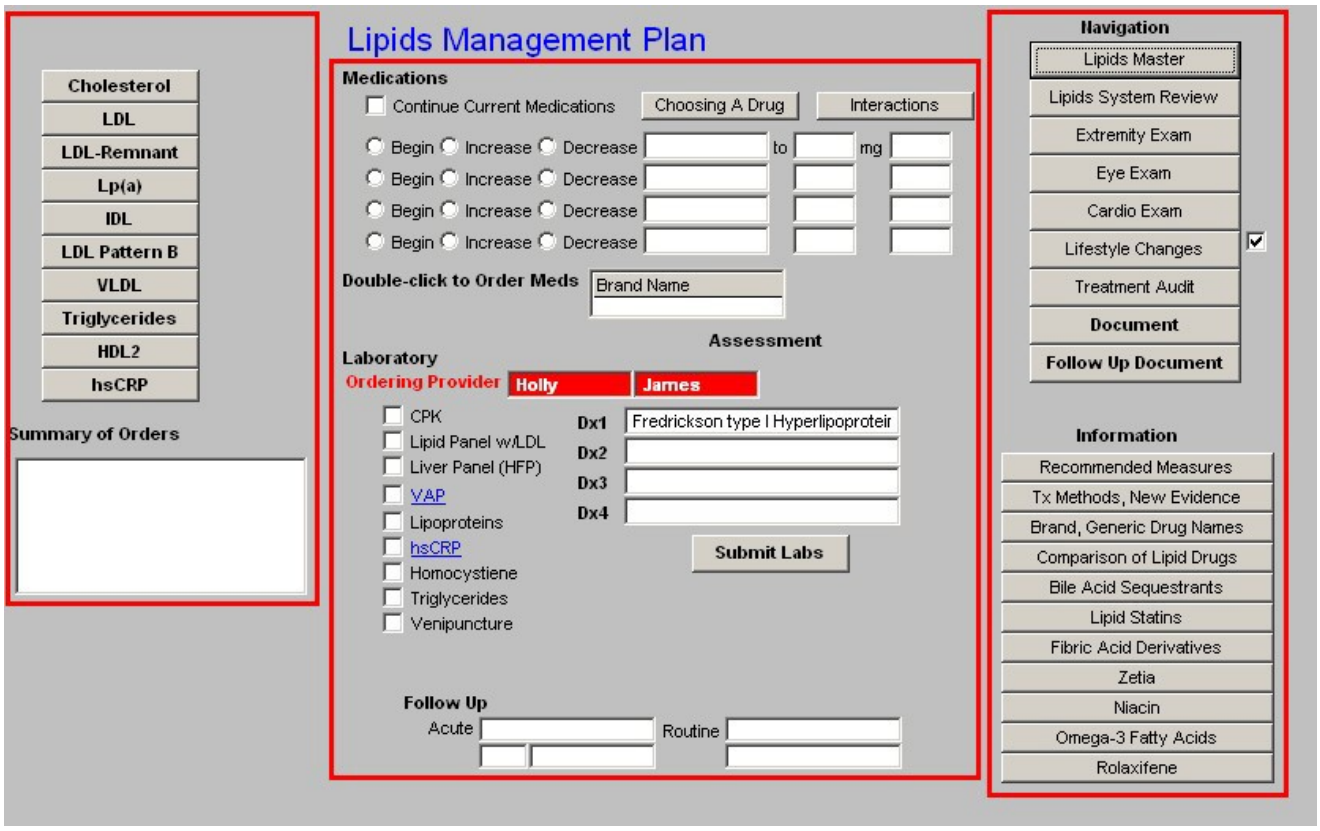
Navigation Buttons – these buttons allow you to move easily within the Lipid Suite of Templates.

- Lipid Master
- Lipids Systems Review
- Extremity Exam
- Eye Exam
- Cardio Exam
- Lipids Plan
- **Referral for CPET** – this function allows you to refer the patient for a CPET from the Lipid Lifestyle Changes template.



Lipid Plan Template

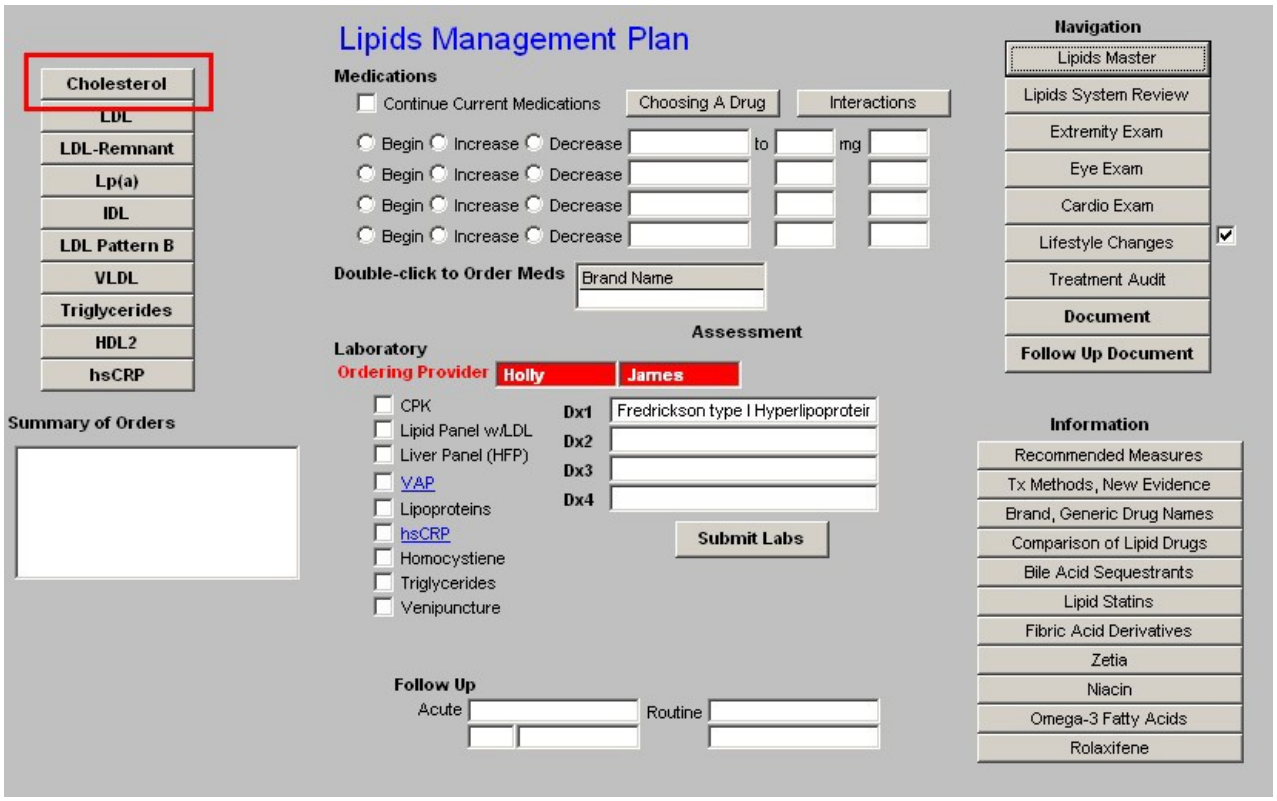
This template is organized into three columns. It provides a guide and a summary to the strategy for comprehensive management of a patient's lipids.



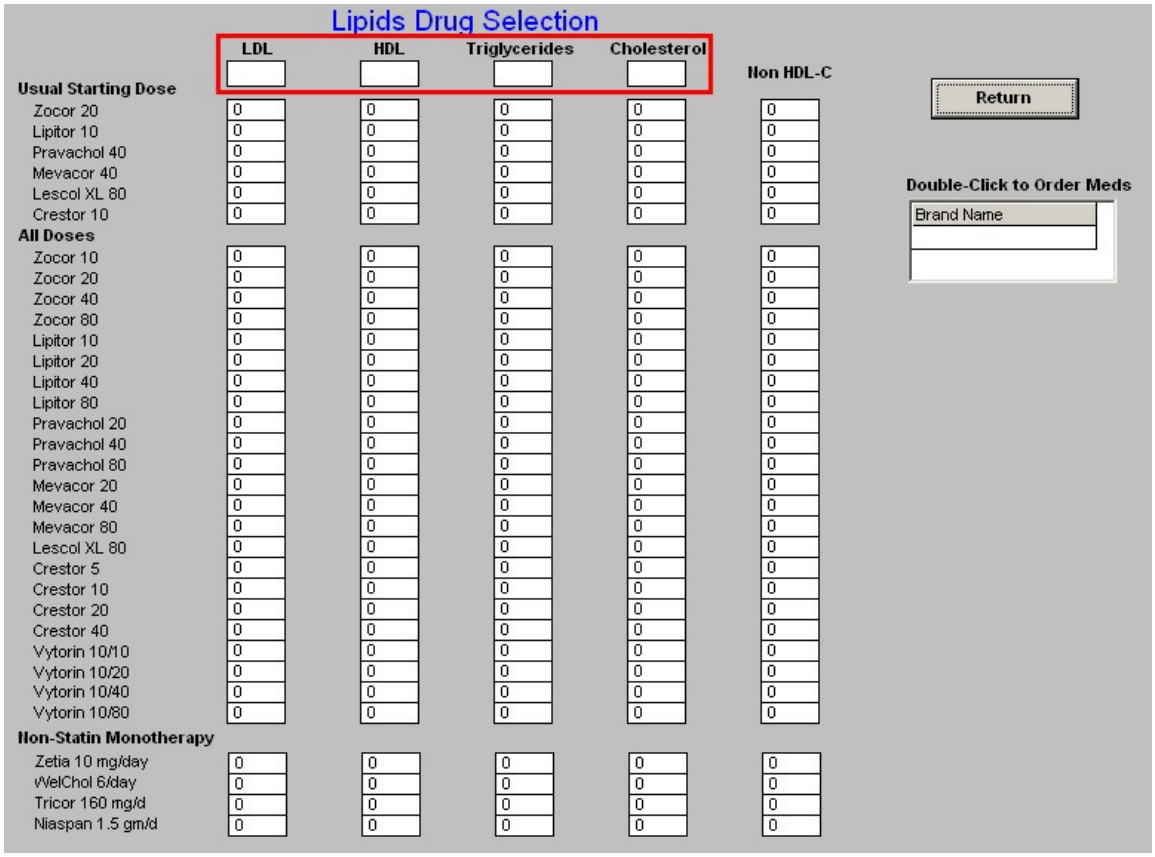
Column 1 –

This column provides treatment recommendations for the following Lipid particles and/or components of the lipid evaluation:

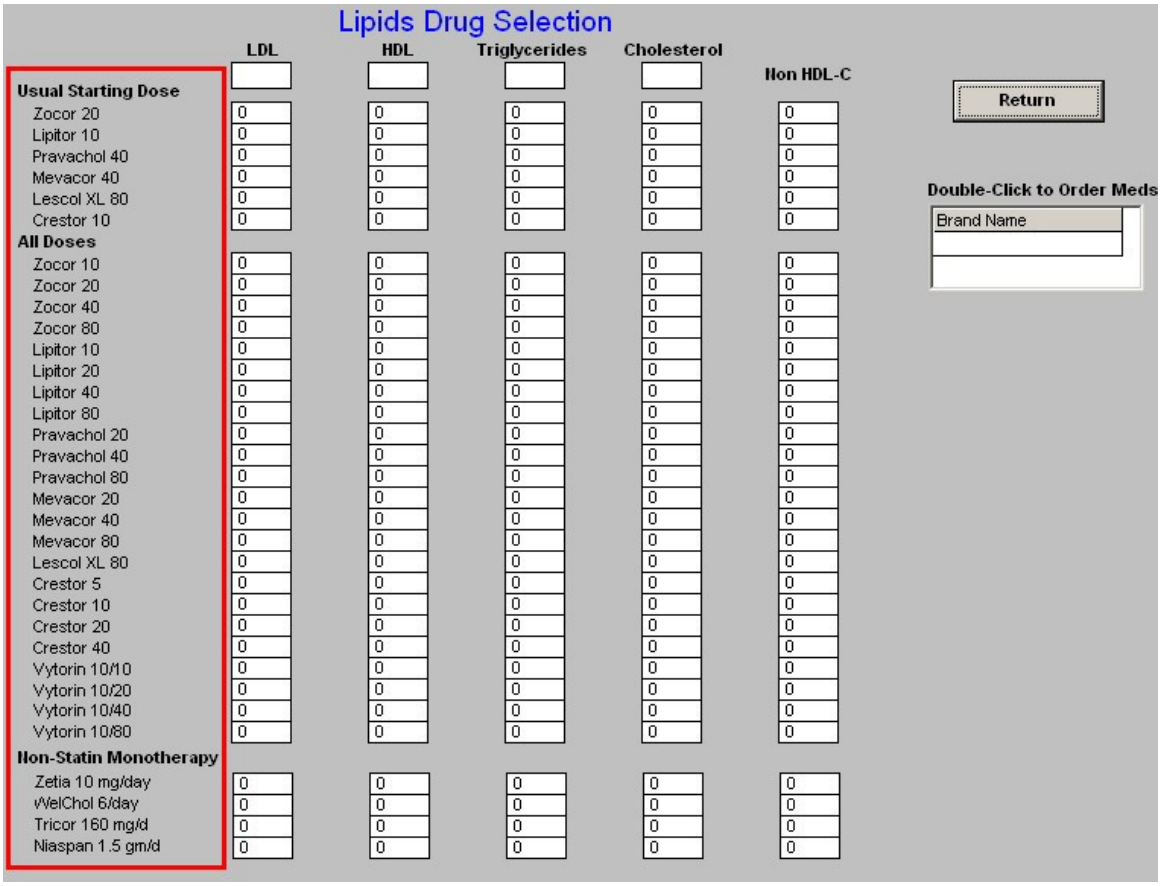
- **Cholesterol** – when either the **Cholesterol** or the **LDL** button is depressed, a pop-up appears with the following information:



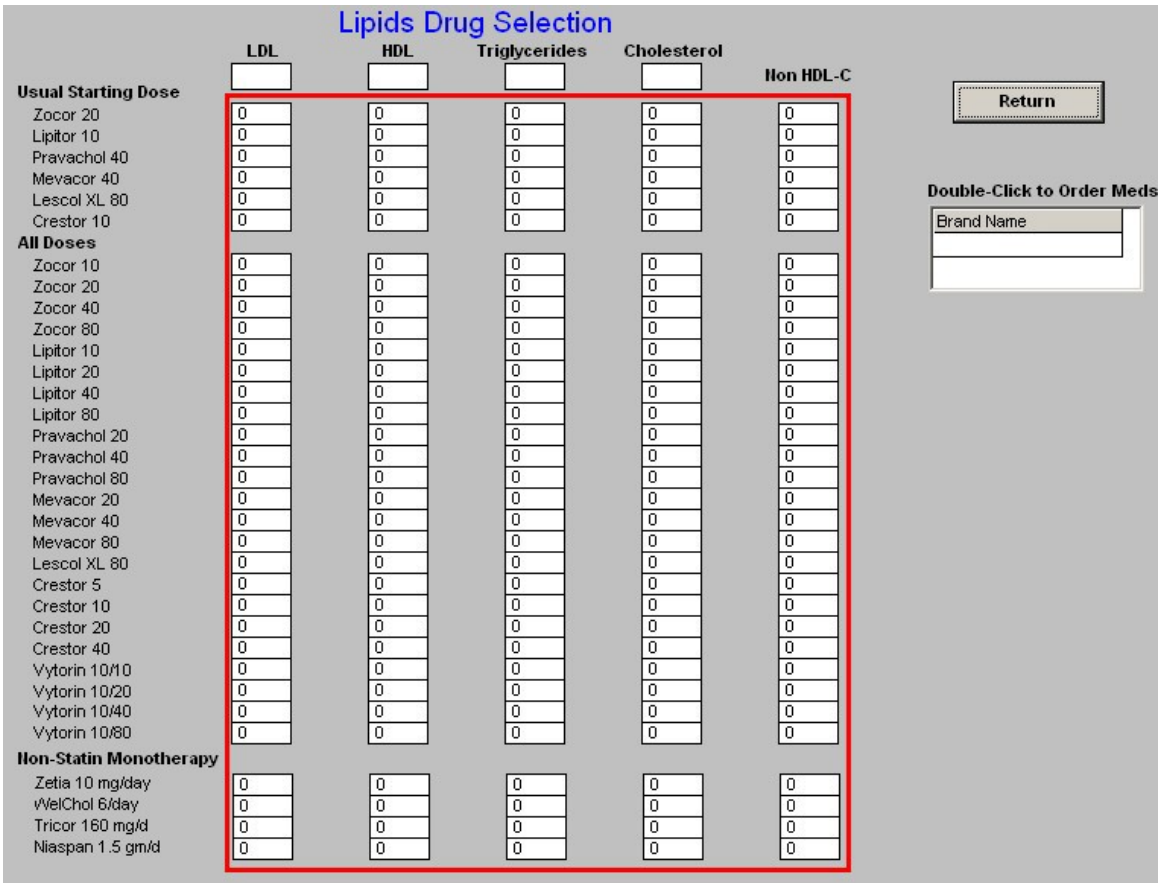
0. Across the top the patient's lab values for LDL, HDL, Triglycerides and non-HDL Cholesterol appear.



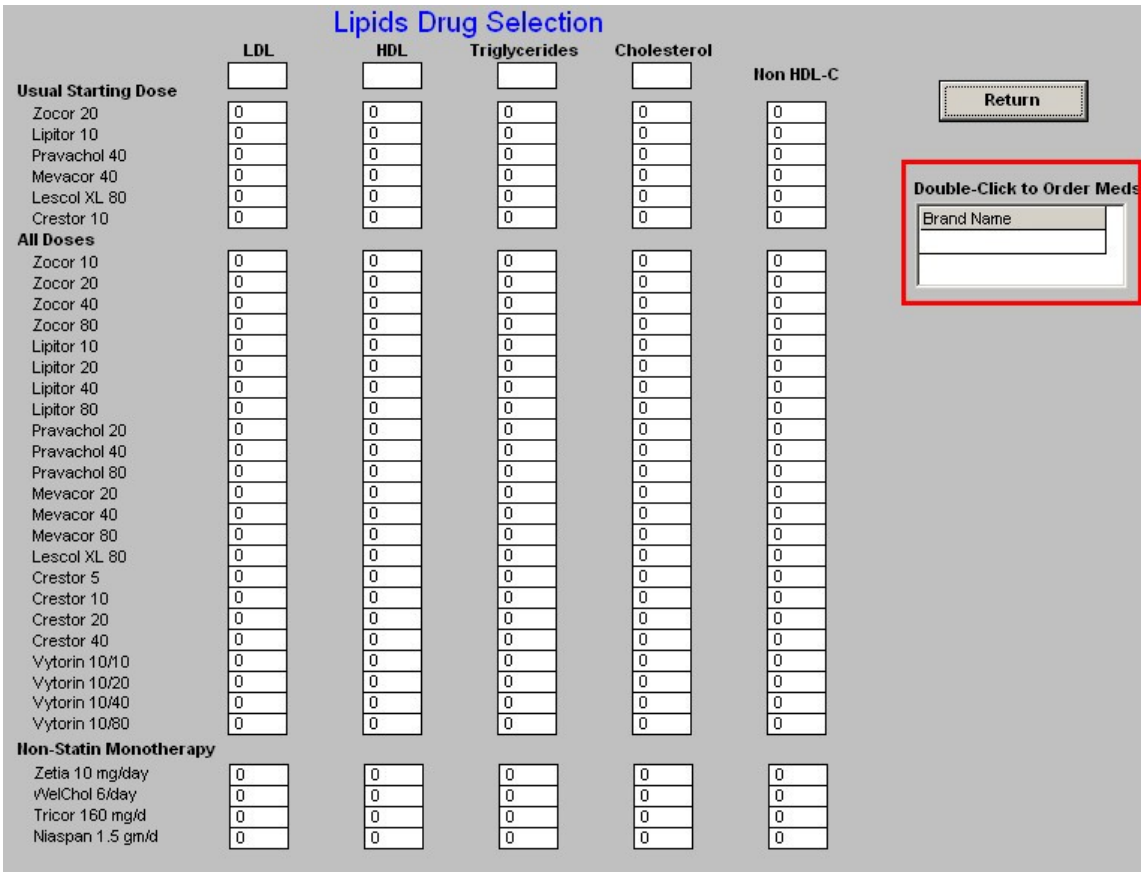
0. Down the left side is **a list of all of the cholesterol-lowering medications** which are presently on the market.



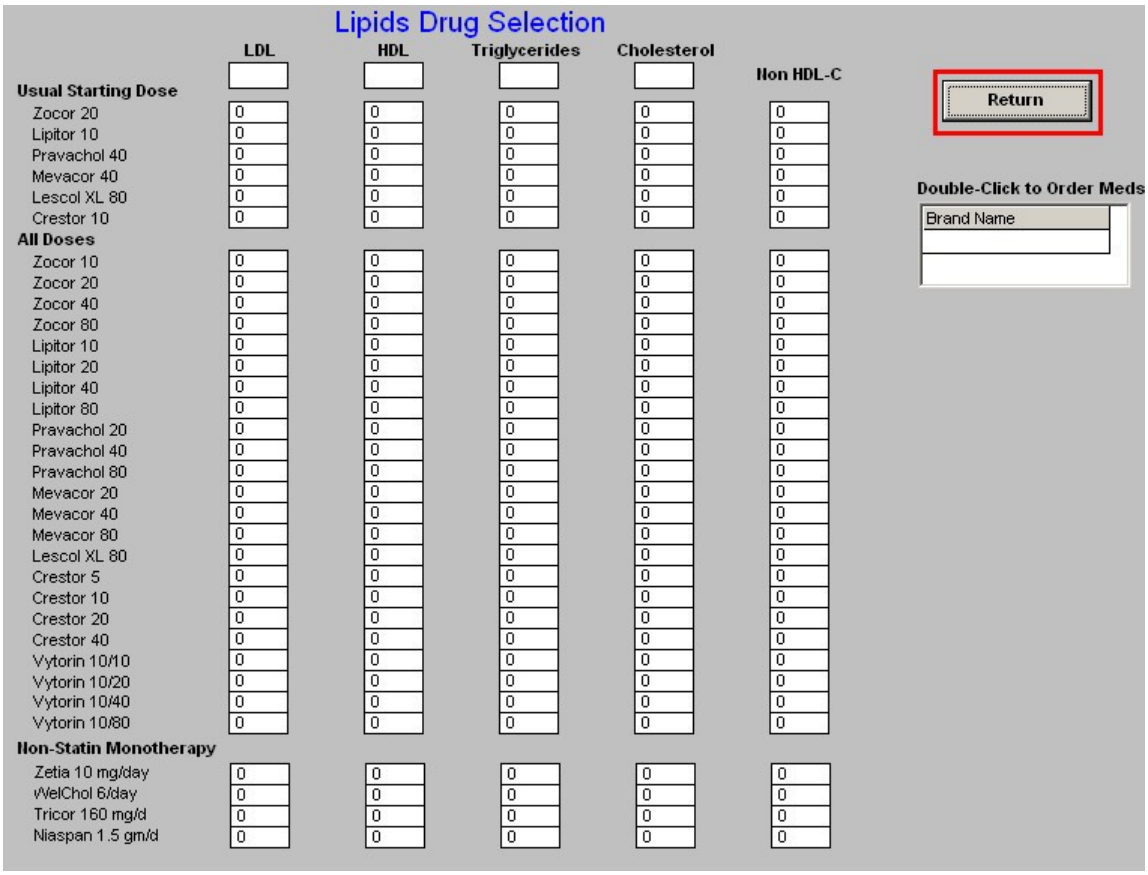
0. In a table format the expected results for each of the elements of the lipid evaluation appear.
0. This allows you to choose a medication which will get you to the patient's lipid goals based on SETMA's treatment goals.



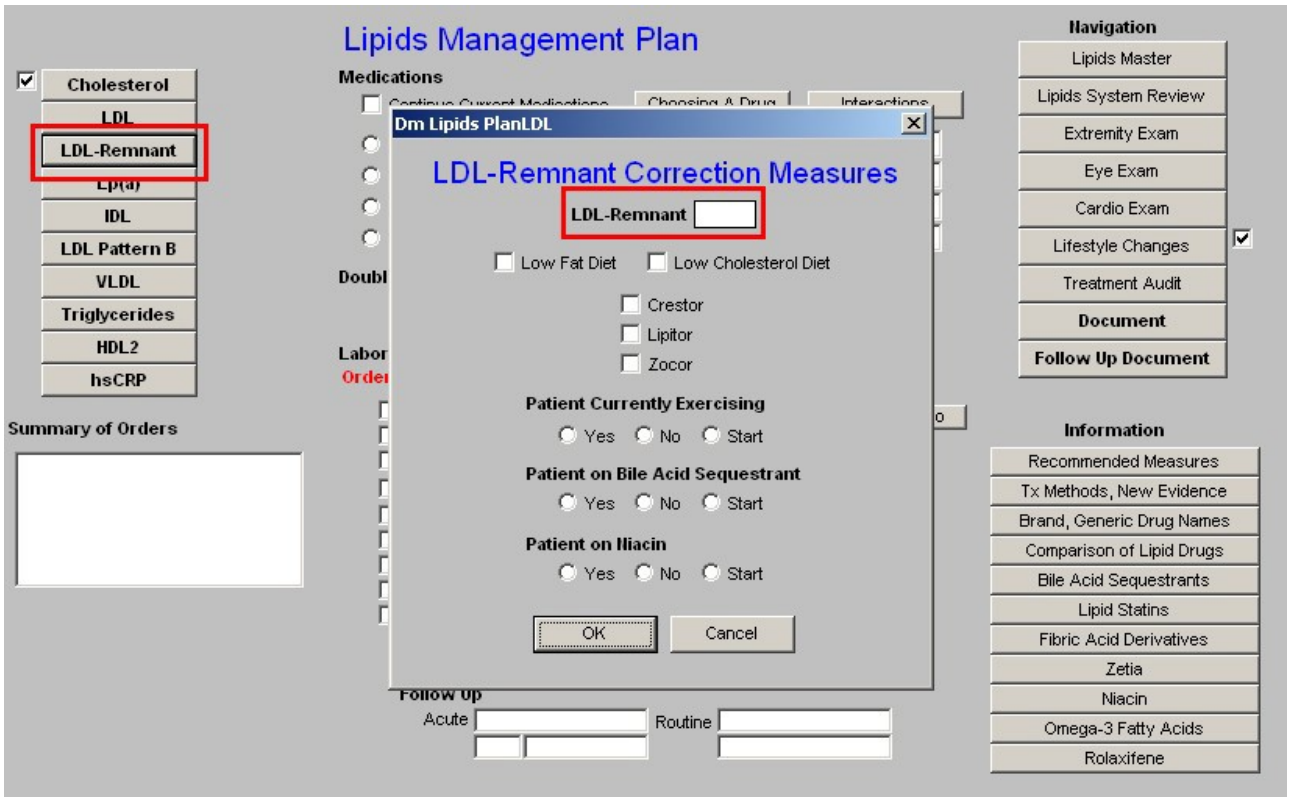
0. There is also **a link which carries you to NextGen's Medication module** in order to order medication from this pop-up.



0. **Return** – this button appears just above the Medication Module link and when depressed carries you back to the Lipid Plan Template.

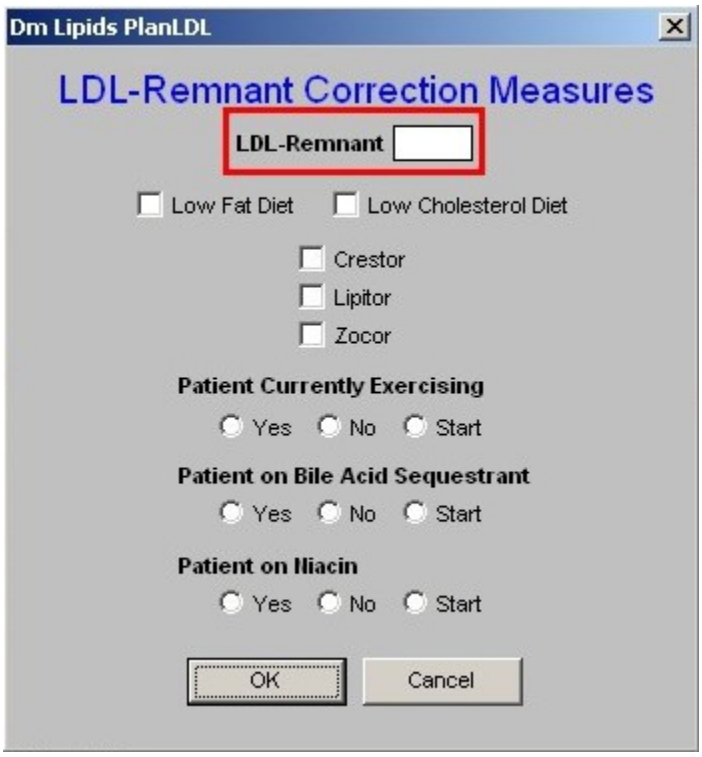


- **LDL** – see **Cholesterol** above, as this button functions in the same way.
- **LDL-Remnant** – this button launches a pop-up with the title **LDL-Remnant Correction Measures**. It contains the following:



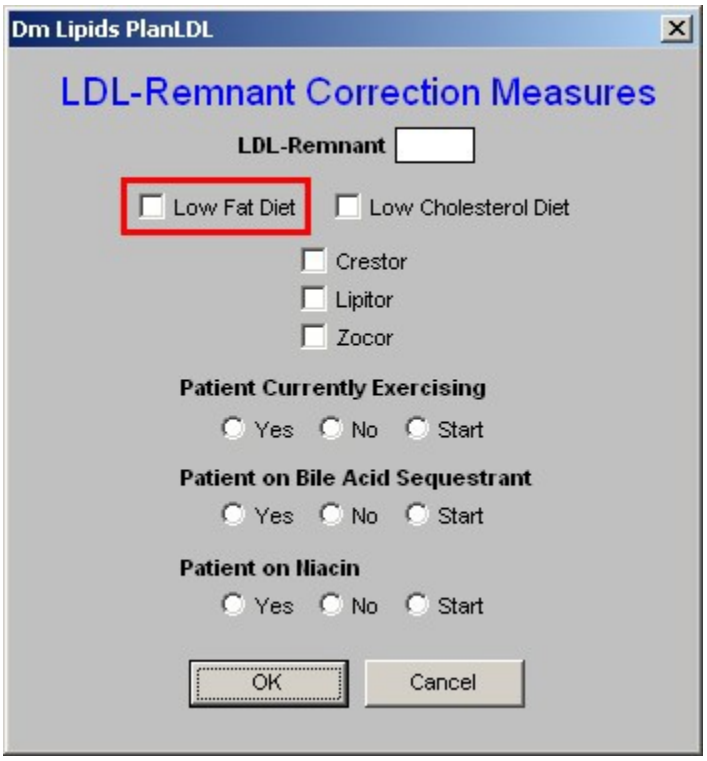
0. **LDL-Remnant** – this is a box where the laboratory result for this lipid particle appears if it is present in the system.

    . For an explanation of the **LDL-Remnant**, go to the Master Lipid Template and click on the name **LDL-Remnant**.
    . This will launch a brief document which explains the importance of this Lipid particle.

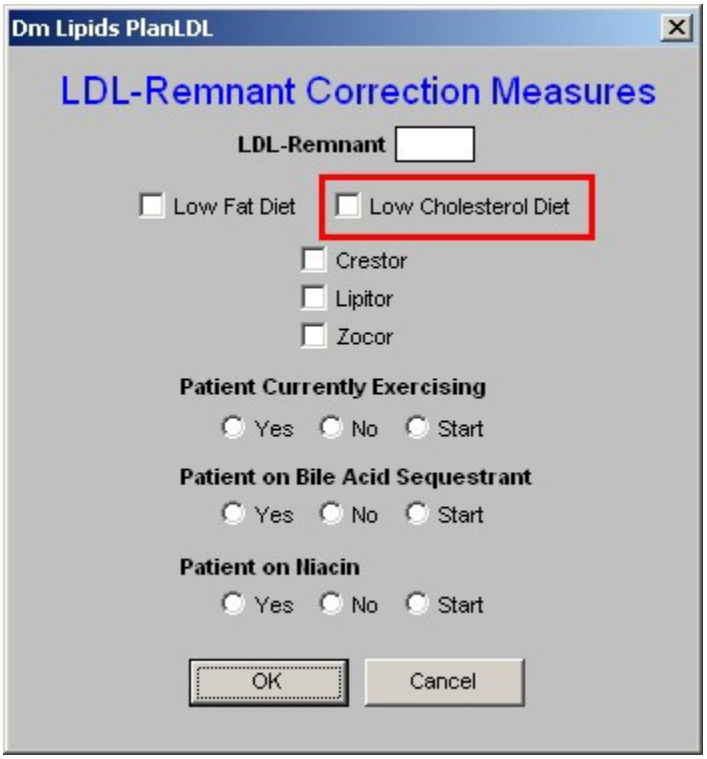


0. **Low Fat Diet** – the only two dietary interventions which affect the LDL-Remnant specifically are the **Low Fat Diet** and the **Low Cholesterol Diet**.

    . Checking the box next to **Low Fat** or **Low Cholesterol** will document that you are placing the patient on either or both of these diets.
    . It will also check the same on the **Life-Style Changes Template**.
    . Either of both diets should then be printed and given to the patient.
    . Either diet is printed from the **Life-Style Changes Template**.



3. **Low Cholesterol Diet** – See the explanation above on the Low Fat Diet.

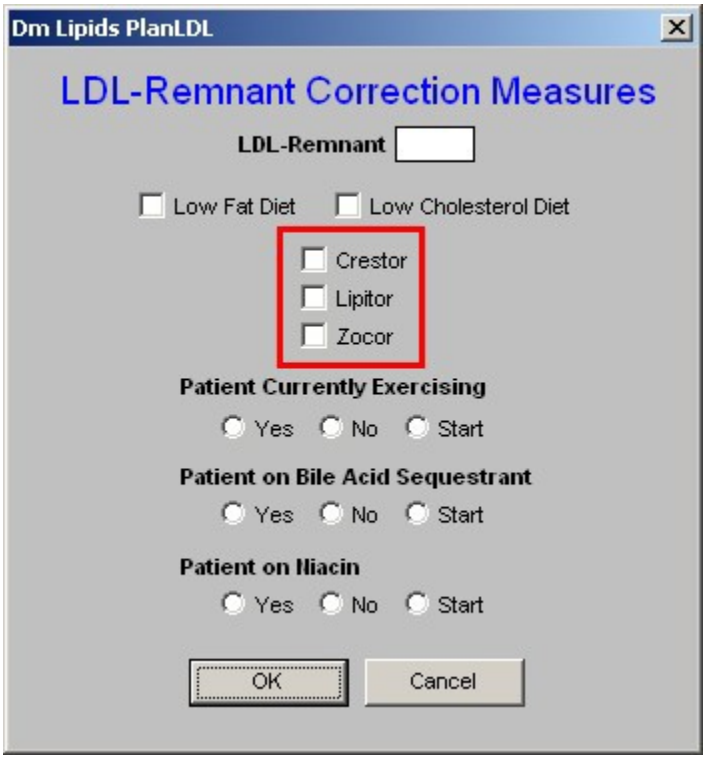


4. **Crestor** – There are only three statins which address the LDL-Remnant and they are Crestor, Lipitor and Zocor.
    a. If you elect to start the patient on Crestor, Lipitor or Zocor, there are two more

actions which you need to take.

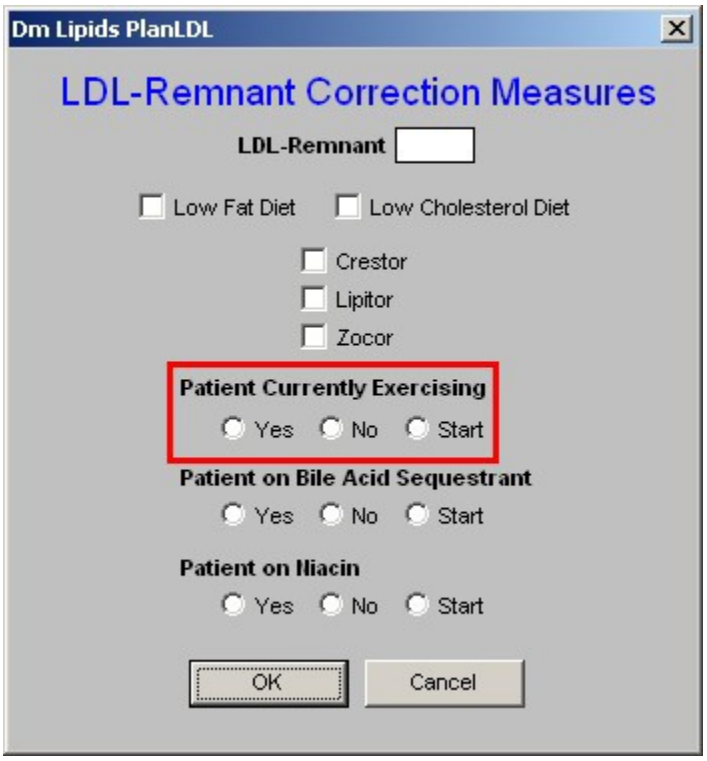
- One is to enter the medication in the space provided in the second column on the Lipid Plan template (see below).
- The other is to access the Medication Module from the Lipid Plan template and order the medication.

0. **Lipitor** – see the explanation above for Crestor.
0. **Zocor** – see the explanation above for Crestor.



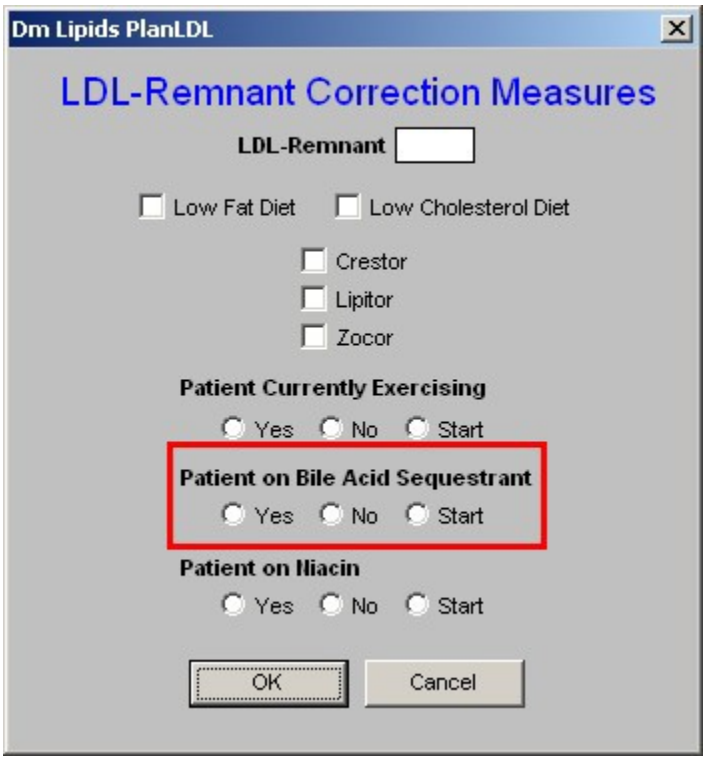
0. **Patient Currently Exercising** – Exercise is a critical element of treatment of any and all lipid abnormalities.

- Here there are check boxes for “yes,” “no,” and “start.”
- It is desirable to document the type, frequency and intensity of exercise which the patient is performing.
- This can be done from the Life-Style Template with its link to the Exercise template.



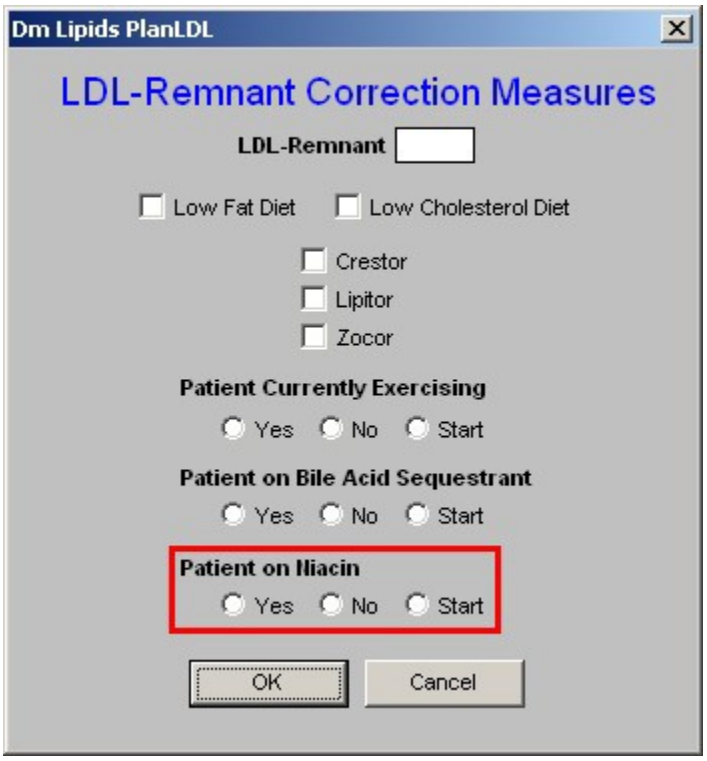
0. **Patient on Bile-Acid Sequestrant** – this is the second class of medications which affect the LDL-Remnant particle in lipids.

    . There are check boxes for “yes,”no” or “start.”
    . If you elect to start the patient on a bile-acid sequestrant, there are two more actions which you need to take.
    . One is to enter the medication in the space provided in the second column on the Lipid Plan template (see below).
    . The other is to access the Medication Module from the Lipid Plan template and order the medication.



0. **Patient on Niacin** – this is the third class of drugs which affects the LDL-Remnant.

. There are check boxes for "yes," "no," or "start."
. If you elect to start the patient on Niacin, there are two more actions which you need to take.
. One is to enter the medication in the space provided in the second column on the Lipid Plan template (see below).
. The other is to access the Medication Module from the Lipid Plan template and order the medication.

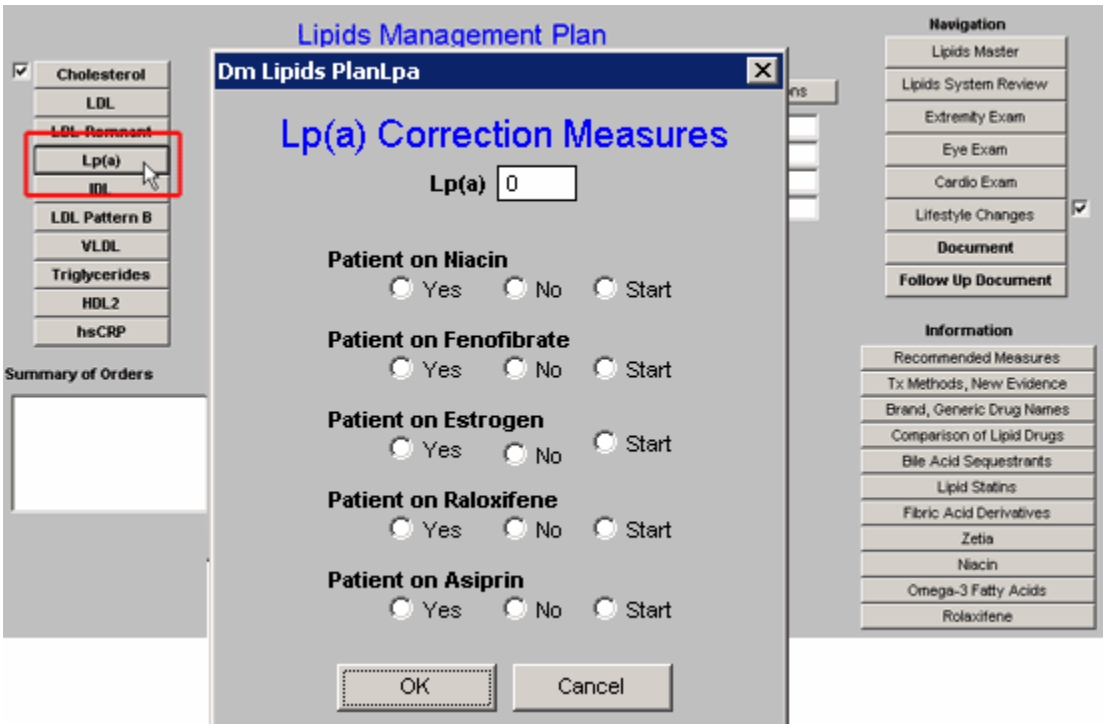


0. **OK** – this button saves your entries on this pop-up and closes the pop-up returning you to the Lipid Plan template.
0. **Cancel** – this button cancels your entries on this template

- **Lp(a)** – this is pronounced "Lp little a." Information on its significance can be found by launching the document attached to the name Lp(a) on the Master Lipid Template.

0. On the Lipid Plan template depressing the button entitled **Lp(a)** launches a pop-up entitled **Lp(a) Correction Measures**.
0. There are five sets of checkboxes labeled **"yes - no - start**."
0. As above, if any of these medications are chosen, they need to be entered into column 2 of the Lipid Plan Template (see below) and on the Medication Module.
0. The five medications which improve Lp(a) are:

. Niacin
. Fenofibrate
. Estrogen
. Rolaxifine
. Aspirin

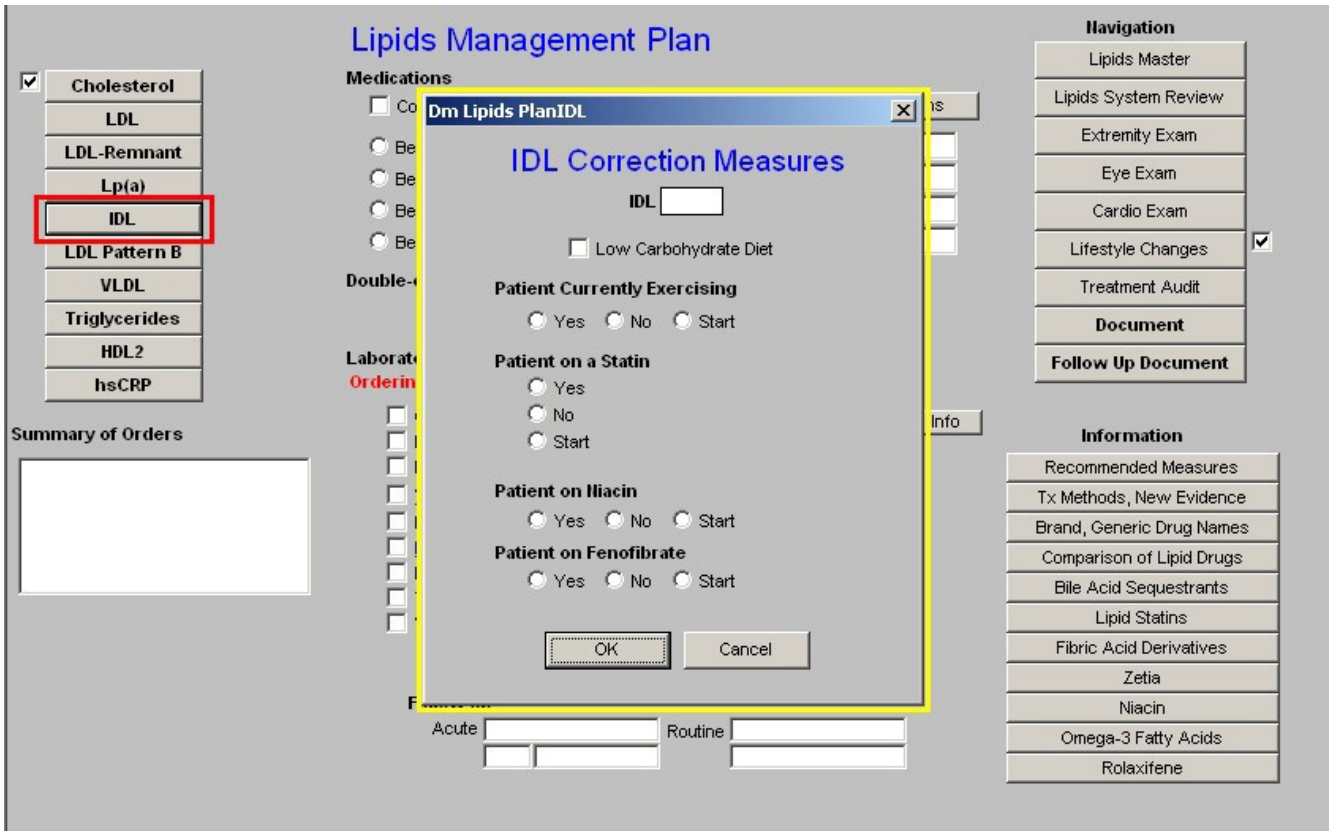


- **IDL** – this button launches a pop-up entitled **IDL Correction Measures**. It provides the following information and options:

    0. The value for the IDL if it exists in SETMA's lab system.
    0. Check box for a Low Carbohydrate Diet
    0. **Patient Currently Exercising** -- Check box for "yes," "no," or "start." Again, documentation of the patient's type, duration, frequency and intensity of exercise is available on the Exercise template which is launched from the Lipid's Lifestyle Changes Template.
    0. **Patient on Statin** – with a check box for "yes," no," or "start."

        Note: If the patient is on a statin or if a statin is started a box will appear which asks if the patient is on Co Enzyme Q 10 (CoQ 10) or not. All patients who on a statin would benefit from CoQ10 treatment as the statins significantly decrease this very important naturally occurring enzyme.

    0. Patient on Niacin
    0. Patient on Fenofibrate



Note: If any or all of these medications are started, they should be entered in Column 2 of the Lipid Plan template and in the Medication Module as well.

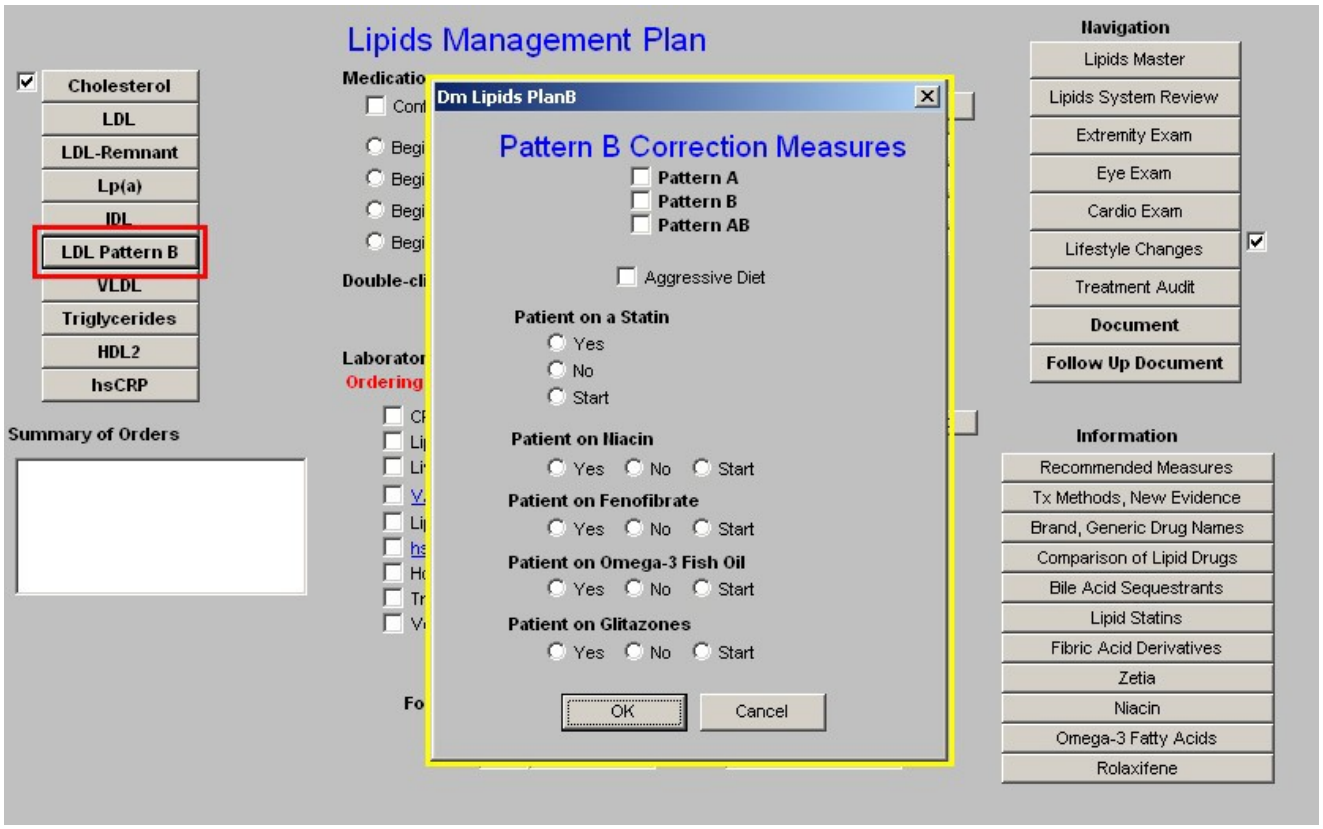
- **LDL Pattern B** – this launches a pop-up entitled Patten B Correction Measures. The pop-up provides the following information and options:

    0. The laboratory results of whether the patient has:

        . Pattern A (desirable),
        . Pattern B (undesirable) or
        . Pattern A/B (mixed).

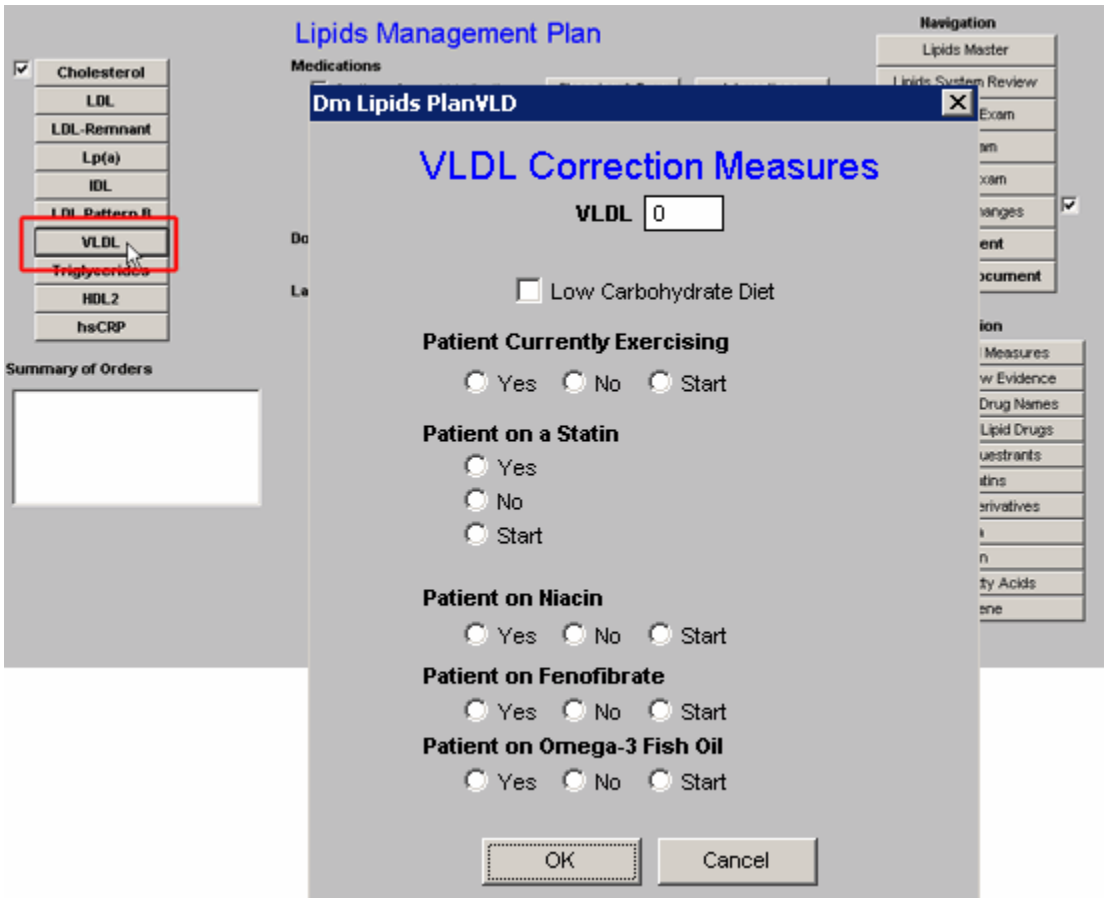
        Note: More information on these patterns can be found from the education information available on the **Master Lipid Template** (see above) or elsewhere on the **Lipid Plan Template** (see below).

    0. Aggressive diet
    0. Statin
    0. Nicacin
    0. Fenofibrate
    0. Omega-3 Fish Oil
    0. Glitazones



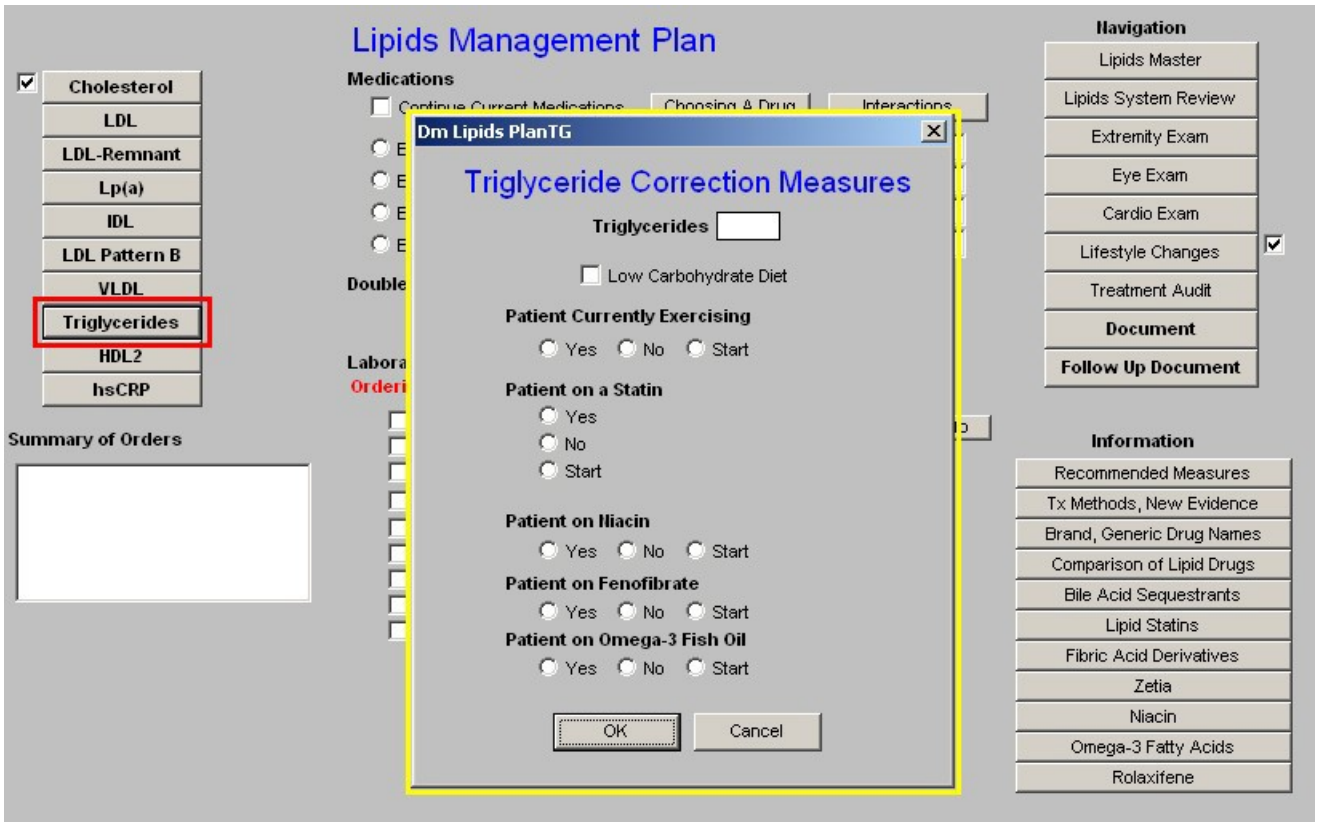
- **VLDL** -- this launches a pop-up entitled **VLDL Correction Measures**. The information and options include:

    0. VLDL lab results if available.
    0. Low Carbohdrate diet
    0. Exercise
    0. Statin
    0. Niacin
    0. Fenofibrate
    0. Omega 3 Fish Oil



- **Triglycerides**

    0. Triglycerides lab results.
    0. **Low Carbohydrate diet** – this is the most important aspect of treating triglycerides.
    0. Exercise
    0. Statin
    0. Niacin
    0. Fenofibrate
    0. Omega 3 Fish Oil

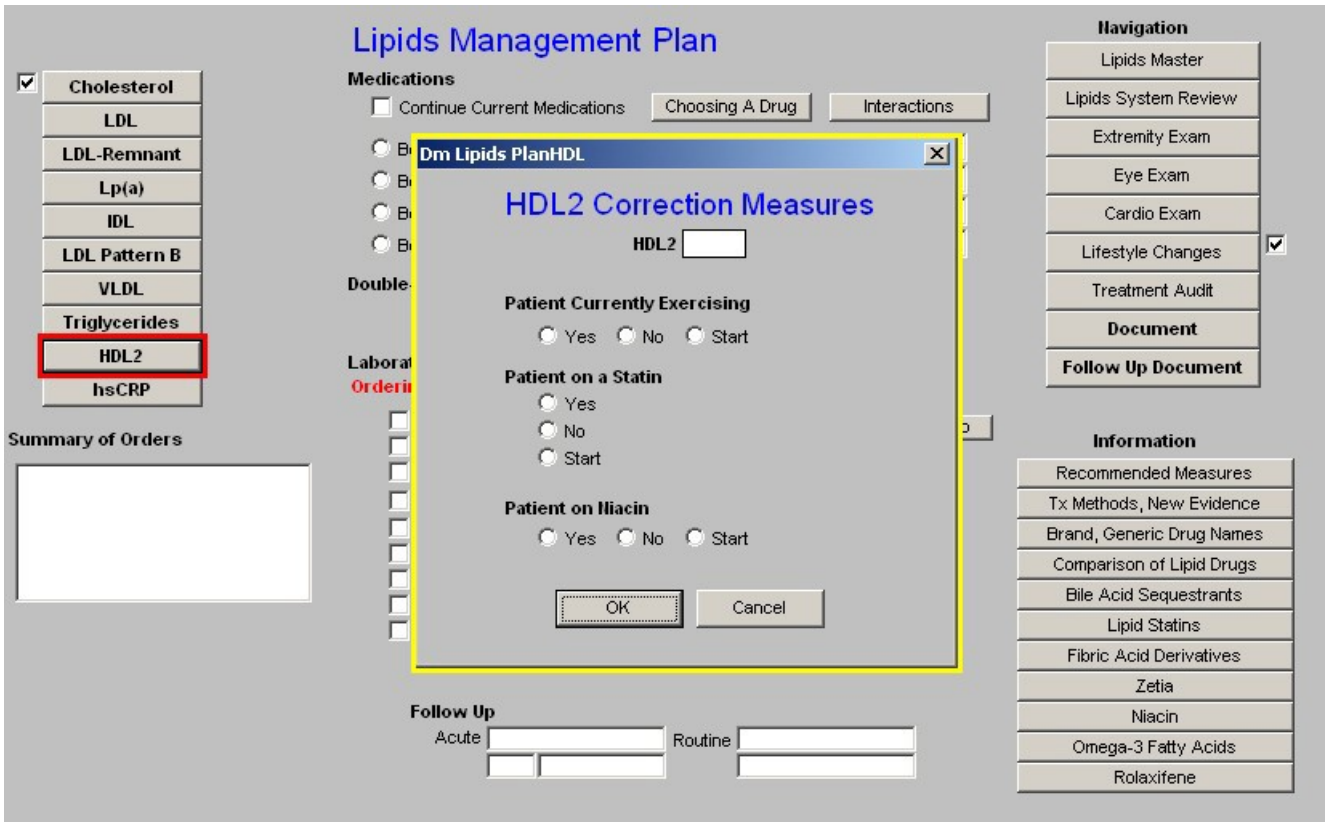


- **HDL2**

  0. HDL2 lab results if available

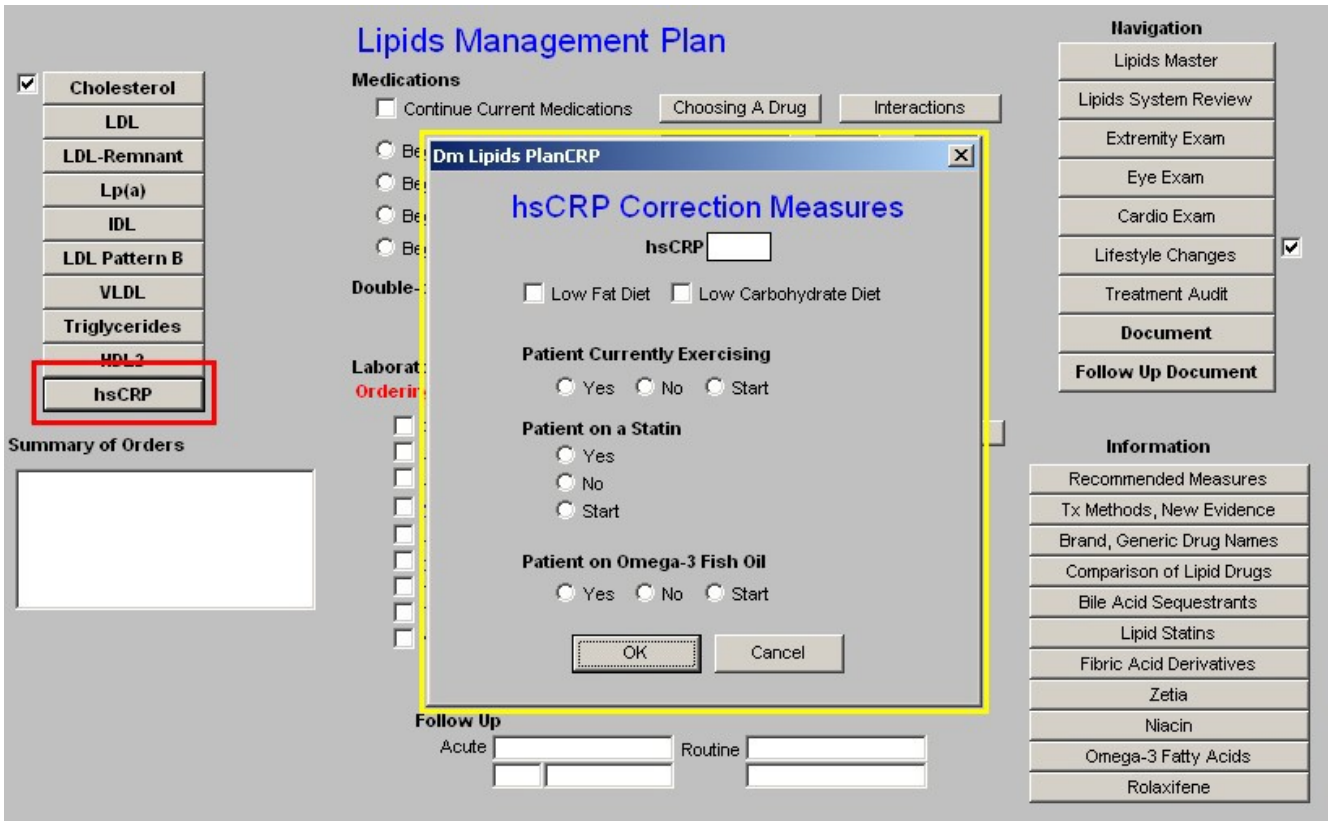
     Note: In the face of a low total HDL, even if the HDL2 and HDL 3 have not been measured, the treatment recommendations for low HDL2 apply.

  0. Statin
  0. Niacin



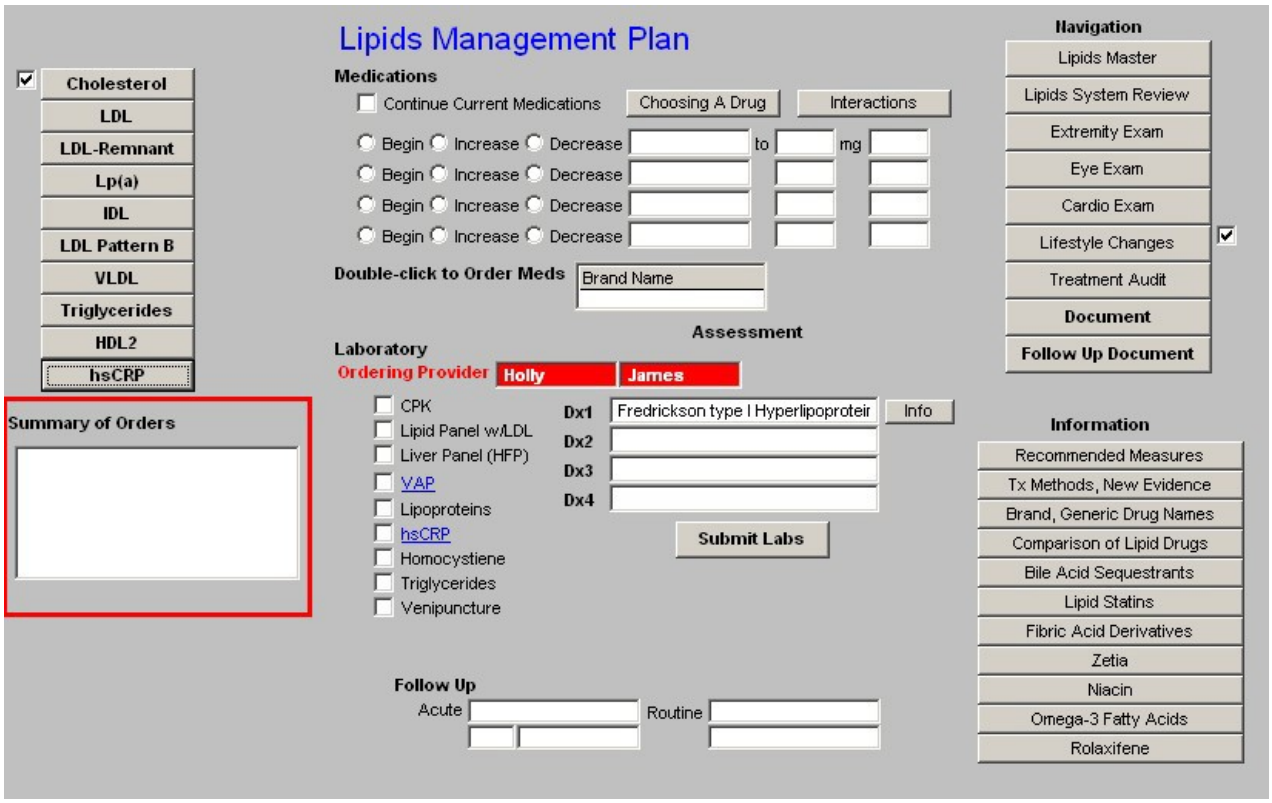
- **hsCRP**

    0. hsCRP lab results
    0. Low Fat
    0. Low Carbohydrate Diet
    0. Exercise
    0. Statin
    0. Omega-3 Fish Oil



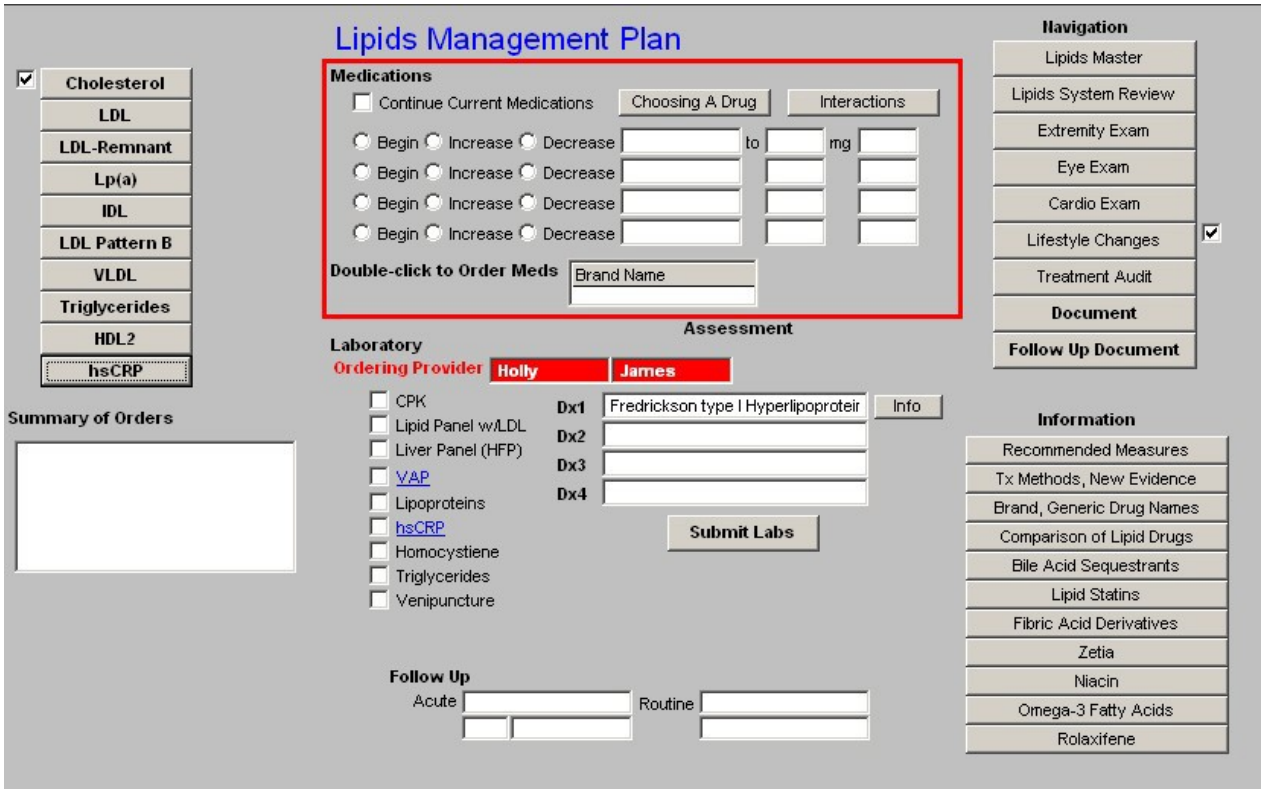
- **Summary of Orders**

  In this box, all treatment options which have been selected in the nine Correction Measures pop-ups above are summarized. Once all initiatives are determined, they should be documented in column 2, if medications, ordered in the Medication module and instructions given to the patient and/or to the unit clerk or nurse to give to the patient.



Column 2 –

Medications –

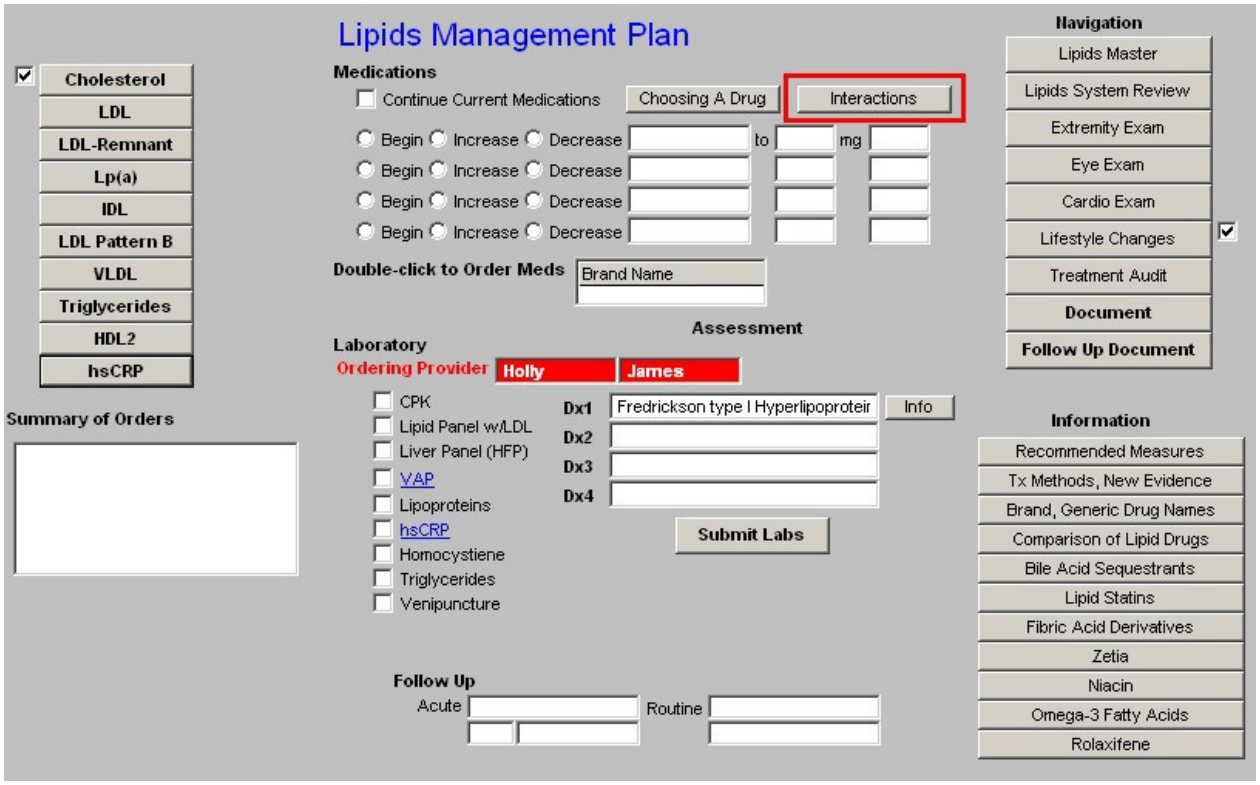


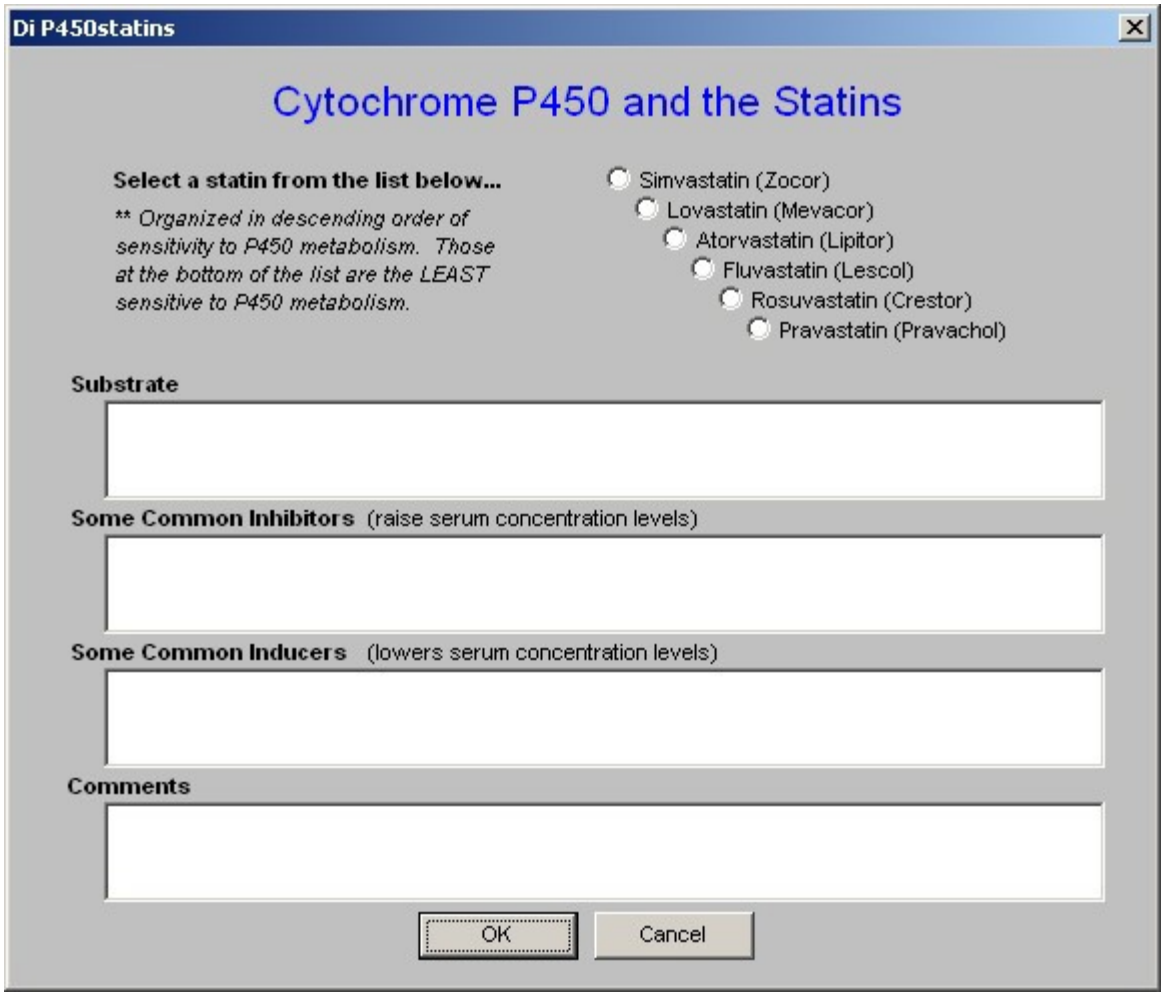
- **Continue Current Medications** – this check box allows you to continue present medications.
- **Choosing a medication** – this launches the same pop-up as on the links to Cholesterol
- **Interactions** – the growing number of drugs which are influenced by the Cytochrome P450 system makes it important for all providers to be able to easily review these interactions. It is impossible to know and/or remember all of this data. This function allows you to review it on line and in the midst of a patient encounter.

0. This button launches a template entitled "**Statins and Cytochrome P450**," which is a part of the **Drug Interactions** material which is found on the second line of AAA Home.
0. The link on Lipid Plan, displays the Cytochrome P450 material which relates specifically to statins.
0. The six statins listed are in descending order of sensitivity to the P450 system.
0. When accessed, this function allows for the selection of the statin of interest.
0. The following information is then given on the selected statin:

. **Substrate** – this identifies the P450 enzyme which affects this statin.
. **Common Inhibitors** – this identifies the drugs and/or substances which decrease the activity of the P450 enzyme and which therefore increases the blood levels of this statin and which therefore can cause toxicity.
. **Common Inducers** – this identifies the drugs an/or substances which increase the activity of the P450 enzyme and which therefore decreases the blood levels of this statin and which can therefore cause the drug to be ineffective.

a. **Comments** – this gives additional information about the impact of the P450 enzymes on this statin.




Di P450statins
Cytochrome P450 and the Statins
Select a statin from the list below...
** Organized in descending order of sensitivity to P450 metabolism. Those at the bottom of the list are the LEAST sensitive to P450 metabolism.
Simvastatin (Zocor)
Lovastatin (Mevacor)
Atorvastatin (Lipitor)
Fluvastatin (Lescol)
Rosuvastatin (Crestor)
Pravastatin (Pravachol)
Substrate
Some Common Inhibitors (raise serum concentration levels)
Some Common Inducers (lowers serum concentration levels)
Comments
OK
Cancel

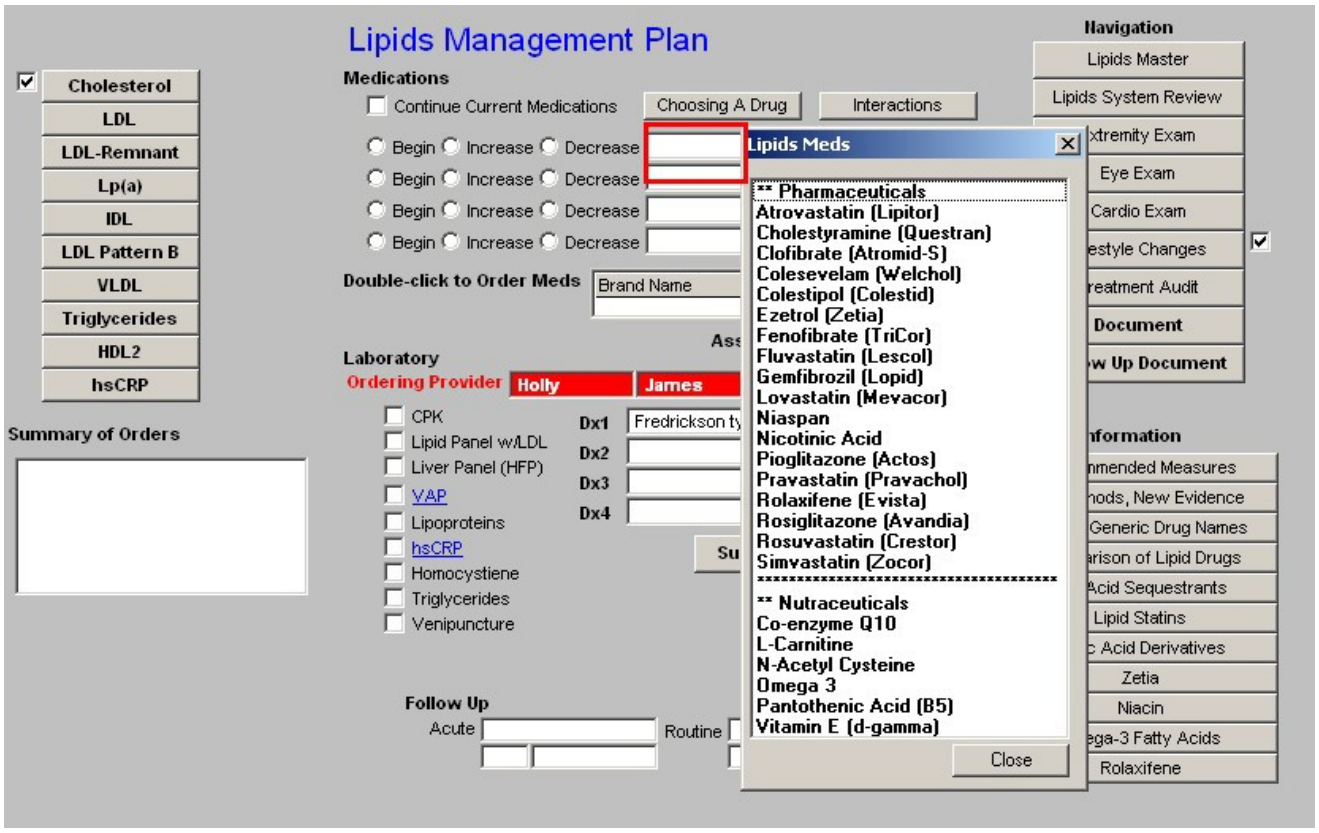
The next function in Column 2 is four sets of boxes for the beginning, increasing or decreasing of Lipid-related medications. The pick list for these boxes includes both pharmaceuticals and relevant Nutraceuticals.

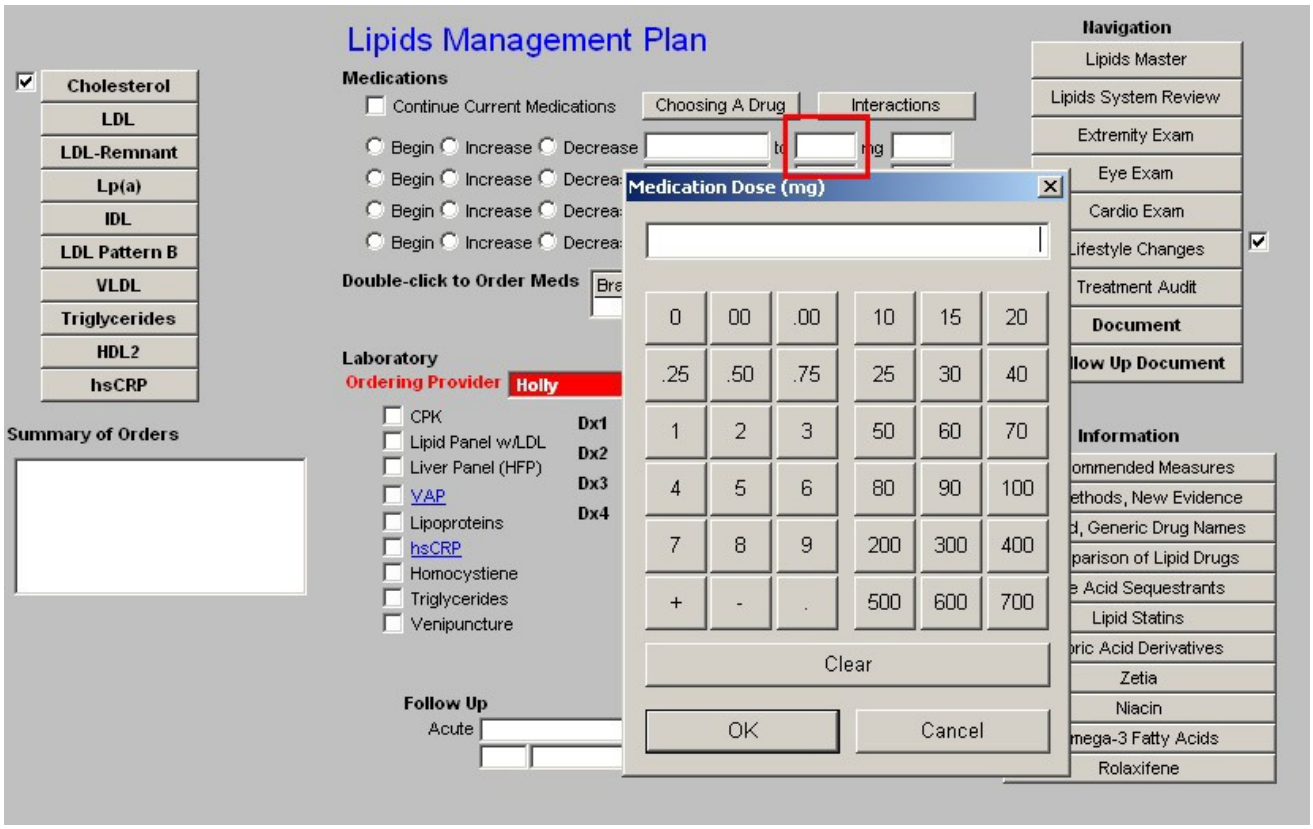
Pick List

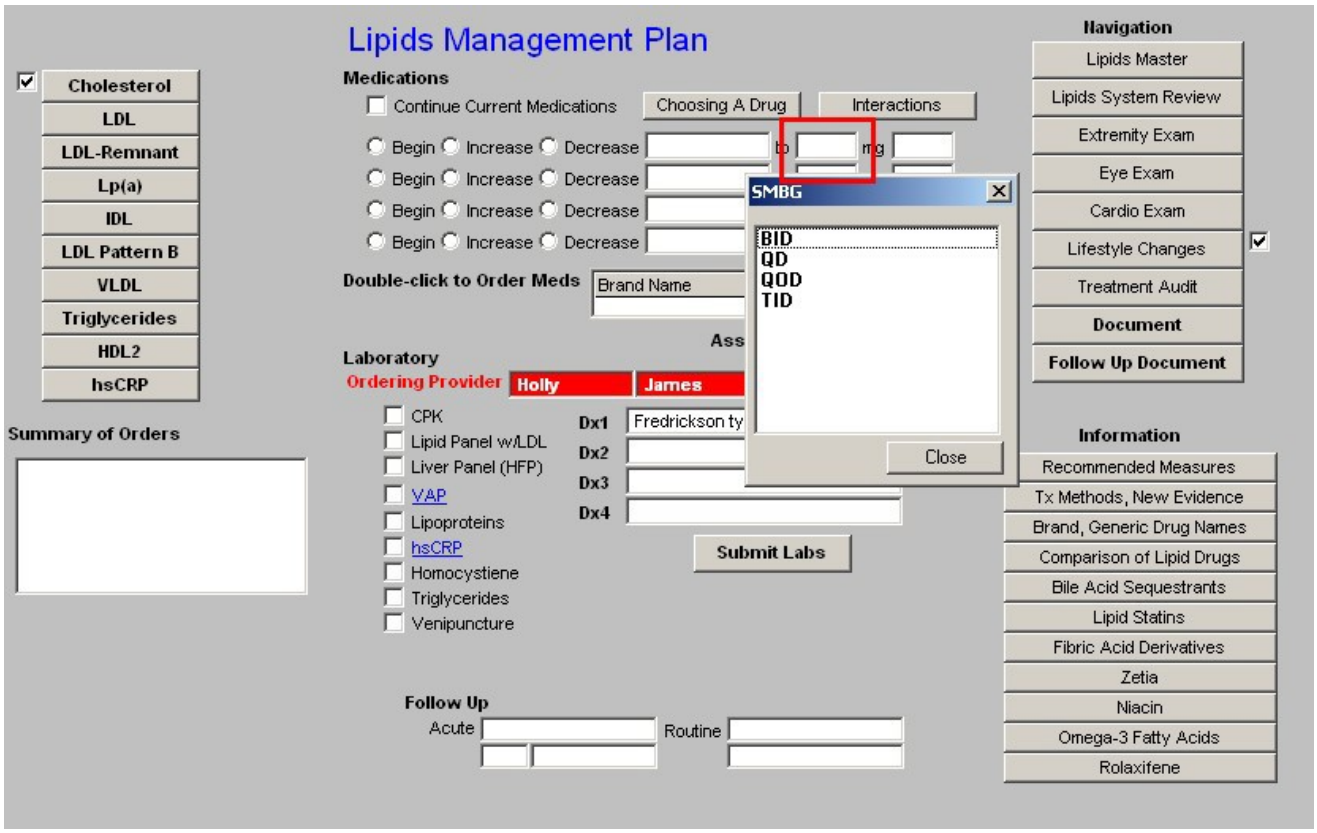
**** Pharmaceuticals**
Atrovastatin (Lipitor)
Cholestyramine (Questran)
Clofibrate (Atromid-S)
Colesevelam (Welchol)
Colestipol (Colestid)
Ezetrol (Zetia)
Fenofibrate (TriCor)
Fluvastatin (Lescol)
Gemfibrozil (Lopid)
Lovastatin (Mevacor)
Niaspan
Nicotinic Acid
Pioglitazone (Actos)
Pravastatin (Pravachol)
Rolaxifene (Evista)
Rosiglitazone (Avandia)
Rosuvastatin (Crestor)
Simvastatin (Zocor)

**** Nutraceuticals**
Co-enzyme Q10
L-Carnitine
N-Acetyl Cysteine
Omega 3
Pantothenic Acid (B5)
Vitamin E (d-gamma)
Cholifibrate (Atromid-S)

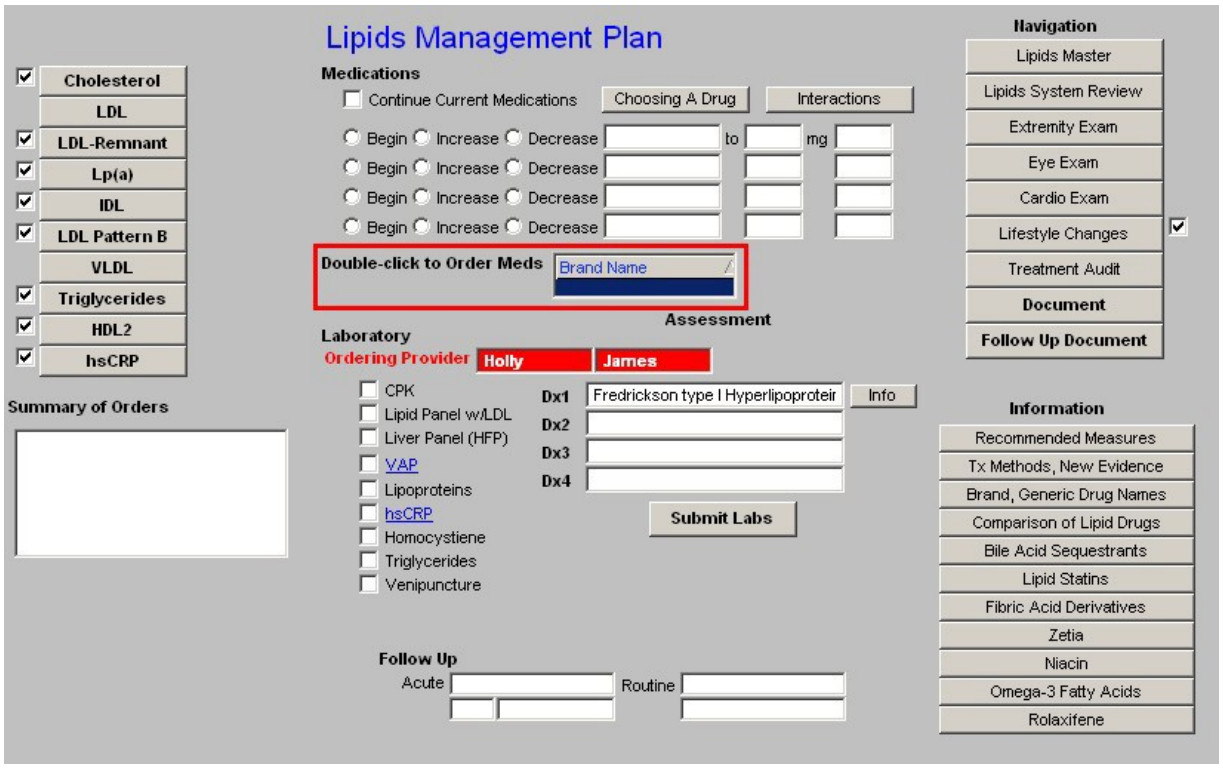
Space is provided for providing the name of the pharmaceutical and/or Nutraceuticals, the dosage and the frequency of dosing.


Lipids Management Plan
Navigation
Lipids Master
Lipids System Review
Cholesterol
LDL
LDL-Remnant
Lp(a)
IDL
LDL Pattern B
VLDL
Triglycerides
HDL2
hsCRP
Medications
Continue Current Medications
Choosing A Drug
Interactions
Begin Increase Decrease
Double-click to Order Meds
Brand Name
Laboratory
Ordering Provider
Holly
James
CPK
Lipid Panel w/LDL
Liver Panel (HFP)
VAP
Lipoproteins
hsCRP
Homocystiene
Triglycerides
Venipuncture
Dx1
Dx2
Dx3
Dx4
Fredrickson ty
Follow Up
Acute
Routine
Summary of Orders
Lipids Meds
** Pharmaceuticals
Atrovastatin (Lipitor)
Cholestyramine (Questran)
Clofibrate (Atromid-S)
Colesevelam (Welchol)
Colestipol (Colestid)
Ezetrol (Zetia)
Fenofibrate (TriCor)
Fluvastatin (Lescol)
Gemfibrozil (Lopid)
Lovastatin (Mevacor)
Niaspan
Nicotinic Acid
Pioglitazone (Actos)
Pravastatin (Pravachol)
Rolaxifene (Evista)
Rosiglitazone (Avandia)
Rosuvastatin (Crestor)
Simvastatin (Zocor)
** Nutraceuticals
Co-enzyme Q10
L-Carnitine
N-Acetyl Cysteine
Omega 3
Pantothenic Acid (B5)
Vitamin E (d-gamma)
Close
Extremity Exam
Eye Exam
Cardio Exam
Lifestyle Changes
Treatment Audit
Document
Follow Up Document
Information
Zetia
Niacin
Rolaxifene


Lipids Management Plan
Navigation
Lipids Master
Lipids System Review
Cholesterol
LDL
LDL-Remnant
Lp(a)
IDL
LDL Pattern B
VLDL
Triglycerides
HDL2
hsCRP
Medications
Continue Current Medications
Choosing A Drug
Interactions
Begin Increase Decrease
mg
Medication Dose (mg)
0 00 .00 10 15 20
.25 .50 .75 25 30 40
1 2 3 50 60 70
4 5 6 80 90 100
7 8 9 200 300 400
+ - . 500 600 700
Clear
OK
Cancel
Double-click to Order Meds
Laboratory
Ordering Provider
Holly
CPK
Lipid Panel w/LDL
Liver Panel (HFP)
VAP
Lipoproteins
hsCRP
Homocystiene
Triglycerides
Venipuncture
Dx1
Dx2
Dx3
Dx4
Follow Up
Acute
Summary of Orders
Extremity Exam
Eye Exam
Cardio Exam
Lifestyle Changes
Treatment Audit
Document
Follow Up Document
Information
Zetia
Niacin
Rolaxifene

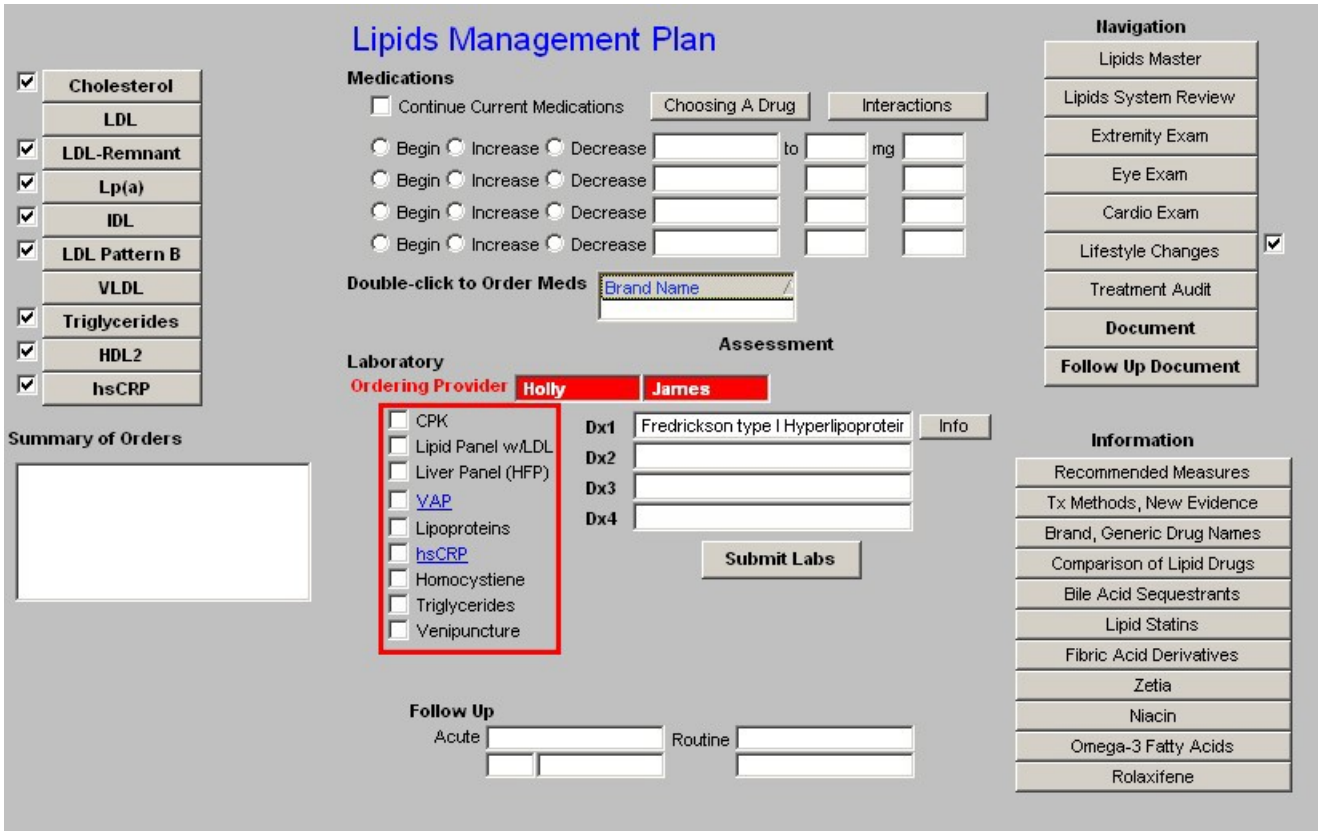


Beneath these four sets of boxes is a link to the medication module so that medications which are recommended can easily be ordered and placed in the patient's medication list.



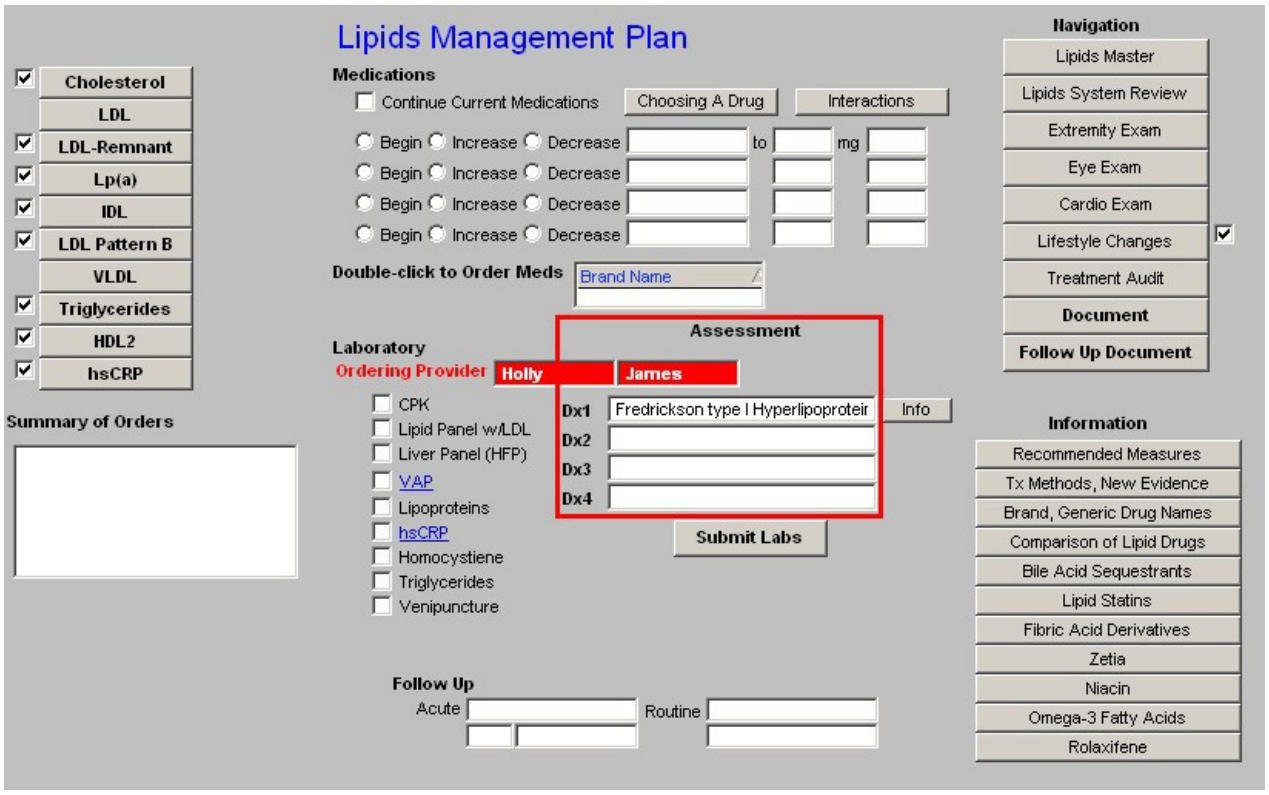
Beneath the link to the Medication module is a list of the Laboratory tests which can be ordered and charge posted from the Lipid Templates; they are:

- CPK
- Lipid Panel
- Liver Panel (HFP)
- **VAP** – when this option is selected, the five options which follow it are automatically checked as they are part of that evaluation. Remember, few insurance companies pay for a VAP although it is a very important part of a thorough Lipid evaluation.
- Spectophotometry
- Lipoproteins
- hsCRP
- Homocystiene
- Triglycerides



Next to the laboratory tests which can be ordered, are **four Assessment boxes** in which the patient's diagnosis can be documented.

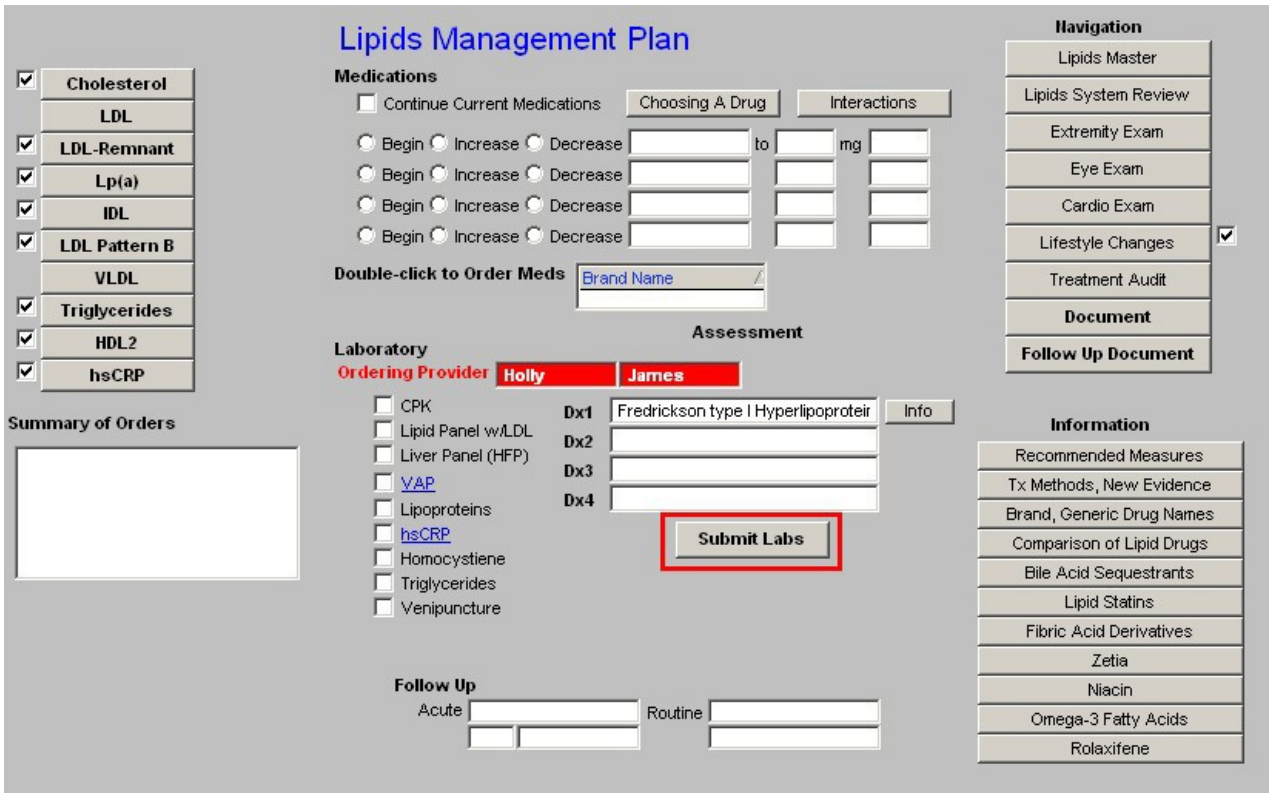
- Because this is a special tool, it is possible to associated more than one name with each ICD-9 code and still have it work with charge posting.
- Therefore, in the first two Assessment boxes you will see diagnoses that are only related to lipids. All of these lipid ICD-9 codes which are not available from SETMA's ICD-9 Code list which is associated with the Dx3 and Dx4 Assessment boxes.



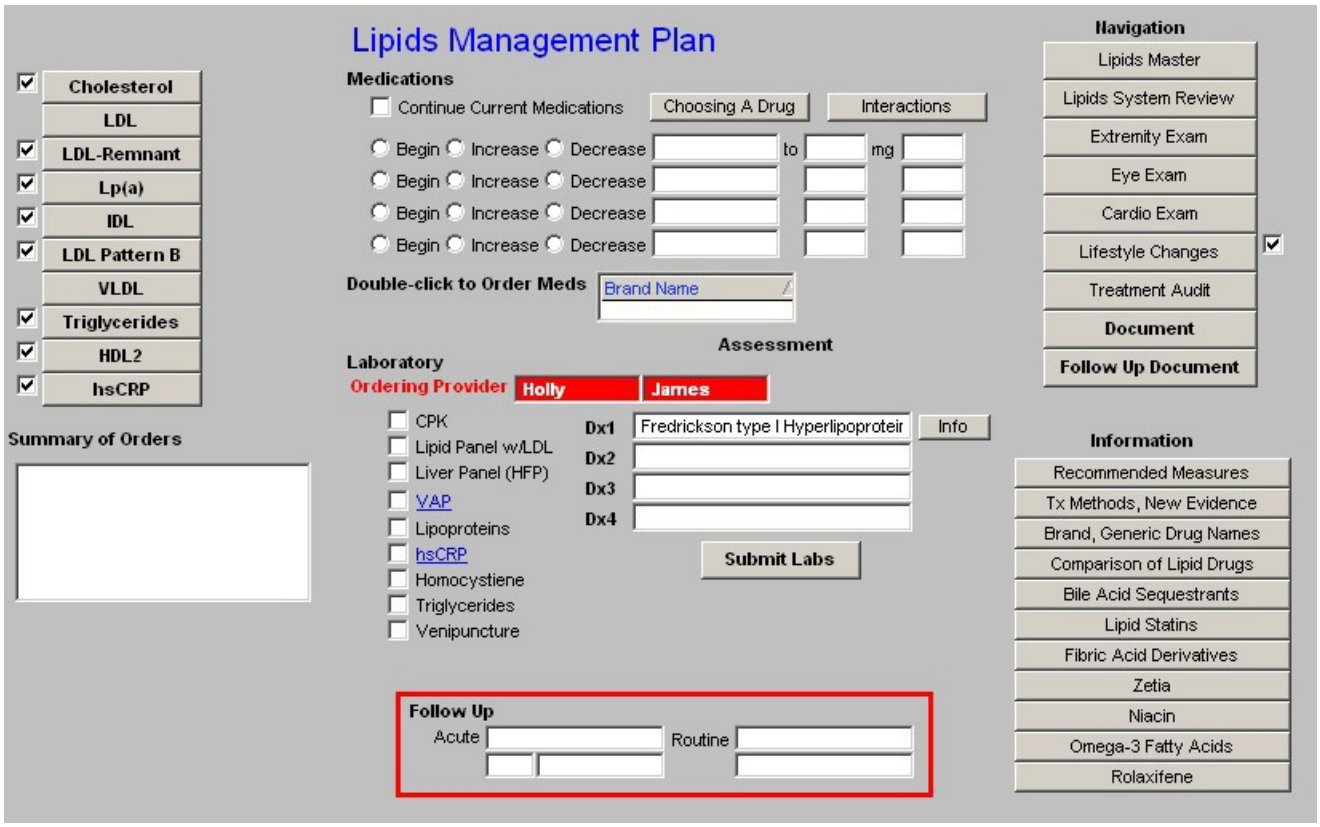
Note: When completed, the four Assessment options from the Lipid Plan will appear in the first four Assessment boxes on the Master GP Assessment Template. If you have already put data in those four boxes from another template, the Lipid Plan will overwrite them. Be aware of this and make allowance for it when using other templates for Assessment documentation.

Beneath the four Assessment boxes is a button entitled "Submit."

- Once you have completed the lab orders for Lipids
- Once you have completed the diagnosis for Lipids
- Click the "Submit" button and you will do four things:
    3. You will send the lab orders to the lab
    3. You will post the lab charges to the patient's chart
    3. You will place the lab orders on the Superbill – while this is not used any longer, it still exists and allows you to visually inspect your orders to see if you have done it correctly. You will find this function on the Master GP Plan Template.
    3. You will place the lab orders on the patient's chart.



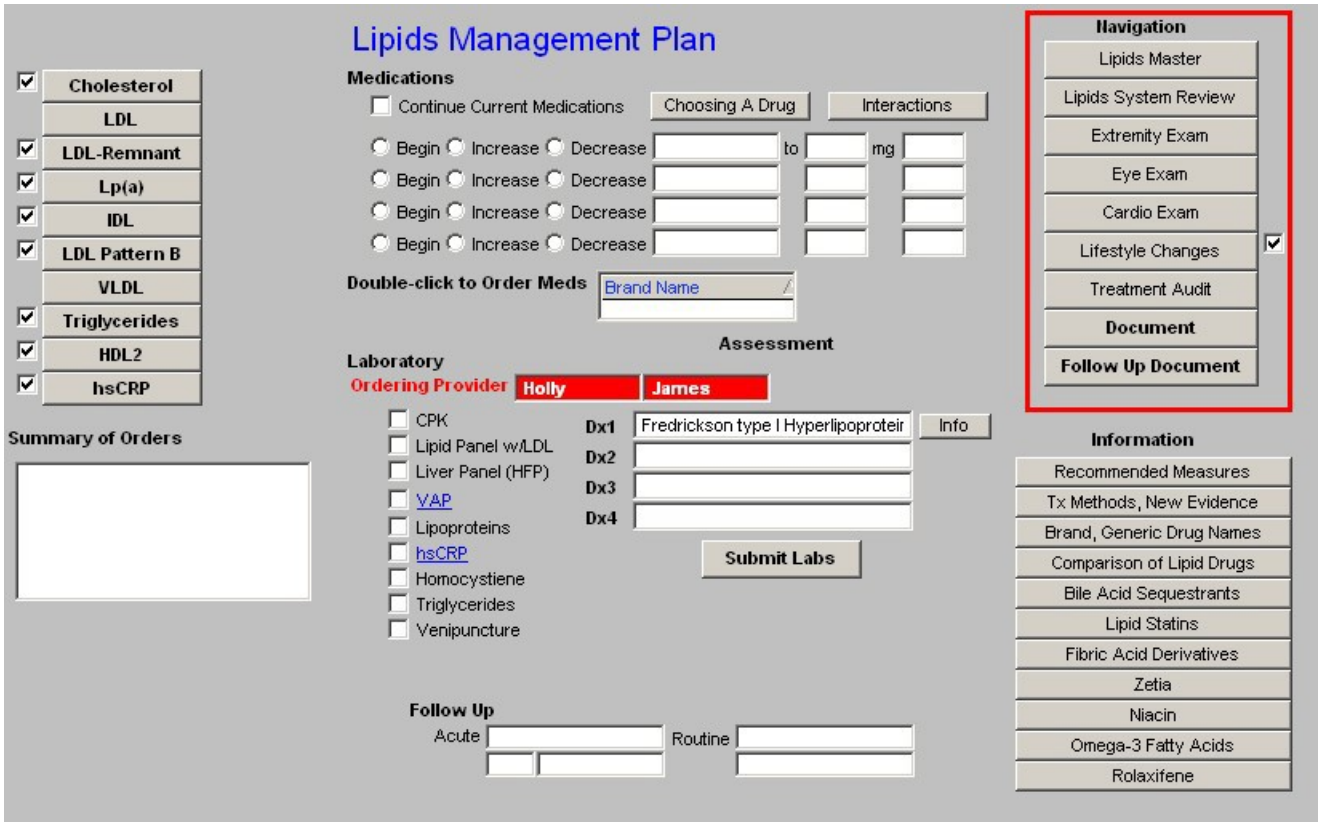
Beneath the lab tests is an option to note the timing and reason for a follow-up visit.



Column 3 –

Navigation Buttons – the following navigation buttons appear at the top of this column

- Lipids Master
- Lipids System Review
- Extremity Exam
- Eye Exam
- Cardio Exam
- Lifestyle Changes
- **Follow-up Document** – this document should be generated and given to the patient at each visit for lipid management.
- **Document** – this is the chart note for the Lipid Management Suite of Templates. It should be generated each time these templates are used.



Information – these are provider education document on the following subjects:

- Recommended Measures
- Tx Methods, New Evidence
- Brand, Generic Drug Names
- Comparison of Lipid Drugs
- Bile Acid Sequestrants
- Lipid Stains
- Fibric Acid Derivatives
- Zetia

- Niacin
- Omega-3 Fatty Acids
- Rolaxifene